

## Chapter 1

### E-learning provision and enrolments

This chapter assesses the magnitude and importance of e-learning in terms of online presence of programmes and online learning (enrolments). It clearly shows the diversity of e-learning provision across tertiary education institutions, in terms of both current activities and targets. In most campus-based institutions, the growth of e-learning to date has not challenged the centrality of the face-to-face classroom setting. Like distance online learning in general, cross-border e-learning has generally failed to emerge as a significant market. The majority of e-learning has taken place on-campus, with the necessarily more complex possibilities of remote international delivery typically left to small-scale, department-led experiments.

What kind of online presence does e-learning involve? How many and what types of students chose to study through e-learning? Is it more popular in certain disciplines than others, to study across borders rather than at home, etc.? This chapter assesses the magnitude of e-learning in terms of online presence of programmes and online learning (enrolments). It first documents the type and scale of online presence of programmes at the OECD/CERI case study institutions (1.1) and, more widely, in the Commonwealth countries covered by the Observatory survey (1.2). This clearly shows the diversity of e-learning provision across tertiary education institutions, in terms of both current activities and targets. Both surveys demonstrate that full online provision will remain very much a minority form in the short to medium term. In most campus-based institutions, the growth of e-learning to date has not challenged the centrality of the face-to-face classroom setting. The inquiry then turns to students and enrolments. It tries to identify the numbers of students online (1.3), the major disciplines in which students use e-learning (1.4) as well as the level and background of e-learners (1.5). The study then tries to evaluate the importance of cross-border delivery of e-learning, *i.e.* programmes taken by students in a country other than where the institution's central campus is located (1.6-1.7).

#### 1.1. Type/scale of online presence (Question 1.6)

What is the type and scale of online presence across the case study institutions? The 19 tertiary education institutions participating in the survey

had to estimate the proportion of programmes/courses with different kinds of online presence – three years ago, at present and to predict the situation three years into the future. The different kinds of online presence were defined as follows:

- None or trivial online presence.
- Web supplemented (*e.g.* course outline and lecture notes online, use of email, links to external online resources).
- Web dependent: students are required to use the Internet for key “active” elements of the programme – *e.g.* online discussions, assessment, online project/collaborative work – but without significant reduction in classroom time.
- Mixed mode: students are required to participate in online activities, *e.g.* online discussions, assessment, online project/collaborative work, as part of course work, which *replace* part of face-to-face teaching/learning. Significant campus attendance remains.
- Fully online.

The typology was an attempt to draw out the extent to which e-learning reduced rather than simply supplemented time spent in the physical classroom. This typology assumes both a campus-based institution, and a conception of e-learning tied to the Internet or other online network. The survey offered respondents the opportunity to respond in an alternate fashion (*e.g.* from the perspective of a distance institution) and to report forms of e-learning that did not fit neatly into the typology.

All responding institutions pointed to plans to increase online delivery (or at least maintain a current high level of activity). Only one institution may reasonably be described as teaching fully online at present, and another institution aims to attain 100% online delivery within three years. A third institution already had the vast majority of programmes *available* online as an alternative to face-to-face delivery, and predicted that this will apply to all programmes within three years. However, face-to-face options will continue (with increasingly online characteristics for all students). One university was undertaking leading-edge research and project-based activity in this area, but the majority of programmes were currently “Web supplemented” or had no/trivial online presence (but with a clear trend for greater use of online delivery across the board). Seven campus-based universities had rapidly expanded on-campus use of online learning in recent years (*e.g.* about two-thirds of provision “web-supplemented” or above), with a steady broadening and deepening of the online presence. Four distance institutions were similarly moving online to a significant extent. Of

the remaining four institutions, two were committed to rapid online development from a low base over the next three years, and two expected such development to take place more slowly.

All institutions attempted to respond to Question 1.6 but very few had comparable statistics to hand. In some cases, this was partly due to tensions between local categories and those employed by the survey (*e.g.* one institution makes extensive use of satellite-delivered learning; another has created parallel fully online and online supplemented/dependent/mixed mode face-to-face programmes), but more often the difficulty was lack of central collation of this sort of information. One respondent described the figures provided as “blind guesses”. That said all respondents were content to offer estimates. Responses by mode are set out in turn, and then overall trends are discussed.<sup>1</sup>

### *Categories of online presence*

#### *Fully online*

Taking fully online programmes, only two sample institutions (Open University Catalunya and the University of Maryland University College) had a majority of provision in this mode in 2000/01 (one offering this as an alternative to parallel face-to-face provision), seven, 10% of programmes or less, and ten, zero. For 2003/04, three reported a majority of programmes fully online (Open University Catalunya, University of Maryland University College, Virtual University of Tec de Monterrey), one reported one third (Open Polytechnic New Zealand), ten 10% or less, and five zero. The prediction for 2006/07 time is three at or close to 100% (as above), one at 60% (Open Polytechnic New Zealand), one at up to 30% and one at 20%, 10 at 10% or less, and three at zero.

#### *Mixed mode*

Taking mixed mode in 2000/01, no institutions pointed to majority use; one reported 30% (UK Open University) and one 20% (University of South Australia), five at 10% or less and nine at zero. It should be noted, as above, that the Open University Catalunya claimed fully online provision, and the University of Maryland University College claimed a large majority of parallel online and face-to-face programmes (both effectively ruling out mixed mode). The final institution (Virtual University of Tec de Monterrey) pointed to majority dependence on satellite delivery in 2000/01 (it proved

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1. Due to category problems at two institutions (and “stability” over time at the Open University Catalunya), responses under “Web supplemented/dependent/mixed mode” add up to 16 (rather than 19).

difficult to fit this into the typology). These caveats apply across the time span requested by the survey. In 2003/04, again no institution claimed majority adoption, but one cited 38% (UK Open University) and another 35% (University of South Australia). A third institution (University of Paris Nanterre) was at 15%; ten at 10% or less and three at zero. The prediction for 2006/07 was for two universities (University of South Australia and the UK Open University) to have attained majority mixed mode programmes (70% and 55%), five between 15-20%, six at 5-10% and two at zero. One institution's response was unclear.

