Annex A

Country snapshots of distance education and e-learning in Latin America

Although the situation of e-learning in Latin America varies greatly across countries, all of them have seen an increase in the availability of e-learning in higher education.[1] One of the few aspects that are common to all the countries' experiences is that new policies and programmes involving e-learning have been strongly influenced by the objective of increasing access to higher education among the population. The concept of e-learning in Latin America is therefore intrinsically linked to distance education. This is hardly surprising, given the expanding supply of higher education in the region. Increasing the supply of higher education has been made the main objective, in some cases to the detriment of other equally important aspects such as the quality of programmes offered, especially for those with fewer resources, and the adaptation of programmes to meet the specific training needs of traditionally excluded sectors of the population.

Argentina

Argentina's early experience with distance education took place in a rather bleak academic climate. Distance education was associated with correspondence courses, which in turn were associated with poor-quality education. However, various factors gave rise to new distance-learning methods in the late 1990s: larger Internet coverage and broadband coverage and the need to increase the supply of postgraduate training.

Virtual education[2] in Argentina is at a crossroads. Although much of the virtual distance education comprises postgraduate courses, extension programmes and parts of face-to-face courses, Argentina now has some entirely virtual undergraduate degrees. However, if we look at the overall picture, virtual education in Argentina is still at the early stages of development. Consequently, there remain a series of problems, such as the poor educational quality of much of the virtual-education material, the scant teacher training for virtual education, and the reduced capacity for introducing information and communication technologies (ICTs) into the teaching methods and for managing ICTs.

The government does not have policies focused on developing e-learning initiatives in higher education, despite its support for strengthening human resources in ICTs. The main grant schemes run by the Ministry of Education's Secretariat of University Policies and the Ministry of Science, Technology and Innovation include the ICT Grants, which focus on strengthening the human resources available for using ICTs and raising the number of students taking ICT-related degrees. Through this scheme the government acknowledges that ICT degrees are a priority to improve employment in the country, given the excess demand compared to the supply. Nevertheless, although the impetus given to ICT degrees is linked to the possibility of implementing virtual education programmes, the Argentine government does not have policies aimed at developing such initiatives in higher education. The only national government programme explicitly designed for e-learning is the Ministry of Education's Distance Education Service (*Servicio de Educación a Distancia*), which focuses on meeting the educational needs of the children of Argentines living abroad. This programme centres on a Virtual Campus with primary- and secondary-school material, the main purpose of which is to prepare the pupils so they can rejoin the Argentine education system once they return to the country.

Despite the lack of policies, there is a considerable number of virtual education programmes in Argentina. One of the most prominent is the Virtual University programme run by the National University of Quilmes (UNQ). This programme has an entirely virtual education system offering bachelor's degrees (*licenciaturas*) and foundation degrees (*tecnicaturas*). Since the university restructured its curriculum in 2011 the programme now offers common-core degrees (*Tronco Único*, similar to a traditional degree) and additional programmes (*ciclos de complementación*) for graduates, offering much more flexible training options. Another case worth highlighting is the National Technological University (UTN), which provides the entire university community with access to a range of ICT resources through its UTN Virtual

platform. The UTN also has a Global Virtual Campus platform, a pilot project it set up in 2007 to provide access to seminars and virtual classrooms which supplement subjects taught using face-to-face learning at the university's various sites.

Distance virtual education courses in Argentina are of fairly poor quality. One of the main causes is that this form of teaching was not always expanded to introduce new teaching methods and practices, but for other motives. Some universities saw the development of distance virtual education as an opportunity to increase revenue (private universities) or funding (public universities). There was also the view that this form of teaching could reduce the workload for students during their first years without requiring the building of new facilities, and that the system would be much cheaper to run. This first stage of the development of virtual education was marked by "the naive idea that digitising classroom lectures and posting them on line was enough to create a virtual course" (Rey, 2010). Similarly, the new methodologies used seemed to suggest that virtual repositories and tools were sufficient on their own to build knowledge. Using videos and the Internet alone as learning material or virtual forums as the only spaces for interaction turned these pseudo-virtual educational methods into poorly developed educational options.

Furthermore, the pedagogical model for virtual education in Argentina is poorly developed and outdated. E-learning has incorporated many different media and methods, yet the main constraint on its development is not the outdated technology, but the persistence of an obsolete educational model that is still being used out of complacency and out of a fascination with novelty. As a result, trust is placed in virtual media and innovations and too little emphasis is placed on assessing, criticising and improving the deficiencies encountered when these methods are implemented.

Virtual education has not been developed as a tool to increase equitable access and equal opportunities in education. To some extent, since its very beginnings distance education has been seen as a tool to expand the supply of education rather than as an opportunity to benefit from other potentialities to meet specific educational demands. More broadly, Argentina still suffers from a lack of information regarding trends in education, so it has been unable to build a planning policy based on criteria such as quality, relevance and equity.

Bolivia

The expansion and influence of new ICTs has affected the educational model of Bolivian higher-education institutions (HEIs), mainly in the area of administration. The incorporation of ICTs has focused on management resources. However, few academic developments have been achieved that allow migration to ICT-based educational models. Interestingly, the very factors that hinder the implementation of an integral education system and hinder access to the system (poor physical access and poor connectivity among different regions) also make the country an ideal environment for developing e-learning. Although ICTs are becoming increasingly popular in universities and have been absorbed into their education system, they have still not made an impact on traditional educational models. In 2010, only five universities had the necessary infrastructure (its own virtual platform) to implement virtual learning and blended learning in the future (Padilla, 2010).

Most e-learning courses currently available are postgraduate, and few are entirely virtual. A notable example is the University of San Simón (UMSS), which has strengthened its academic and administrative management by introducing virtual resources. Although the UMSS does not explicitly have a virtual academic model, the institution is notable for its use of ICT-based learning methods, especially in the Faculty of Science and Technology and the Faculty of Economics (Padilla, 2010).

Another notable example in virtual education are the linkages formed between universities and international co-operation. Specifically, the "University Specialist in Research and Knowledge Transfer Planning and Management in Universities" course aims to bring together scholars from various public and private universities to train them in designing and organising a research and knowledge-transfer strategy and a university interface structure for their research centres. Introduced in 2009, the course has a blended format with 10% of sessions provided through itinerant face-to-face seminars in five of the country's nine *departamentos* (regions) and 90% provided via the virtual platform (Padilla, 2010).