### *Web dependent*

Taking Web dependent provision (again removing the two majority online institutions, and the satellite dependent institution, mentioned above), the situation in 2000/01 suggested no institutions with a majority of programmes in this mode: three cited 20-30% (FernUniversität Hagen, University of South Australia, University of Paris Nanterre), one 13% (Monash University), five 10% or less, and seven at zero. In 2003/04, five pointed to between 20-40% of programmes in this mode (FernUniversität Hagen, University of British Columbia, UCLA Extension, University of South Australia, University of Paris Nanterre), seven 10% or less, and three zero. One institution's response was unclear. In 2006/07, one institution (FernUniversität Hagen) predicted there would be 60% of programmes in this mode, two between 40-49% (Monash University, University of British Columbia), three at 20-30%, one at 14%, five at 10% or less and three at zero. One offered a range of 5-15%.

### *Web supplemented*

Taking Web supplemented provision in 2000/01 (again removing the two majority online institutions, and the satellite dependent institution, mentioned above), one institution reported 70% (Open Polytechnic New Zealand) and two, 50% of programmes in this mode (University of Irvine, California, University of South Australia). Three cited between 30-40%, and one cited 10-30%. One pointed to 10-15%, one at 13% and seven at 10% or less. None reported zero. In 2003/04, one institution cited 70-80% (University of Sao Paulo), four cited 50-60% (FernUniversität Hagen, Open Polytechnic New Zealand, UK Open University, University of California, Irvine), three 35-45%, one 31%, three 20%, one 15%, and three 10% or less. Again, none reported zero. In 2006/07, the prediction was for one institution at 90-100% (University of British Columbia), four between 50-65% (Asian Institute of Technology, Aoyama Gakuin University, Carnegie Mellon University, University of Sao Paulo), five at 30-40%, four at 15-20%, one at 10% and one at zero.

### *None/trivial presence*

Finally, taking “none/trivial” online presence (again removing the two majority online institutions, and the satellite dependent institution, mentioned above), eight institutions reported at least 70% of programmes in 2000/01, and a further five between 48-63%. Two cited between 25-30% and one 10%. In 2003/04, the number of institutions reporting 70% or more of programmes in this mode had fallen to four (Asian Institute of Technology, Kyoto University, Multimedia Kontor Hamburg, Zurich University), with one at 65% and two between 40-50%. Two were between 34-38%, two at 20-30%, three at 9-10% and one at zero. The response of one institution was unclear. The prediction for 2006/07 was only two institutions at 70% plus (Multimedia Kontor Hamburg, Zurich University), one at 54% (Kyoto University), four 20-30%, three at 5-15%, one at 0-10% and five at zero.

### *Data summary*

The following is a weighted summary of the data. Composite figures were obtained by weighting the institutional response under each mode, using a hierarchy of 1-5, with “fully online” as 5. This allows a clearer appreciation of trends over time, relative speed of adoption, and comparisons between institutions. The maximum score is 500 (*i.e.* all programmes “fully online”) and the minimum is 100 (*i.e.* all programmes with none/trivial online presence). The weighting is not designed to be normative, but merely to reveal past, present and future patterns and trends (see Table 1.1).

It is clear that for the majority of sample institutions, fully online programmes will remain very much a minority (if gradually increasing) activity in the short-to-medium term. This is certainly the case for campus-based universities, which predominately predicted the continuation of a vigorous campus-based face-to-face teaching and learning environment. No institution with a significant campus-based element predicted fully online provision greater than 10% of total programmes by 2006/07. There was no pattern in terms of more and less research-intensive campus-based institutions. The institutions that predicted to embrace fully online programmes to the greatest extent were all virtual/distance learning-only institutions or branches (although not all such institutions pointed in this direction to the same extent).

**Table 1.1. Weighted “online presence” at the sample institutions**

Institution <sup>1,2</sup>	Type	2000/01	% change	2003/04	% change	2006/07
Multimedia Kontor Hamburg	C	102	7%	109	28%	140
Zurich University	C	102	20%	122.2	26%	154
Kyoto University	C	110	26%	139	22%	169
University of Sao Paulo	C	120	46%	175	11%	195
Carnegie Mellon University	C	118	44%	169.5	16%	197
Aoyama Gakuin University	C	135	15%	155	29%	200
Asian Institute of Technology	C	104	10%	114	78%	203
University of California, Irvine	C	150	42%	213	29%	275
University of Paris Nanterre	C	200	19%	238	18%	280
Monash University	C	171.5	21%	207	38%	285
University of British Columbia	C	154	40%	215	41%	303
FernUniversität Hagen	D	190	32%	250	28%	320
UK Open University	D	230	20%	276	18%	325
UCLA Extension	D	136	51%	206	71%	352.5
Open Polytechnic New Zealand	D	190	47%	280	36%	380
University of South Australia	M	250	30%	325	20%	390
Virtual University of Tec de Monterrey <sup>3</sup>	D	50	550%	325	54%	500
Open University Catalunya	D	500	0%	500	0%	500

*Note:* C = Campus based; D = Distance learning; M = mixed.

1. Ordered by 2006/07 score.

2. The University of Maryland University College is excluded from this table. The institution is moving to a model where all face-to-face programmes have parallel online versions. The respondent noted that the survey categories did not adequately represent this situation, and declined to complete the question. However, it is clear that the institution is among the “most” online in the sample.

3. The weighted scores for the Virtual University Tec de Monterrey for 2000/01 and 2003/04 are artificially low due to uncertainty about the nature of satellite delivery.

*Source:* OECD.

Given the diversity of the sample, there was no simple trend in respect of Web supplemented/dependent/mixed mode provision. Every institution reported at least some programmes in these categories, and all pointed to a significant reduction of programmes in the “none/trivial” category over time. Thirteen institutions predicted that in three years time, less than 10% of programmes would be in this category (eight saying zero). No institution reported present majority adoption of either mixed mode or Web dependent provision, none predicted majority adoption of the latter by 2006/07, and only one majority provision of the former over this timescale.