The higher-education programmes have generally been successful at incorporating new technologies into their teaching, but they have not incorporated pedagogical changes as a result. Consequently, new technologies have been limited to their traditional role of supporting teaching.

Unlike face-to-face programmes, few virtual programmes are designed to strengthen equity. Bolivia is one of the Latin American countries with the strongest higher-education programmes aimed at indigenous populations.

However, e-learning has not been offered to indigenous populations. The development of such initiatives has largely been hindered by the connectivity constraints experienced by Bolivia today.

Brazil

Brazil has a long tradition of distance education. It first began using distance education in the early 20th century, offering correspondence courses. Between then and the 1980s there were few developments in distance education in the country, which were limited mainly to educational television programmes and the subsequent development of TV courses promoted by various private foundations and non-governmental organisations.

Distance education began to expand in the 1990s thanks to measures such as the 1996 Education Act (*Lei de Diretrizes e Bases da Educação Nacional*). The Act recognises distance education as a valid teaching method that is equivalent to other teaching models (Lupion et al., 2010). Two public universities were set to introduce distance-education methods and methodologies: the Federal University of Mato Grosso (UFMT) and the Federal University of Santa Catarina (UFSC). The UFMT "developed a distance-education model that provided face-to-face support for students in some cities, with libraries and study rooms and periodic meetings between students and their tutors" (Lupion et al., 2010). The UFSC, meanwhile, developed the first effective uses of the Internet, video conferencing and satellite teleconferencing to offer specialised courses, master's degrees and continuing education through distance learning" (Lupion et al., 2010)

Between 1995 and 2000 other universities began to introduce their own initiatives (AulaNet at the Pontifical Catholic University of Rio de Janeiro [PUC-Rio], Eureka at the Pontifical Catholic University of Paraná [PUCPR] and TelEduc at the University of Campinas [UNICAMP], etc.). These efforts laid the foundations for virtual-university models and the strategic use of Internet resources as learning tools and as tools for communication between students and tutors in distance courses.

Since 2000, Brazilian HEIs increasingly began to seek Ministry of Education accreditation to provide virtual higher education and expand their supply of courses. Between 2000 and 2007, the number of virtual HEIs grew from 7 to 48 in the public sector and from none to 49 in the private sector. The total number of public-sector and private-sector programmes also grew from

10 to 408 during the same period. The number of enrolments, meanwhile, increased from 1 682 to 36 9766 over the same period. In 2008 there were 727 961 students enrolled on e-learning programmes, representing 12.5% of the 5.8 million undergraduate enrolments in the country (Lupion et al., 2010).

Over the past two decades, distance/virtual education has received government support through a series of public policies. At the legislative level, the Brazilian government has issued a series of decrees through its Ministry of Education. These decrees (in 1998, 2001, 2004, 2005 and 2007) concern the regulation of various aspects and competences in virtual education in the country, from accreditation procedures to guidelines for implementing expansion models. In addition to the regulatory aspect of the government's first major milestone in the 1996 Education Act, the Ministry of Education has also introduced a series of other initiatives, including: *i)* the Distance Education Secretariat created in 1998 to develop ideas to improve the quality of distance education; *ii)* the National Educational Technology Programme (*Programa Nacional de Tecnologia Educacional*, ProInfo) created in 1997 to promote the pedagogical use of ICTs in public primary and secondary schools; *iii)* the National Teacher Training Network (*Rede Nacional de Formação de Profesores*) created in 2004 to help improve the training of pupils and teachers in public education by producing guidance material for distance or blended learning; *iv)* Rede e-Tec Brasil, a network set up in 2007 to provide technical and professional training through access to free, public distance courses offered in collaboration with the corresponding state, federal district or local authority; and one of its biggest initiatives, *v)* the Open University of Brazil (*Universidade Aberta do Brasil*), created in 2006 to set up on-site support centres to encourage public HEIs to include distance learning in their undergraduate and postgraduate programmes and to offer higher-education e-learning programmes to students and teachers, as well as training for administrative staff, tutors and directors at institutions that are introducing distance learning.

The period of expansion of virtual education in Brazil enabled research and development to be conducted in the field, resulting in virtual education that is of relatively high quality. This momentum enabled the development of aspects such as virtual learning environments, university-designed virtual methodologies, administrative management strategies, pedagogical approaches and other approaches and tools related to the introduction of distance-education courses that have a strong virtual component. Consequently, in the past two decades during which this mode of education has been growing, a wide range of pedagogical methods have been developed and refined, including: TV education, in which satellite television is used for live broadcasts of classes; video education, which uses video classrooms for

playing pre-recorded classes; blended learning, where distance education is supported by face-to-face methods such as tutorials and access to laboratories and libraries; the Virtual University, a model that makes intensive use of digital technologies to deliver content and to enable interaction between students and teachers, limiting face-to-face sessions to exams; and models that alternate between distance-education periods and periods of regular attendance at educational institutions. These measures have led to relatively high-quality e-learning programmes in Brazil, some of which are even of better quality than face-to-face programmes. A study conducted in 2005 and 2006 by Professor Dilvo Ristoff based on the results of the National Student Performance Exam (*Exame Nacional de Desempenho de Estudantes*) found that distance learners performed better in 9 of the 13 areas assessed during their first semester after admission, and 7 of the 13 areas assessed during their final semester before graduation (Lupion et al., 2010).

The inclusiveness of virtual education in Brazil seems to be one of its main strengths and potentialities. Data show that distance programmes have more married students (52% vs. 19% in face-to-face programmes), more students with two or more children (44% vs. 11%), fewer white students (49% vs. 68%), relatively poorer students (43% vs. 26% with a salary of no more than three times the minimum wage and 13% vs. 25% with a salary of ten or more times the minimum wage), and students whose parents have poor qualifications (18% vs. 51% for fathers and 24% vs. 54% for mothers), etc. (Lupion et al., 2010). The data suggest that the way distance learning is being introduced in Brazil is improving access to higher education.

Chile

Distance/virtual education in Chile developed in three main phases: *i)* the correspondence phase, when material was printed and sent by post; *ii)* the media phase, when radio was used and, in particular, educational television was developed; and *iii)* the current phase, in which distance education makes intensive use of ICTs over the Internet.

E-learning has been implemented by various HEIs in various forms such as e-support, blended learning and entirely virtual learning, with blended learning being the most popular. E-learning has mainly taken off in universities, but the other two types of HEI in Chile, vocational colleges (*institutos profesionales*) and technical colleges (*centros de formación técnica*), have also begun to introduce this mode of study. The educational content of the

programmes has focused on short, non-degree courses designed to provide working adults with skills and greater knowledge. Nevertheless, e-learning has gradually expanded to include postgraduate courses. In 2008, academic courses in Chile with online content were distributed as follows: doctorates 1%, master's degrees 8%, undergraduate degrees 9%, diplomas 27% and other courses 55% (Farcas, 2010).

One notable institution for the incorporation of e-learning initiatives is the Pontifical Catholic University of Chile (UC), with the programmes available through its Continuing Education Programme. Perhaps the best example of virtual education in the country is provided by the University of the Arts, Sciences and Communication (UNIACC). This institution began as a vocational college in 1981 before becoming a university in 1991. As early as the 1990s it began introducing ICTs as an essential part of its academic activity. As it did so, it began to introduce virtual tools such as the e-campus, a virtual platform that provided e-support and enabled the subsequent development of e-learning programmes. In 2004, UNIACC launched a pioneering initiative: the first 100% online commercial engineering programme. Today, UNIACC offers a range of entirely virtual undergraduate and postgraduate programmes. Its experience in developing virtual-education programmes is a good example of some of the developments made possible by this teaching method, which are by no means limited to pedagogical support.

Although the adoption of e-learning models should bring about changes to the traditional educational paradigm, especially in teacher-student interaction, not all institutions offering e-learning have managed to bring in such changes. Institutional experiences with e-learning have therefore had mixed results. Despite the government's and the educational institutions' expressed desire to include ICTs as an integral tool in education, e-learning has not been fully incorporated into Chile's higher-education system, a system for which there is no specific regulation certifying and guaranteeing that the quality of e-learning shall be the same as that of face-to-face education.

The introduction of certain forms of e-learning has reduced the impact of the physical distance between teachers and students, fostering more equitable access to higher education. In addition, new spaces for teaching have been created, resulting in more mature students (over 24 years old) and a better capacity to respond to the needs of adult students.

Colombia

One of the main events that boosted distance education in Colombia was the government's decision in 1982 to set up a Distance Education Subsystem (*Subsistema de Educación a Distancia*) because it was unable to meet the demand for education that existed at the time. The new distance-education institutions were subject to the same legal framework as standard post-secondary education, and tended to focus on technical programmes, even though their original objective was to introduce forms of distance education. In light of this situation, many higher-education teachers opposed the initiatives, considering them a threat to the stability and quality of the face-to-face teaching they provided. But perhaps the biggest problem was that its other distance education programmes disappeared at the same time that the Distance Education Subsystem – the only programme to receive financial support during those times of crisis – was introduced. Instead of building on past experiences, Colombia launched a new distance education model designed as a "substitution", and this was the main obstacle to the implementation of distance education in Colombia.

The programmes introduced in the 1980s failed to replicate the experience of hugely popular radio and television programmes that preceded them. In the 1980s only six universities in the whole country began to experiment with blended distance education methods, making almost no use whatsoever of audiovisual resources. At the time, the Ministry of Communications allocated the programme's slots and their infrastructure to commercial programmes.

The transition to third-generation distance education, i.e. via the Internet, was no less complicated an experience. The transition began in around 1989, when agreements were reached with foreign institutions such as Monterrey Institute of Technology (ITESM) in Mexico. However, during those early years the Colombian institutions and programmes focused on virtual enrolment, broadcasting and administration rather than on developing the academic content. In the mid-1990s, with distance education beginning to grow nationally and internationally, the Colombian Association of Distance Higher Education (ACESAD) was formed. To this day it continues to pursue its objective of introducing distance-education programmes into Colombia's various HEIs to promote quality-improvement strategies. The first national education programmes using digital media began in 1997 and 1998, but due to connectivity constraints virtual media were only used to deliver content on line and to replace printed material with digital material.

By 2008, Colombia had 44 institutions offering 170 e-learning programmes to 144 605 students on a wide range of subjects, at several levels of education and using various methods. E-learning accounted for 10.05% of enrolments in higher education (Facundo, 2010). The Colombian institutions with the most prominent e-learning programmes include the National Open and Distance University (UNAD), which currently accounts for half of e-learning enrolments (Facundo, 2010), and the National Academic Network of Advanced Technology (RENATA), whose services range from videoconferencing and virtual libraries to national virtual-education centres and links with international e-learning networks in Europe and the United States.

Much of the expansion of virtual education in the last decade can be attributed to each of the pioneering institutions that took the decision to introduce it. The Ministry of Education also played an important role. The ministry has been participating through the National Council for Quality Assurance in Higher Education (CONACES) and the Higher Education Quality Assurance System (*Sistema de Aseguramiento de la Calidad de la Educación Superior*), and by creating a number of programmes to promote and monitor access to ICTs in national educational institutions. These programmes include: *i)* the Conexión Total national educational network, which aims to improve the connectivity of the country's education centres by providing computers and improving Internet access; and *ii)* a system to monitor connectivity in education (*Sistema de Monitoreo de la Conectividad del Sistema Educativo*) and connectivity indicators to evaluate the progress of ICTs nationwide. Also, in 2008 the ministry created regulations for the quality assessment of distance-education systems, and the 2009 ICT Act (Law 1341) defined the general framework for formulating public policies on ICTs.

One of the biggest obstacles for the development of virtual education in Colombia has been its lack of e-readiness. In 1998, barely 1% of the population had Internet access, and in 2000 only 3.4% of the population had a computer (Facundo, 2010). Access to e-learning programmes was therefore limited to parts of the population with the resources to access the Internet. Colombia's technology remains only average for the region, but it has taken major strides in improving its e-readiness since 2010.