Table 1.1 also indicates extent of development over time, with some institutions moving much faster than others. Excluding the Virtual University of Tec de Monterrey, six institutions reported growth between 2000/01 and 2003/04 at over 40% (Carnegie Mellon University, Open Polytechnic New Zealand, University of British Columbia, University of California, Irvine, UCLA Extension and the University of Sao Paulo). Predicted growth up to 2006/07 was very high at two institutions (over 70% – Asian Institute of Technology, UCLA Extension), with many others over 20% (four less than 20%). There was an even split between institutions citing faster, slower and similar patterns of growth between 2000/01 and 2003/04 and 2003/04 and 2006/07.

It is important to emphasise that the index concern extent of online presence as such, not how that presence might become more sophisticated over time. It is a measure of quantity not quality. Thus the Open University Catalunya’s stability at “500” over time should not obscure the fact that the institution has sought to develop the quality/sophistication of its online presence over this period, and plans to continue to do so.

## **1.2. Online presence and programme delivery – results from the Observatory survey**

The Observatory survey also asked respondents to estimate the proportion of current programmes delivered and the different kinds on online presence. It did not ask respondents to provide data on the situation three years ago. A related question offers a sense of predicted circumstances in three years time. The Observatory category of “modest” corresponds to the OECD/CERI “Web supplemented” category; “significant” to “Web dependent” and “Web dependent” to “mixed mode”. Table 1.2 summarises the results.

In view of the larger number of respondents to the Observatory survey, it was helpful to average returns by level of online presence. In line with the OECD/CERI findings, the Observatory respondents on average exhibited a majority of provision in the “none/trivial” and “modest” categories, and few respondents reported significant activity as “Web dependent” or “wholly online”.

**Table 1.2. What estimated proportion (%) of current programmes/courses offered by your institution have the following kinds of online component?**

	% none or trivial	% modest <sup>1</sup>	% significant <sup>2</sup>	% Web dependent <sup>3</sup>	% conducted online <sup>4</sup>
<b>2004</b>					
UK	41	34.8	15.5	5.8	2.8
Canada	43.4	32	14.5	3.7	6.4
Australia	36.5	29	18.4	11.7	4.5
South Africa	52.5	32.5	7.4	4.7	2.9
Asia Pacific	33.4	31.8	21.8	9.5	3.5
LI/LMI	59.3	28.8	6.4	3.3	2.4
Returning <sup>5</sup>	39.3	35.1	14.1	8.3	3.2
<b>TOTAL</b>	<b>43.1</b>	<b>32.5</b>	<b>15.1</b>	<b>5.6</b>	<b>3.7</b>
<b>2002</b>					
Developing	83.0	10.5	3.6	N/A <sup>6</sup>	2.7
Other developed	44.7	34.9	14.4	N/A	5.7
UK	36.6	39.4	20.7	N/A	3.6
Returning <sup>5</sup>	49	34	14.6	N/A	2.5
<b>TOTAL</b>	<b>49.4</b>	<b>31.6</b>	<b>14.7</b>	<b>N/A</b>	<b>4.2</b>

1. For example course outline/lecture.

2. Key “active” elements of the programme are online BUT no significant reduction in face-to-face classroom time).

3. As “significant” BUT face-to-face classroom time is significantly reduced.

4. Wholly or very largely.

5. The “returning” row corresponds to institutions that responded to both the 2002 and 2004 surveys.

6. Institutions were not given this option in the 2002 survey.

Source: OBHE.

Table 1.2 suggests incremental growth between 2002 and 2004. In 2002, an average of 81% of programmes/courses at responding institutions had either no online presence at all, or only a trivial or modest presence. In 2004, the figure dropped to about 75%. The average for “none/trivial” fell from



49% to 43%. Amongst respondents from Australia, Canada and the United Kingdom, on average between a quarter and a third of provision was judged “significant” or higher – with Australia (34.6%) in a significant lead over the United Kingdom (24.1%) and Canada (24.6%). In 2004, 20 institutions (16%) claimed that 50% or more of current programmes/courses had at least a “significant” online presence, compared to eleven in 2002 (almost 11%). On average, in both 2004 and 2002, the strongest “positive” category remains “modest” online presence. Overall, less than 4% of provision was reported as “wholly or very largely conducted online”, in fact down slightly from 2002. This decline may simply be a matter of sampling, but may also reflect the failure of some hasty wholly online ventures conceived during the dot-com boom.

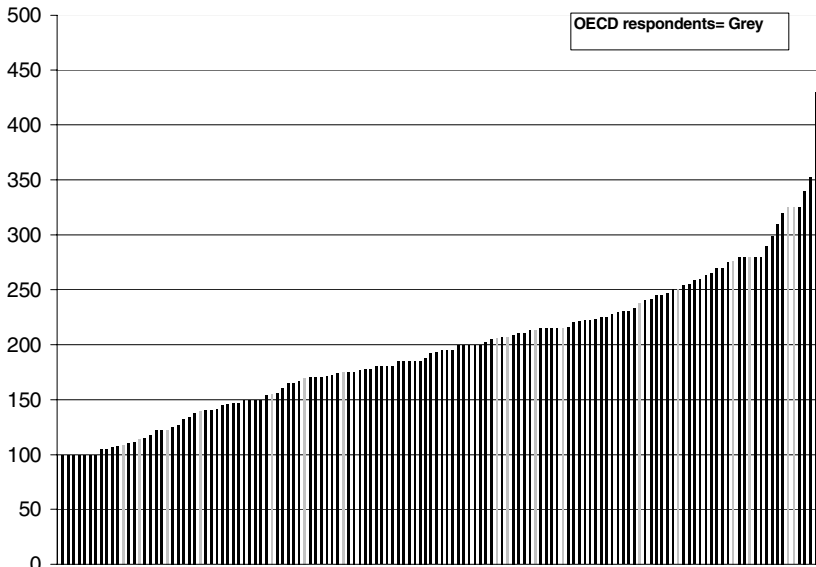
Of course, in the Observatory survey, within each average the range was wide. In the United Kingdom between 100 and 5% of courses/programmes had none or trivial online presence, in Canada this figure was between 100 and 1, in low income/low-middle income countries between 100 and 3 and in Asia Pacific between 90 and 5. Australia and South Africa were both between 90 and 0%. Under “none/trivial” the standard deviation was 33%, under “modest”, 25%, under “significant”, 17%, under “dependent”, 9% and under “wholly online”, 8%. Only three institutions (one Australian, one Canadian, one from the United Kingdom – including two campus-based) reported a majority of provision as “Web dependent” and above. Only one institution (distance learning) reported a majority of provision as “wholly online”, and only fourteen (11%) reported 10% or more of provision in this category. In 21% of cases, zero provision was allocated to the “wholly online” and “Web dependent” section, and in a further 31% of cases, the figure was 5% or less. This indicates that in about half of responding institutions, forms of online delivery that are significantly non-dependent on the face-to-face classroom remain small-scale and of peripheral importance. Even at institutions where this form of online provision is more significant, in the vast majority of cases it remains very much a minority activity.