Costa Rica

The development of distance education in Costa Rica was accompanied by growth in demand for higher education. In the 1970s, Costa Rica began to see huge rates of population growth. Other factors, such as the growing middle class, better human development indices and a growing industrial sector, sparked growing demand for higher-education options in the country. In the public sector, in addition to the coverage provided by the University of Costa Rica, the government made efforts to develop new opportunities for recent school-leavers by creating the Costa Rica Institute of Technology (*Instituto Tecnológico de Costa Rica*) in 1971 and the National University of Costa Rica (UNA) in 1973. Private education began in 1977 with the Autonomous University of Central America (UACA). These new institutions were insufficient to meet demand, so the idea arose, inspired by the experience of the National University of Distance Education (*Universidad Nacional de Educación a Distancia*) in Spain and community colleges in the United Kingdom, to create a university that would use the new social media (radio and television at the time) in their teaching methods so that students did not need to move location for their education. Costa Rica thus created its own open university, the Universidad Estatal a Distancia (UNED), in 1977. The UNED was one of the first universities in the country to offer distance learning.

The UNED marked a turning point for distance education, which began to gather strength. Three decades later the UNED has become a model trusted by graduates and students in general. The UNED currently has 22 000 ordinary students and nearly 5 000 formal programmes delivered from 34 university centres throughout the country (Castillo and Torres-Díaz, 2010).

The Costa Rica Ministry of Education's e-learning policies are shaped by the principle of non-interference with universities and respect for their autonomy. Nevertheless, the government has taken certain measures that have indirectly affected the incorporation of e-learning. For instance, it introduced information technology (IT) teaching centres into secondary schools as a way of incorporating ICTs into compulsory education to generate demand for the use of ICTs in higher education. ICT use became widespread in public HEIs in 2005 as one of the key components referred to in the 2006-10 *Plan Nacional de Educación Superior Universitaria Estatal*, a government plan for public universities. It is important to note that with the rise of the Internet and the inclusion of ICTs in education systems virtual education has gone from being the least valued form of education to one of the most viable alternatives in education in the new millennium (Castillo and Torres-Díaz, 2010).

Today, the private sector (51 institutions) offers various forms of e-learning with various degrees of ICT use. These initiatives range from setting up virtual classrooms and virtual campuses to support face-to-face education to offering distance courses through virtual media. Moreover, the public sector focuses primarily on blended e-learning programmes that combine face-to-face teaching with virtual education, although it does also offer a range of entirely virtual undergraduate and postgraduate courses. It is important to underline that the UNED "has been the subject of all the country's efforts to reach out to a large segments of secondary-school pupils who aspire to enter higher education through distance learning, but this does not prevent the other three public universities from making major efforts to reach out to other sectors of society through their regional sites" (Castillo and Torres-Díaz, 2010).

In the area of accreditation, the National Council of Rectors (*Consejo Nacional de Rectores*, CONARE) set up the National Accreditation System for Higher Education (*Sistema Nacional de Acreditación de la Educación Superior*) in 1999, which in accordance with Law 8256 became the official quality-accreditation body for the country's university degrees and programmes in 2002. The institutions assessed by this accreditation system include the only four national universities whose conventional education programmes as well as their e-learning programmes have been accredited.

Despite the expansion of its HEI system and the wide range of courses offered, Costa Rica still has many shortcomings in the area of equitable access. Access to public education is 5.3 times higher among the highest income quintile than among the lowest income quintile; in the private sector this figure increases to 7.4 (Castillo and Torres-Díaz, 2010). As in other countries in the region, those with higher incomes complete more years of study, which strengthens the economic divide that already exists.

Dominican Republic

Higher education has expanded fairly quickly in the Dominican Republic from just one university in 1961 to 46 HEIs today. Only three of these are public (6%) and the rest are private (94%). Despite this uneven public-private distribution, 50% of the country's students attend the public Autonomous University of Santo Domingo, the oldest university in the Americas, so there is a relatively even balance between the public and private sector in terms of student numbers (Acosta, 2010). However, although conventional higher

education has grown in the country, the same is not true of "alternative" models such as distance education or e-learning, which has only been around for two decades.

The country's first experience with distance education was the Open University for Adults (UAPA), which opened in 1995. Today, only 5 of the 46 HEIs in the Dominican Republic offer e-learning programmes, with each institution having its own profile, educational model and mission. These five universities represent 11% of the country's HEIs and had 32 311 students, or 6.26% of the national student population, in 2009 (Aybar, 2010). The five universities are: *i)* the Open University for Adults (OUA), set up to provide advanced training to the various modes of distance education; *ii)* the University of the Third Age (UTE); *iii)* the University of the Caribbean (UNICARIBE), which describes itself as a blended-learning and distance-learning institution; *iv)* Félix Adams Experimental University (UNEFA); and *v)* the National Technological University (UNNATEC), focused on distance education programmes in science, technology and innovation.

The experience of incorporating ICTs into the Dominican Republic's education system is still at the early stage of development, and only a handful of institutions have tested using them for pedagogical purposes. The same is true of virtual technologies. While the education system has begun to use these technologies for administration and management, it still lags far behind in their pedagogical use related to designing courses, using digital tools and training students and teachers (Facundo, 2003 cited by Acosta, 2010). Thus, many of the forms of e-learning delivered by the country's HEIs still do not benefit from the pedagogical innovations introduced by the digital media.

Over the last decade, increased demand for education has given rise to new modes of study, increasing the pressure to introduce legislation, regulations, continuous-assessment procedures and quality-control procedures for the different modes of study. Indeed, the Dominican government's education policies have focused heavily on using technologies to support education.

In 2001 it created the National Higher Education, Science and Technology System (*Sistema Nacional de Educación Superior, Ciencia y Tecnología*), which seeks to regulate institutional diversity in education and create new differentiated education scenarios. The system makes it possible to create mechanisms to ensure the quality and relevance of services provided by HEIs and provides with a framework for implementing and consolidating new technological and virtual modes of study. Another example is the Ten-Year Plan for Higher Education 2008-18. It calls for modes of study to be diversified and for the combined use of face-to-face learning and distance learning to be increased in

HEIs, and says that educational institutions need to become more involved with their local communities and the productive sectors. The plan's assessment of the state of education says that there is very little diversification of educational offerings at the local level, too few postgraduate programmes, few links with international HEIs, and little support for those in the regions with less access to education. The assessment also notes that over the past few decades, measures to make virtual education in the Dominican Republic distinct from other modes of study have sought to replace traditional printed material with technologies such as radio, television and the Internet. The growing diversity of educational models has been one of the most significant changes that the Dominican Republic has experienced in higher education in recent years.

Regarding equitable access, higher education's coverage rate is very low (net coverage of around 11%) and e-learning is highly concentrated in private institutions, suggesting that those with fewer resources must have lower access.

Ecuador

In Ecuador, distance education began to emerge in the 1970s. In higher education it dates back to 1976, when the Technical University of Loja (UTPL) created the "open and distance method" (*Modalidad Abierta y a Distancia*) for a large segment of teachers around the country who had been unable to attend university but who needed to improve their pedagogical and other skills. Nine years later, the Escuela Superior Politécnica del Ejército (ESPE) began providing distance education independently in 1985. In 1995, Chimborazo National University (UNACH) began using a distance-education model with blended-learning components. And in 1997 Universidad Tecnológica América (UNITA) set up a virtual campus, from which it delivers five degree programmes. Similar forms of blended virtual course programmes are available at Santiago de Guayaquil Catholic University (UCSG), Pontificia Universidad Javeriana, Universidad de Especialidades Espíritu Santo (UEES) and Universidad Tecnológica Equinoccial (UTE), among other institutions.

In general, e-learning has been popular among a sector of the student population, who prefer it because it is less demanding in terms of attending lectures and following timetables. Today, most universities offer various forms of e-learning programmes. In 2008, for instance, as many as 14 HEIs had been delivering e-learning programmes since they began providing academic courses. E-learning was also offered by many foreign-based institutions such as the Latin American Social Science Faculty (FLACSO) (Guamán et al., 2010).

There are e-learning programmes for various levels of education, and these programmes have varying levels of development depending on the specific e-learning method used. Undergraduate programmes comprise those that are mainly face-to-face (56.5% of those currently being delivered and 25% of those being designed), blended programmes (41% and 50%) and entirely virtual programmes (2.3% and 25%). Diploma programmes comprise those that are mainly face-to-face (49.2% and 34.6%), blended programmes (49.2% and 45.8%) and entirely virtual programmes (1.5% and 19.6%). At the postgraduate level, the distribution is the following: for mainly face-to-face (54.3% and 33.3%), for blended programmes (40.8% and 56.6%) and for entirely virtual modalities (0.5% and 8%). Finally, for life-long education, the distribution is: mainly face-to-face (45.1% and 41.6%), blended programmes (50.9% and 33.3%), and entirely virtual (3.9% and 25%) (Guamán et al., 2010). These data illustrate that e-learning is still in its infancy, but the percentages for programmes still being designed provide hope for its future development.

The National Council for Higher Education (*Consejo Nacional de Educación Superior*) is currently developing a policy to introduce new regulation and accreditation for virtual and distance education. The quality of the programmes will be assessed based on their functions, scope, features, standards and indicators. However, the assessment model was put together with traditional, face-to-face education programmes in mind, so it still needs refining to match the specific features of e-learning.

There is no information available regarding how the introduction of e-learning in Ecuador has taken into account sectors of the population that have traditionally been excluded from higher education. However, it is clear that the main problem affecting the poorest sectors of the population in Ecuador is their lack of connectivity. The Ecuadorian government is seeking to increase the percentage of people connected to the Internet, reduce connection costs, and provide schools and HEIs with the necessary infrastructure to go on line.

Guatemala

Education in Guatemala has made very little progress in diversifying its educational methods. There are only three postgraduate e-learning experiences in the country.

The first experience is the University of San Carlos of Guatemala (USAC), which uses e-learning to free up overcrowded classrooms or to provide a solution where classrooms are not sufficiently equipped to cope with teaching so many students at the same time (Tobar, 2010).

The other two are the only two Guatemalan universities authorised to deliver distance education. The first is the Open Education Institute (IDEA) at Galileo University, which delivers six undergraduate degrees in Technology and Management using e-learning. The second is the USAC's master's degree in Environment-Oriented Education, which in 2007 decided to enrich the learning experience by using virtual media, especially the Internet (Tobar, 2010).

Because e-learning is not very developed in the country, no regulations have yet been introduced for this mode of learning, let alone any policies to accelerate its implementation.

It is notable that Guatemala has one of the youngest populations on the continent, but one of the lowest rates of enrolment in higher education. This scenario gives e-learning great potential to improve education in Guatemala and increase access and coverage.

Honduras

Inspired by the UK's Open University model, the National Autonomous University of Honduras (UNAH) set up a Distance Education University System (*Sistema Universitario de Educación a Distancia*, SUED) in 1981, partly in response to entrance exams that restricted access to face-to-face higher education. The main reason that the UNAH was formed was to provide access to higher education in remote areas where the university did not have the capacity to plant regional sites, and in areas where the geography and socio-economic circumstances made it difficult for the population to travel to larger towns and cities for face-to-face learning.

Between 1986 and 1988, four sites were opened offering bachelor's degrees in Education Studies and Nursing. The distance education system continued to increase its coverage and hire more teachers, but this growth was not accompanied by sufficient quality control and pedagogical skills were not updated. The university's failure to update its methodologies allowed the quality of teaching in the e-learning system to decline, opening up a gulf

in the level of assessment of educational standards compared to the level in conventional education.

In 1991, the University Council of the UNAH decided to tackle these problems and intended to conduct an assessment of the SUED before restructuring it. However, the assessment never took place, despite enrolment having been suspended during the first part of 1992 to make way for it. Even though the quality of the SUED's teaching model is poor, the UNAH's e-learning programmes have already grown considerably in Honduras, representing 9.1% of enrolments in 2007. The delay in the restructuring of the SUED has therefore affected thousands of students, resulting in less valuable qualifications (Calderón and Rama, 2010).

In 2005, the UNAH set up a Transition Commission to initiate a university reform. The Commission decided that it needed a General Plan for Comprehensive Reform of the SUED, where exchange of research knowledge, especially with Brazil, would be of paramount importance. The proposal sought to modernise and reorganise the system, ensuring improved quality of service through a new model. The reform also sought to harmonise face-to-face learning and e-learning in a number of areas, including profiles, objectives and weight as well as student-selection processes, so that the only real difference between the two would be the teaching-learning method used and the duration of the courses. Specific initiatives were also considered for e-learning programmes, such as orientation courses and study methods. Although the restructuring of the SUED was completed in 2007, a series of institutional constraints have affected the implementation of the higher-education reform in Honduras, including labour disputes and academic disputes, preventing many of the proposed reforms from being implemented.