Figure 1.1 presents both the OECD/CERI and Observatory data in weighted form. The distribution of the OECD/CERI institutions reinforces the view that the survey sample broadly reflects spread of practice more generally.

The figures for returning Observatory respondents were in line with the overall figures. In 26 cases (65%), the proportion of programmes/courses in the “none/trivial” category fell significantly between 2002 and 2004, and in three other cases the position was stable. In the remaining cases (just over 25%), 2004 data showed a decline compared to 2002. This may simply reflect the fact that different individuals completed the two surveys, and only one (or neither) had access to reliable figures. However, in some cases

the decline may, as above, reflect a reining-in of uncoordinated or under-performing online provision, and/or a re-assessment of which provision fitted into which category.

**Figure 1.1. Weighted online presence – OECD and Observatory respondents**



Source: OECD and OBHE.

Another question provided a sense of future online presence at course/programme level among Observatory respondents (see Table 1.3). This question asked institutions to indicate whether “integration of major online elements into the majority of the curriculum” was currently 1) in place institution-wide; 2) to be implemented institution-wide in the next 12 months; 3) to be implemented institution-wide in the next five years; 4) in place in one or more sub-sections of the institution; or 5) not a strategic priority. The term “major online elements” was not defined.

Roughly the same percentage of institutions in 2004 (24%) as in 2002 (22%) claimed to have already integrated, or to be integrating in the next year, major online elements into their curriculum. Australia is leading in this respect with 37% of institutions claiming major online presence across the majority of the curriculum. While only 14% of respondents (up from 11% in 2002) currently claim institution-wide integration of major online elements,

24% expected to be able to make such a claim within twelve months (compared to 22% in 2002) and 56% within five years (compared to 61% in 2002). Optimism to implement remains particularly high in low-middle income economies (63%), where no university has yet integrated institution-wide use of major online elements.

**Table 1.3. Major online elements in the majority of the curriculum**

	In place institution-wide	To be implemented institution-wide – next 12 months	To be implemented institution-wide – next 5 years	In place – one or more sub-sections of institution	Currently not a strategic priority	No response	Total
2004							
UK	5 (11%)	6 (13%)	16 (34%)	16 (34%)	4 (8%)	0	47
Canada	4 (14%)	0	5 (17%)	12 (41%)	8 (28%)	1	29
Australia	7 (37%)	3 (16%)	7 (37%)	2 (11%)	0	0	19
South Africa	0	1	4 (40%)	3 (30%)	2 (20%)	0	10
Asia-Pacific	8 (32%)	4 (16%)	7 (28%)	6 (24%)	0	0	6 (25)
LMI	0	2 (10%)	10 (53%)	3 (16%)	4 (21%)	1	10 (20)
Returning	6 (16%)	6 (16%)	13 (34%)	11 (29%)	2 (5%)	0	(38)
TOTAL	17 (14%)	12 (10%)	38 (32%)	37 (31%)	16 (13%)	2	122 (100%)
2002							
Developing	0	4 (18%)	8 (36%)	2 (9%)	7 (32%)	1	22
Other Developed	4 (11%)	5 (14%)	16 (43%)	9 (24%)	0	3 (8%)	37
UK	7 (17%)	2 (5%)	15 (36%)	11 (26%)	7 (17%)	0	42
Returning	4 (11%)	5 (13%)	19 (50%)	6 (16%)	4 (11%)	2	(38)
TOTAL	11 (11%)	11 (11%)	39 (39%)	22 (22%)	14 (14%)	4 (4%)	101 (100%)

Source: OBHE.

Department-led initiatives remained a significant focus for online institutional activity with 31% of institutions claiming to have major online

elements in place in one or more sub-sections. Canada constitutes a case in point. Although only 14% of Canadian respondents presently feature an institution-wide integration of major online elements, no university expressed plans to implement in the next twelve months and only 17% in the next five years. Canadian responses accounted for half of those institutions that consider online learning not to be a strategic priority, with 28% of the country total making this claim. However, it is notable that Canada boasts the highest percentage of institutions with department-led initiatives in place (41% of respondents, in contrast to 34% in the United Kingdom, 24% in Asia Pacific and 16% in LMI countries). Similarly, not a single South African respondent cited institution-wide online activity, whilst 30% reported integration into one or more sub-sections. Conversely, the majority of Asia-Pacific respondents claim to have integrated significant online learning into the majority of the mainstream curriculum, with 76% predicting an institution-wide integration within the next five years and 24% preferring department-led initiatives. No Asia-Pacific respondent considered this form of online integration to be of low priority. Again, the distribution bias of the Canada and Asia-Pacific country categories should be taken into account (see Introduction).

Overall, the results indicate that substantive online learning has not yet touched the mainstream curriculum in the vast majority of universities. Although over 70% of respondents claimed to have implemented an institution-wide online learning platform (see Chapter 4), only 17% are shown to have actually integrated online elements into the majority of classroom activity. This reinforces the important distinction between institution-wide strategy and institution-wide use. Nevertheless, a majority of respondents (56%) affirm plans to effect such integration in the relatively near future and only a small minority view the task to be of low priority (13% of total). According to the implementation strategies of 2004 respondents, in five years, 56% of all universities expect to have incorporated significant online elements into the majority of their mainstream curriculum (63% in low-middle income economies [41% in South Africa], 76% in Asia Pacific [90% in Australia], 58% in the United Kingdom and Canada lagging behind with 31%).<sup>2</sup>

Analysis of 2002 and 2004 data from returning respondents suggests that these predictions may be overly ambitious. Four institutions that predicted “integration of major online elements into the majority of the

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2. The figures for department-led initiatives in online learning may be higher than indicated above. Given that respondents were asked to provide only one answer for this question, those institutions that reported plans to implement on an institution-wide basis may also have major online elements in place in one or more sub-sections.

curriculum” in 2002 reported that this had been achieved by 2004. Three of the four had indicated up to a five-year horizon in 2002, and yet claim to have met their target within two years. Four other institutions that predicted such integration in 2002 within twelve months did not report success. Two shifted the prediction to up to five years hence, one cited another twelve months and the fourth pointed to department-led initiatives only. Of the sixteen additional institutions that cited a five-year development horizon in 2002, 50% made the same claim in 2004, and three predicted attainment within a year. Of the remaining four, three cited department-led initiatives, and the fourth indicated that this form of integration was no longer a strategic priority.