Although progress has been made in increasing access to higher education, many people still remain without access. Unequal access to education mainly affects the poorest sectors of society, who do not have enough time to pursue studies because of the daily jobs they have to do for their upkeep (Brunner and Ferrada, 2011). Moreover, as suggested by the connectivity indicators, access to the resources needed to enrol in virtual education is restricted, so the poorer and more remote villages are still excluded.

Mexico

Today, Mexico has a wide range of e-learning offerings covering around 7% of total demand for higher education. In absolute terms this amounts to 200 000 students taking various types of programmes, but especially advanced technical degrees and bachelor's degrees.

Since its inception, distance education has developed along the same lines as the reforms made to the higher-education system. Between 1989 and 1994, the National Education Modernisation Plan (*Plan Nacional para la Modernización Educativa*) set the basic guidelines to adapt the system to the requirements of the North American Free Trade Agreement, which demanded faster modernisation of higher education and a reconsideration of how a career should be pursued in a labour market marked by growing trade liberalisation and greater competition. Against this backdrop, the Secretariat of Public Education, supported by other institutions such as Monterrey Institute of Technology (ITESM), the University of Guadalajara (UDG) and the National Autonomous University of Mexico (UNAM), launched a series of projects to build telecommunications infrastructure so that distance-education initiatives could be developed (Amador, 2010).

Between 1995 and 2000, the Educational Development Programme (*Programa de Desarrollo Educativo*) focused on strengthening higher education through quality assurance, equitable access and diversification and consolidation of institutions, programmes and skilled academic staff. The programme established that the various modes of education made available to the public needed regulation in a way that would take into account the specificities of the model. It therefore created the Project for the Development of Open and Distance Education so that it could properly manage both modes of education. Another important measure driven by the Educational Development Programme was to increase the coverage of e-learning programmes through the Educational Television Network (EDUSAT) and the Internet. With the support of UNAM and the National Polytechnic Institute (IPN), the programme also implemented the National Network for Educational Videoconferencing (*Red Nacional de Videoconferencia para la Educación*), which to this day continues to provide the resources to produce e-learning programmes; the University Internet Development Corporation (*Corporación Universitaria para el Desarrollo de Internet*), a virtual platform that develops e-learning applications and projects; and the National Network for Distance Higher Education (*Red Nacional de Educación Superior a Distancia*) (Amador, 2010).

Between 2001 and 2006, the National Education Programme proposed a number of reforms in higher education, including a Master Plan for Open and Distance Higher Education dealing with basic issues such as implementing technical-support networks and academic training for distance teaching. This stage marked the consolidation of regulations and standards for the country's main distance education institutions (Amador, 2010).

Finally, between 2007 and 2012 the Sectoral Education Programme (*Programa Sectorial de Educación*) served to boost the open, distance education system that had been developed over the previous five years. The programme's guidelines led to the creation of the Common Area for Distance Higher Education. These 39 institutions that form the network work together to develop projects, academic programmes, and exchanges of ideas and knowledge (Amador, 2010).

One of the limitations of the e-learning model is that access to higher education among the poorest sectors of society remains low. For every six students from the highest income decile there is only one from the lowest decile. Similarly, although in many countries e-learning is used to make higher education available to rural and/or remote areas, such areas in Mexico have low penetration rates for the Internet and other technologies.

Panama

Distance education was first introduced in Panama in 1986 by the Inter-American Distance Education University of Panama (UNIEDPA), an institution whose teaching model emphasises self-learning (students organise their time and the pace at which they study), broad coverage (a teaching model designed for those who are unable to pursue conventional courses), and interactive education (using a variety of resources, material and technologies to facilitate self-learning). Three different methods are used in this model: further education (conventional studies), distance education and stand-alone courses (self-managed studies). The pioneering experience of the UNIEDPA allows us to assess the status of e-learning in Panama. This assessment suggests that e-learning is only possible through co-operation with domestic and foreign HEIs and other public bodies whose work involves education (de Escobar, 2010). Another noteworthy experience in the development of e-learning was the launch of the Open and Distance University of Panama (UNADP) in 1996.

The private institution offers various modes of e-learning for all its technical degrees, bachelor's degrees, specialisations and continuing education.

As the number of HEIs has grown in Panama, so has the number of universities offering e-learning programmes. The official (public) universities offering e-learning include the Technological University of Panama (UTP) and the University of Panama (UP). In addition to its ordinary courses and distance courses, the UTP offers a series of lifelong learning courses in the use of ICTs and virtual media. It also possesses IT tools such as e-mail, virtual campuses, videoconferencing, Moodle course-design platforms and an educational digital television programme.

The growth of the virtual-education model makes it necessary to establish official guarantees on the credibility and recognition of this form of education and to maintain certain standards in the quality of education delivered. Such initiatives have tended to come from organisations outside the Panamanian education system. The latest accreditation regulations passed by the Panamanian Ministry of Education in July 2006 created the National Assessment and Accreditation System for Quality Improvement in University Higher Education, but this system does have criteria specifically designed to assess the unique features of e-learning. For these reasons, most universities with e-learning programmes use a quality-assessment model designed by external organisations such as the Association of Private Universities in Central America (AUPRICA), the Technical University of Loja (UTPL), the Central American Higher University Council (CSUCA) and the Ibero-American Network for Accreditation of the Quality of Higher Education (RIACES).

Overall Panama has very few policies to promote e-learning, which presents a problem to most institutions that offer an e-learning programme, whether blended or entirely virtual. Indeed, the UNADP and the UNIEDPA are the only universities that have legal accreditation for their e-learning programmes. However, with more and more e-learning initiatives being introduced, this form of education could have a bright future if the programmes are well managed, with public policies to support them.

Although improving equity of access is an explicit commitment of the higher-education system, specific domestic policies are still needed in this area, as is an appropriate regulatory framework.

Peru

Unlike other countries in the region, Peru does not have a long tradition of distance education, nor does it have a university specifically created to offer distance courses. The universities that currently offer e-learning programmes started out providing face-to-face teaching. Only later, in response to growing demand for higher education, did they take measures to introduce e-learning in order to attract new segments of the student market.