In a related question, a slightly greater proportion of respondents reported institution-wide use of online learning at a distance (17%) than in on-campus curriculum (14%). However, as in 2002, the predicted figure in five years time was lower for distance learning at 34% in contrast to 56% for on-campus. For online learning at a distance, 2004 respondents preferred ongoing local development (53%) rather than an institution-wide strategy (34%). Again, these figures are in contrast to trends in on-campus development, with 31% adopting department-led initiatives and 67% institution-wide strategies. Data from returning respondents in 2002 and 2004 denote a similar trend. In five years time, 64% of 2004 returning respondents (versus 74% in 2002) predict integration of major online elements into the majority of the (typically on-campus) curriculum – more than twice as high as the figure cited for distance learning (26% in 2004, down from 33% in 2002). As in 2002 survey findings, these figures indicate that on-campus delivery, rather than distance learning, remains the core business of the majority of responding institutions.

### 1.3. Number of students “online” (Question 5.2)

An obvious but rarely encountered measure of online learning is number of students enrolled, and what proportion this represents of all students at a particular institution. The first question is: what is meant by “online learning”? Given the growing role of ICT on-campus, at most institutions almost all students undertake some form of online or e-learning.

The OECD/CERI survey tried to estimate the numbers of students online by focusing on students in the “Web dependent” category and above. Respondents were asked to provide their “best estimate” of full-time equivalent student numbers on “Web dependent”, “mixed mode” and “fully online” courses/programmes (aggregated) divided into undergraduate modules, undergraduate short awards, undergraduate degrees, postgraduate (graduate) modules, postgraduate short awards and postgraduate degrees. Of

course, some institutions operate at only undergraduate or postgraduate level, and some also run large continuing education programmes that fall outside these categories. Most respondents found this question difficult to complete, and/or provided non-comparable data. The metric is deceptively simple.

### ***Difficulties of the data collection and OECD/CERI findings***

The first difficulty concerned “full-time equivalent” (FTE) students. This concept is familiar in some countries (*e.g.* Australia, New Zealand, the United Kingdom) but not in many others. Thus many returns concerned headcounts rather than full-time equivalents. Related to this, some respondents reported in terms of “enrolments” rather than students, allowing for double counts as one student might enrol on more than one course. Where both a total enrolment and total headcount figure was provided, it was clear that enrolments might exceed headcount by some distance.

The second difficulty was that few institutions collected data in the manner requested by the survey. For example, some institutions reported the practice whereby students enrolled on a number of modules that might be a path towards a master’s degree, but might stand alone as credit or an alternative award. The final “destination” of the enrolment, or a final award, would only emerge with time.

In those cases where an institution was able to provide broadly accurate and comparable data, it was at module level that the bulk of activity appeared. A few institutions (*e.g.* University of British Columbia, University of South Australia, UCLA Extension and Zurich University) reported around a third to a half of all students enrolled on at least one relevant course. Given the absence of comparable local data, some institutions used learning management systems (LMS) based course registrations as a proxy for relevant online student numbers, a decision that may result in an artificially high total for some LMS-based activity maybe below “Web dependent” level.

By contrast, reported enrolments at degree level were generally much smaller – up to about 250. However, in a few cases the numbers were larger. For example, Monash University reported 750 students on (relevant) online undergraduate degrees; Multimedia Kontor Hamburg reported 1 500, and the University of British Columbia 2 000. In respect of postgraduate degrees, Carnegie Mellon University and the University of South Australia reported 250 students, while Monash University cited 1 000. Many respondents stressed that stated figures were estimates only.

### ***OBHE results***

The Observatory survey asked a similar question, but with a problematic difference. While the OECD/CERI survey asked for student numbers for the three “highest” categories of online presence, the Observatory survey asked for data for only the top two. That said, the same methodological difficulties arose, and the overall findings were similar. In the vast majority of institutions, provision with “high” online presence (as defined by the respective surveys) accounted for well under 5% of all students.

The greater number of respondents to the Observatory survey allowed use of averages. Total reported FTEs (Observatory “Web dependent” category and above) represented 8.4% of all FTE students at the 105 institutions with adequate data. However, a small number of institutions accounted for a majority of the total. Only three institutions claimed a majority of total FTEs as relevant online FTEs (two in the United Kingdom, one in Canada – two campus-based). Seven institutions (two in Asia-Pacific, one in Canada and four in the United Kingdom) accounted for 44% of all relevant online students; and twenty institutions (19%) accounted for 68% of the total. Forty-three per cent of respondents either did not answer the question or reported less than 300 relevant students. In the case of 62% of respondents, relevant online students either amounted to 5% or less of total FTEs, or the respondent did not answer the question. A further 25% of institutions claimed between 5 and 20%, and the remaining 12% claimed in excess of 20%. E-learning enrolments were thus concentrated in a small number of active institutions.

Analysis of the OBHE results by category suggested higher levels of relative activity in Asia-Pacific and the United Kingdom, compared to Canada and low income/low-middle income countries. Canadian institutions accounted for 15% of the total number of online students (and for 27% of the total number of students) but for 25% of respondents. The United Kingdom on the other hand accounted for 54% of the total number of online students (but for only 34% of the total number of students) and 39% of respondents. Asia-Pacific accounted for 25% of the total number of online students (but only 11% of the total number of students) and 20% of respondents. Low-middle income countries accounted for 6% of online students (and 28% of the total number of students) but for 16% of respondents. Australian respondents accounted for 22% of relevant online students, 21% of total students, and only 17% of respondents. The figures for South Africa were 5% of relevant online students, 14% of total students, and 8% of respondents. However, as set in Table 1.4, a small number of outliers skewed the figures.

**Table 1.4. Students on relevant online modules/programmes (2004)**

	No. of online students	% of all students	% if one outlier removed	% reporting zero <sup>2</sup>
Australia	30 723	8.8%	7.3%	11% (2)
Canada	21 404	7.1%	5.8%	None
South Africa	7 240	3.3%	2%	None
UK	76 995	15.6%	11.1% <sup>1</sup>	4.3% (2)
Asia-Pacific	36 148	8.2%	7%	None
Low income/low-middle income countries	7 570	2.7%	1.7%	30% (6)

1. Removal of additional outliers would reduce the United Kingdom's figure significantly.

2. Figures in brackets refer to the corresponding number of institutions reporting zero.

Source: OBHE.

Analysis of the OBHE results by level suggest an association between these forms of online learning and relatively short learning “units” – whether short awards (including masters degrees) or modules. For example, taking the 47 United Kingdom institutions, total undergraduate headcount in 2002/03 was 570 370, while total postgraduate headcount was 172 415.<sup>3</sup> Taken as a whole, this may be expressed as 77% undergraduate and 23% postgraduate. Taking reported relevant online FTEs for the same 47 institutions (whole awards only), reveals figures of 42% undergraduate and 58% postgraduate. This suggests (in the United Kingdom at least) that forms of whole award “distance” online learning are much more prevalent at postgraduate level, in terms of absolute FTEs and relative to the general undergraduate/postgraduate ratio. This finding fits the common view that whole award “distance” online learning is most suited to experienced learners who combine the need for flexible delivery and motivation to study remotely. Only when module FTE data are compared is the general ratio of undergraduate and postgraduate take-up replicated in the online data. Arguably, this is because relevant online module FTEs, particularly at undergraduate level, are primarily made up of campus-attending students.

How did 2002 and 2004 data compare? In order to make a general comparison, undergraduate and postgraduate figures were combined at each

3. Figures derived from HESA (2004). It is assumed that comparison of “whole award” headcount and FTEs is valid in terms of proportion.



level. The picture was mixed and ambiguous. The first problem was that at each “level” between one third and a half of returns were incomplete – *i.e.* only either 2002 or 2004 data were available, or no data were available at all. In the remaining cases, about equal numbers of institutions reported increased and decreased FTEs. In some cases the increase or decrease was in line with the 2002 figure, but in other cases was dramatically different. The latter may reflect genuine success/failure (and the post dot-com boom volatility of remote online provision), but may also be indicative of different individual respondents in 2002 and 2004, and either improved central data in 2004, or poor (but conflicting) data in both years. Given these difficulties it was not possible to draw any further conclusions about FTEs in 2002 compared to 2004.

In general, the high level of non-response to this question on both the OECD/CERI and Observatory surveys emphasises that in many institutions corporate data on relevant online provision remain inadequate. Equally, it seems clear that at most campus-based institutions, student take-up is relatively low, and does not represent a significant proportion of total students.

#### **1.4. E-learning provision in different disciplines (Questions 4.2 and 5.3)**

Is e-learning provision evenly spread across disciplines? Is e-learning more suitable for some fields of study than others?

##### ***Areas of concentration***

Question 5.3 of the OECD/CERI survey specifically asked whether or not the use of e-learning was evenly spread across particular faculties/departments/courses. Of the 19 institutions, eight cited areas of concentration, four reported an even spread, and two pointed to an emerging even spread following historical concentration. Of the remaining five, four split e-learning by “level” (*e.g.* saying that “Web supplemented” provision was evenly spread across the institution, whereas “Web dependent/mixed mode/fully online” was more concentrated), and one answered that it was too early to generate a trend, since the introduction of e-learning was still new to the institution (see Table 1.5). In cases where the respondent did not distinguish between different “levels” of e-learning, it is probable (in line with responses to other questions) that the reported activity is concentrated at one or two levels rather than across the entire spectrum.

**Table 1.5. E-learning provision in different disciplines**

Name of the institution	Types	Disciplines where e-learning is concentrated
Aoyama Gakuin University	C	Business/Management
Asian Institute of Technology	C	Primarily in IT and Electronics, but becoming more evenly spread
Carnegie Mellon University	C	Even spread. Exception – Performing Arts (Web supplemented); Science and Engineering (Web dependent), Business/Management, IT (Mixed mode/fully online)
Kyoto University	C	Engineering, Medicine
Monash University	C	Widely distributed, but Medicine in the lead (up to Web dependent); Business/Management, IT (mixed mode/fully online)
Multimedia Kontor Hamburg	C	Too early to generate a trend
University of British Columbia	C	Even spread (up to Web dependent); Nursing, Arts, Agricultural Sciences, Education, Forestry, Medicine, Dentistry (fully online)
University of California, Irvine	C	Business/Management, Law
University of Paris Nanterre	C	Education, Languages, Literature, Philosophy, Social Sciences
University of Sao Paulo	C	Dentistry, Education, Engineering, IT, Mathematics/Statistics, Medicine.
Zurich University	C	Concentrated in faculties of Medicine, Arts and Mathematics/Science. Less use in other disciplines
FernUniversität Hagen	D	Evenly spread
Open Polytechnic New Zealand	D	Accountancy, Business/Management, Communications, IT
UK Open University	D	Initially Business/Management, IT, Mathematics, Science and Technology (use spreading quickly across the university)
Open University Catalunya	D	Evenly spread
Virtual University of Tec de Monterrey	D	Evenly spread
UCLA Extension	D	Widely distributed. High but adoption in Design, Engineering, Performing Arts, Science and Technology (Web supplemented/dependent); Business/Management, Creative Writing, Education/Teacher-Training (fully online).
University of South Australia	M	Evenly spread, but heaviest use within Business/Management and IT disciplines
University of Maryland University College	M	Evenly spread

*Notes:*

C = Campus; D = Distance; M = Mixed.