Alongside this national trend of increased demand for education, the expansion of ICTs and competition among HEIs to incorporate ICTs into their education systems has also been a factor that has encouraged HEIs to set up virtual education platforms (webmail services, virtual campuses, intranets and online resources) to complement face-to-face educational activities and more generally to introduce e-learning.

Peru has 75 officially recognised universities, 31 public and 44 private. Of the 31 public universities, only 2 have e-learning programmes, while another 12 have at least some kind of virtual portal. Of the 44 private universities, however, 10 have e-learning programmes, while another 15 use virtual portals.

Although the introduction of virtual platforms has become widespread among Peruvian HEIs, there are still very few e-learning programmes in Peruvian universities, and those that do exist have not been running for many years. There are two initiatives that are of particular interest.

The first is the virtual education programmes at the Pontifical Catholic University of Peru (PUCP) introduced by the Faculty of Education and its Centre for Educational Research and Services (*Centro de Investigaciones y Servicios Educativos*), which were upgraded in 2001 to include e-learning tools. Today, the *PUCP Virtual* platform is responsible for "virtualising" the master's degrees, diplomas and other postgraduate programmes at the university. It also offers the INFOPUCP Courses, a virtual educational programme comprising short courses, refresher courses and specialisation diplomas. The university also provides students with a wide range of Internet services, such as audio and video upload and download platforms, blogs, chat facilities, forums, wikis, e-mail, a virtual campus, an intranet, live streaming, and virtual repositories of journals, theses and documents.

The second is the Open University System (*Sistema de Universidad Abierta*) created in 2004 by Uladech Católica (*Universidad Católica Los Ángeles de Chimbote*). It offers blended-learning degrees in Education, Law, Accounting, Administration and Tourism Business Administration. After completely restructuring its

courses and syllabuses and providing the necessary training to its academic and administrative staff, the university introduced blended e-learning as its main teaching method for undergraduate courses in 2007. Two years earlier the university had already introduced virtual tutorials through its virtual campus with a Virtual Education System for the Systems Engineering, Civil Engineering and Psychology degrees. In 2009 the University had 27 046 students, of which 21 521 (79.6%) took blended-learning courses, 4 096 (15.1%) were part of the Open University System and 1 429 (5.1%) were part of the Virtual Education System.

Although the development of such programmes is still in its infancy in Peru, the number of students opting for these modes of study and the number of HEIs willing to introduce them is constantly increasing, with demand for higher education continuing to grow steadily year on year (Brunner and Ferrada, 2011).

Although enrolment in higher education is currently growing rapidly, e-learning in Peru is heavily limited by the issue of prestige, with the education system showing little interest in providing quality standards and accreditation for these kinds of programmes. According to Camones and Valdivieso (2010), "the idea persists that distance education is of low quality as a result of its delayed regulation as a formal mode of study. Universities that implement these systems do not generally have specialists in distance education, and among teachers there is a silent resistance to acquiring training and using these strategies in the subjects they teach. Some institutions, meanwhile, lack a distance-education model to respond to the academic needs of students as a result of their situation and the type of career. Distance education still has a high drop-out rate because many students do not adopt the right mindset for self-learning, the study material is inadequate and the tutorials system is inefficient" (Camones and Valdivieso, 2010).

Certification platforms in Peru were incorporated into legislation in 2009 through the Quality Model for the Accreditation of University Careers, but the legislation only deals with setting the minimum framework for quality assessment. Otherwise, there are no major government policies to promote the development and incorporation of e-learning.

In terms of equity, e-learning was developed in such a way as to attract a greater share of the growing demand for higher education, so greater emphasis was placed on attracting students with a high purchasing power. Consequently, for poor and/or traditionally excluded sectors of the population, e-learning in higher education has not provided easier access to advanced training, and its programmes do not respond to specific training needs.

Uruguay

Today's university system in Uruguay is dominated by the University of the Republic (Udelar), which provides open, unlimited access to all Uruguayans and has 70% of human resources in research and innovation. There are also 4 private universities and 11 university institutes. In these institutions, initiatives to develop e-learning using ICTs only began fairly recently. By 2002 there were 12 ordinary e-learning programmes (in addition to various short programmes and specific courses) out of a total of 56 courses developed throughout the history of distance learning in Uruguay. There were three institutions that began to develop e-learning: ORT University, which introduced distance education in 1996 with 38 programmes; Udelar, which introduced distance education in 1998 with 12 programmes; and the Catholic University of Uruguay (UCU), which introduced distance education in 2001 with 3 programmes. Because the predominant use of new ICTs was taken into account when these programmes were launched, they were developed on the Internet to be delivered through blended e-learning or entirely virtual e-learning (Chiancone and Martinez, 2010).

Today, e-learning is available at more institutions and for more programmes than ever before. The institutions fall into four groups:

1. Institutions with blended e-learning programmes. These include the National Public Education Administration (*Administración Nacional de Educación Pública*, ANEP), which is responsible for training media teachers; ORT University, which offers a diploma and master's degree in Education; the UCU, which provides courses for academic staff who teach the postgraduate courses in University Teaching and Education; the Inter-American Vocational Training Research and Documentation Centre (IICA), which trains e-learning tutors; and the Inter-American Centre for Knowledge Development in Vocational Training (Cinterfor), which carries out distance activities for institutional strengthening.

2. Institutions with blended e-learning programmes *and* entirely virtual e-learning programmes. The *Instituto Plan Agropecuario* (Agricultural and Fisheries Plan Institute), for example, offers short courses in livestock farming, while the Technological Laboratory of Uruguay (LATU) offers individual courses and course series on a range of subjects through both blended learning and entirely virtual learning.

3. Institutions with entirely virtual e-learning programmes. These include the "Uruguay Agroalimentario al Mundo" (Uruguayan Agrifood for the World) distance-education platform, a partnership between public and private HEIs that runs courses for the Uruguayan agrifood industry, and "FLACSO – Proyecto Uruguay", which runs two postgraduate courses and two diplomas related to education.