Disciplines are listed in alphabetical order, except in cases where the institution ranked relative take-up.

*Source:* OECD.

The five institutions that reported the even spread were either distance-based (3) or mixed (2). This institutional grounding in distance/flexible delivery shaped historical disciplinary development, and tends to mean a better alignment between disciplinary range and suitability for e-learning enhancement in some form. For example, the Open University Catalunya or the Virtual University of Tec de Monterrey offer little or no natural/physical sciences, engineering or performing arts. The Open University Catalunya has however offered “engineering informatics” programmes since 1997 and plans an “engineering telecommunications” programme in 2006. The new programme will use simulation labs. These are the three broad subject areas widely said to be least amenable to majority online delivery – due to the centrality of physical equipment and/or face-to-face interaction. This absence is also true for the University of Maryland University College, although the institution does offer natural science as an undergraduate minor, but not online. FernUniversität Hagen offers science and engineering subjects at a distance and increasingly online in some form (notably drawing on simulation tools). More generally, distance/mixed institutions have a history of facilitating provision in non-traditional forms. In this respect, the social/interactive benefits of forms of e-learning (as opposed to, say, paper-based or “lecture” video-based distance learning) stand out; whereas for campus-based institutions the advent of e-learning presents a significant challenge to face-to-face norms for perhaps the first time. Thus for campus-based institutions e-learning may appear first and foremost as a second-rate substitute for conventional delivery, while for distance/mixed institutions it may appear as a pedagogic breakthrough.

In general, business/management and IT emerged as the most commonly cited disciplines making significant use of e-learning in some form, and dominated the “mixed mode” and “fully online” categories. However, in a number of institutions, at the “Web supplemented” and “Web dependent” levels, almost all disciplines were active. Even for the “fully online” category, one institution (University of British Columbia) pointed to a range of faculties involved, including nursing, arts, agricultural sciences, education, forestry, medicine and dentistry. It must be remembered that this refers to particular courses within these faculties, and not provision across each faculty. One institution (University of South Australia) reported the results of a 2002 student feedback survey, which revealed significantly more positive student reaction to the role of online learning among business students, compared to education, arts and social science students. However, it is not clear what role the nature of the online learning undertaken by each group of students may have played.

Focusing solely on the two “highest” levels of online presence (“mixed mode” and “wholly online” in the OECD/CERI survey), the Observatory

survey asked for information on relevant activity by discipline. Respondents were given eleven pre-defined disciplinary groupings, and asked to indicate whether each was a major, medium or minor area of relevant online activity, or whether there was currently no relevant activity. The responses were weighted (“major area of activity” = 3; medium = 2; minor = 1). About 70% of respondents answered this question (see Table 1.6).

**Table 1.6. Relevant online provision by discipline**

	Australia	Canada	South Africa	UK	Asia-Pacific	LI/LMI	TOTAL
<b>Business/management</b>	2.24	1.96	1.33	1.82	2.26	0.86	1.8
<b>IT/computer science</b>	2.31	1.35	1.63	1.72	2.32	1.36	1.69
<b>Education</b>	1.73	1.52	0.5	1.54	1.69	0.31	1.38
<b>Nursing/health related (excluding medicine)</b>	1.63	1.33	0.38	1.48	1.56	0.23	1.27
<b>Social sciences</b>	1.88	1.32	0.25	1.31	1.88	0.15	1.25
<b>Physical sciences (including engineering)</b>	1.65	1.15	0.88	1.04	1.75	0.58	1.18
<b>Humanities</b>	1.5	1.45	0.38	0.86	1.44	0.23	1.05
<b>Natural sciences</b>	1.38	1.2	0.89	0.81	1.41	0.79	1.04
<b>Medicine</b>	1.08	0.78	0.83	1.23	1.21	0.5	1
<b>Law</b>	1.13	0.33	0.63	1.04	1.13	0.42	0.78
<b>Performing arts</b>	0.64	0.47	0.13	0.59	0.64	0.08	0.49

*Note:* LI/LMI = Low income/low-middle income countries.

*Source:* OBHE.

In line with OECD/CERI findings, business and IT emerged as the most commonly cited disciplines provided online, and with the partial exception of Canada (where humanities ranked second), were the most commonly cited disciplines in each country/regional grouping. With one exception (medicine in the United Kingdom), Australian respondents cited higher levels of activity across all disciplinary areas compared to Canada, South Africa, low income/low-middle income countries and the United Kingdom. A handful of institutions cited “other” disciplines, including agricultural sciences, communications and theology (which other respondents may have allocated to pre-existing categories).

To provide an indication of disciplinary intensity of “distance” online learning (*i.e.* “mixed mode” and “wholly online” in the OECD/CERI survey), the weighted scores were summed for each institution. The maximum possible score was 33 (3 x 11). The overall average score was 10.6, with a range of zero to 27. Only ten institutions scored in excess of 20. Thus if one takes all respondents it is fair to say that “distance” online learning (*i.e.* “mixed mode” and “wholly online”) is being developed across a wide range of disciplines. However, in most institutions activity is more concentrated, and only two disciplines (business and IT) achieved an average in excess of half of the possible range (0-3). There were clear differences by country/region. The average sum for Australian institutions was 15.2, compared to 10.8 for the United Kingdom, 9.9 for Canada and 7 for South Africa. This suggests that in the majority of institutions development of online “distance” learning is concentrated in a handful of disciplines, but that overall Australian institutions are developing this form of online capacity across a wider range of disciplines than their counterparts elsewhere in the Commonwealth.

### ***Areas of enhancement***

The OECD/CERI survey asked respondents for their views on whether particular subject areas, types/levels of programme, and learning activities were best suited to enhancement through e-learning (Question 4.2). While there was no dissent as to the administrative value of e-learning (*e.g.* online schedules, submission of work, email contact, etc.), its pedagogic value in different circumstances was seen to be more complex. A number of institutions (*e.g.* University of South Australia, UK Open University, Open University Catalunya, University of British Columbia, University of Maryland University College) asserted that their institutions were committed to ongoing experimentation and development with a view to extending appropriate e-learning enhancement to all subject areas/programmes. Faculty at Carnegie Mellon’s new campus, Carnegie Mellon West (see Box 3.1), were said to regard all subject areas as equally suited to e-learning enhancement in some form. The respondent from the University of Maryland University College stated that his institution continued to experiment with “pedagogical techniques and learning objects”, and saw no subject area/level/activity as inherently inappropriate for e-learning enhancement. However, this did not necessarily mean that at present all provision at those institutions was characterised by e-learning enhancement in the same way and to the same extent. Only two institutions declined to express a view, saying that no study had been done.