4. Institutions working to create the conditions for e-learning. One such institution is Udelar, which in 2009 began a project to make the pedagogical use of ICTs widespread in the university. It has already implemented its own virtual-education environment in Moodle and has trained 203 teachers in the educational use of ICTs. Another is AGEISC, which develops projects to implement hardware and software infrastructure to increase the ICT skills of institutions and people. AGEISC's work includes implementing Massachusetts Institute of Technology's "Plan Ceibal", which greatly increased Internet access among Uruguayan schoolchildren and their families. The ANEP's central projects also seek to create the conditions for e-learning. The ANEP is improving the URUGUAYEDUCA website and its own connectivity and is working to implement an administrative management software package.

Uruguay lacked a regulatory framework for e-learning until late 2008, when an Education Bill (*Ley General de Educación*) was proposed recognising the validity of all forms of e-learning and setting basic criteria for its regulation. Apart from the need for a regulatory framework and a long-term development policy, one of the main obstacles to the development of virtual education could be a shortage of human and material resources, making it difficult to provide the necessary infrastructure and skilled staff for it to expand significantly.

Access to higher education is widespread in Uruguay, with e-learning facilitating the enrolment of sectors of the population with special needs, such as those already integrated into the labour market or those living in largely inaccessible places.

Venezuela

Distance education's history in Venezuela goes back to the 1960s, when the National Institute for Educational Co-operation (*Instituto Nacional de Cooperación Educativa*) and the Institute for the Professional Development of Teachers (*Instituto de Mejoramiento Profesional del Magisterio*, IMPM) began to develop correspondence courses. In the 1970s the National Open University (UNA) was founded with the mission of training professionals in a range of disciplines to meet demand for services in the country, and the institution set about developing distance courses. Subsequently, the Central University of Venezuela began to offer what it called Supervised University Studies (*Estudios Universitarios Supervisados*), which essentially formed the foundation for the development of distance education in Venezuela. This was joined by other institutions such as the IMPM, Cecilio Acosta Catholic University and the University of Zulia (LUZ). In the 1990s a process began to incorporate ICTs into the teaching-learning processes, and institutions began to emerge that established new innovation models in applying technology tools to teaching, but without official guidelines regulating how they were implemented in developed. Since the turn of the millennium there has been an overall trend among HEIs to incorporate the use of ICTs into their institutional model. In 2007, this gave rise to the National Distance Higher Education Project (*Proyecto Nacional de Educación Superior a Distancia*, PNESD) designed by the OPSU university planning agency (*Oficina de Planificación del Sector Universitario*) to systematise and regulate the development of distance education and guarantee its quality so it can develop and coexist with face-to-face learning in undergraduate and postgraduate programmes.

Over time, other HEIs have sought to increase their use of e-learning and incorporate ICTs. There are basically two kinds of institutions that provide this mode of study in Venezuela: *i)* the UNA, which claims it is the only university offering entirely virtual e-learning; and *ii)* a number of HEIs that have gradually incorporated ICTs and e-learning modes of study into their face-to-face programmes and are now offering blended-learning courses. Venezuela currently has 48 registered universities, of which 25 are national universities (10 autonomous and 15 state-dependent). All but 5 of the national universities offer blended e-learning programmes. The remaining 23 universities are private, of which 13 also offer e-learning. E-learning is therefore offered by 33 universities, or 69% (Dorrego, 2010).

The proposed national distance-education standards drafted in 2009 (*Proyecto de Normativa Nacional de Educación a Distancia*), currently pending

approval, established guidelines for the development of e-learning in HEIs based on three criteria:

- academic: related to following the pedagogical principles supported by the Distance Higher Education System (*Sistema de Educación Superior a Distancia*);
- technological: related to creating the scenarios and technological infrastructure (hardware and software) for smoothly incorporating ICTs into the HEIs;
- management: related to establishing actions to co-ordinate, plan and assess the processes involved in introducing and developing e-learning in HEIs (García, Rodríguez de Ornés and Vargas, 2010).

The National Distance Higher Education Project specifies that any distance-learning initiative must include certain measures to guarantee equitable access. Specifically, it refers to fair admission rules and states that initiatives must be taken to where they will be most beneficial.

There are basically two distinct cases in which distance education has been introduced in Venezuela:

1. The Central University of Venezuela (UCV) is one of the pioneers of distance education. Its distance education has evolved through three stages. The first began in 1975, when instructional material was used and students attended periodic face-to-face tutorials. This form of distance education still holds great prestige. The second began when the university created the Distance Education Committee in 2001 to develop the Distance Education Programme. The third began when the aforementioned programme had been completed and it was reoriented to form the Central University of Venezuela Distance Education System (SEDUCV), which was launched in October 2007 and charged with re-engineering the distance-education programmes used by the university since its inception.

   The strengths of the e-learning programmes offered by the UCV are as follows:

   - Their creation and organisational structure were approved by the University Council.
   - They have introduced new, student-focused educational paradigms and new pedagogical models that assign new roles to teachers as facilitators.

- They provide new opportunities for studying.
- They have brought about the upgrading of the institution's technology.

However, they also have a series of limitations: the shortage of financial resources and available budgetary allocations, the need for training material for academic staff, technology infrastructure constraints, constraints on hiring staff, and the inability to issue university qualifications for e-learning. We can therefore conclude that virtual learning at the UCV is still in its infancy, and major challenges lie ahead for the university's programmes.

2. Rafael Belloso Chacín University (URBE) set up the Distance Studies Bureau (*Dirección de Estudios a Distancia*) in 2002 to deliver virtual e-learning programmes, thus providing access to blended courses and diplomas and communication with teachers via the Internet. The use of "virtual mobility" as a replacement for physical mobility reduces distances and costs and enables access to education without time or geographical constraints. Students can also organise their studies in a more flexible manner, among other benefits. To guarantee that these virtual e-learning programmes function, the URBE provides content that it has designed specifically for its students and offers a dynamic graphical user interface, online support from course tutors via a virtual platform, and assessments of participants by academic periods. The combination of all these facilities has helped make virtual learning at URBE a success as an alternative and/or additional medium to conventional learning.

Notes

1. This section has been compiled based on information taken from secondary sources.
2. As has been discussed throughout this report, the terms "e-learning" and "virtual education" are used interchangeably.

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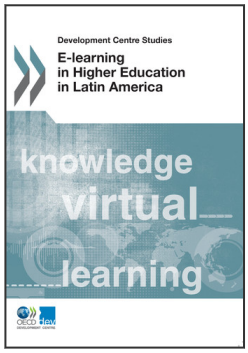

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