Most institutions claimed that certain subjects/programmes/levels were more appropriate for e-learning enhancement than others. Among the

campus-based institutions, there was strong support for the pedagogic value of face-to-face provision supplemented, rather than replaced by e-learning. Zurich University argued that while all subjects/programmes/levels might benefit from “Web supplemented” provision, and most from “Web dependent” and “mixed mode”, fully online programmes were not appropriate at university level at all. The respondent stated that “face-to-face experience” was essential at this level. The University of British Columbia made the same point, if less strongly, by saying that the institution placed a high value on face-to-face learning, and thus the focus for the majority of provision was on the “Web dependent” modality.

The Aoyama Gakuin University respondent commented that e-learning was most suitable in cases where the topic was well-defined and widely agreed upon. This was said to make e-learning enhancement more suitable for introductory rather than advanced courses. The Asian Institute of Technology reported that core competency provision was particularly suitable to e-delivery. With its science and technology focus, the Institute’s students require a firm grounding in mathematics, statistics and economics, but recruitment from a wide geographical area means that many students are in need of remedial work. The availability of a set of online self-study resources would enable students to get up to speed in their own time (perhaps prior to enrolment), and help standardise the entry population. The Asian Institute of Technology also cited potential for e-learning as a means whereby students on exchange programmes may keep in touch with course developments and fellow students. The Carnegie Mellon University respondent reported a “general belief” among faculty at its main campus that e-learning is better suited to “teaching “skills”, *e.g.* solving formal problems or acquiring a second language, than for the kinds of judgement involved in, say, “historical analysis or political analysis”. Others disagreed with these limitations. The UK Open University respondent pointed to successful e-learning courses in arts and literature, as well as the more common business and technology. The Virtual University of Tec de Monterrey argued that in their experience it was possible to engender online equivalents of face-to-face discussion and collaboration. Indeed, it was argued that collaborative work was particularly amenable to electronic delivery, insofar as it enabled remote, sustained and asynchronous interaction – something typically beyond the scope of a face-to-face setting.

The Open University Catalunya and the University of British Columbia respondents commented that even in subjects that demanded extensive practical/experimental work, electronic simulations were possible and even desirable (*e.g.* where the costs of conventional practice are very high, or the consequences of mistakes very great), but cost prohibitive. However, the very fact of being able to repeat an exercise or experiment electronically an

infinite number of times – at little or no additional cost – might offset development costs long-term. The UCLA Extension respondent noted that increased bandwidth at low cost and the ubiquity of a growing range of sophisticated software on home computers were rapidly opening up the possibilities of, and access to, forms of e-learning across all subjects.

The experimental status of e-learning at the Asian Institute of Technology meant a preference for adoption in non-credit, rather than credit courses. As an aside to the comment above about the widespread commendation of the administrative value of e-learning, the Monash University respondent pointed to the cost to the student of printing large volumes of online material. This cost, and the sense that the desire to print (*e.g.* to increase the portability of materials) would not decline significantly over time, was said to have persuaded some faculty to turn back from shifting all academic and administrative content solely online.

In conclusion, e-learning appears as unevenly spread across disciplines, except in distance education institutions, IT and, business/management being the most commonly cited as significant users of e-learning. Institutions had differing views on the suitability of e-learning for all academic users. The most active users of e-learning were the most optimistic about the possible versatility of e-learning.

### **1.5. Levels and types of students (Questions 5.2-5.6)**

Institutions were also asked about the adoption/appropriateness of e-learning at different levels and for different types of students (Question 5.2). Of the 19 institutions, 17 responded to the question, and two did not respond (citing lack of experience/evidence).

#### ***Undergraduate/postgraduate students***

Among the 17 responses, two campus-based institutions offered only graduate level courses, one distance-based institution offered only undergraduate courses, and another distance-based institution offered mainly postgraduate courses. Focusing on the remaining 13 institutions (seven campus-based, four distance-based and two mixed), the trend that emerged was that at campus-based institutions, e-learning (particularly forms substantially online) was more popular with and more often used by postgraduate and professional students than by undergraduates, while any such distinction was less marked at distance/mixed institutions. A number of campus-based institutions said that at present they did not offer any fully online programmes at undergraduate level.

The Monash University return described what the respondent regarded as an ideal form of e-learning enhancement for the taught postgraduate student, almost regardless of discipline. This view was echoed by a number of other campus-based respondents. Such students tended to be part-time, have limited capacity to attend evening and weekend face-to-face classes, and were often highly motivated (linked to a desire for professional advancement) with honed independent study skills. In Monash University's experience, these students preferred a mix of delivery modes – print for content heavy materials, online resources, links and graded discussions, email communication between faculty and students, and face-to-face sessions at key junctures in the programme. A technical helpdesk was also desired, accessible by email and telephone. Due to the cost of face-to-face attendance (*e.g.* for non-local students), this ideal was said to not always be realised.

For campus-based undergraduates, the ideal was seen to be provision of a range of resources and information in electronic form (ideally accessible remotely) to support on-campus interaction with faculty and other students. Indeed, the Monash University respondent indicated that at present the majority of on-campus students and faculty preferred “Web supplemented” provision. The implication was that “Web supplemented” delivery provided useful additional resources, accessed on a largely voluntary basis, but did not challenge undergraduate face-to-face teaching and learning norms. This was supported by other studies of undergraduate preferences (*e.g.* Kvakik *et al.*, 2004, p. 49). The University of British Columbia argued that undergraduates should be gradually introduced to online study through “Web supplemented” and “Web dependent” provision, with the extent of online activity increasing through a degree programme. This, it was argued, will help prepare undergraduates to take best advantage of the increasingly online characteristics of postgraduate/professional programmes.

The distance/mixed institutions all reported that there was no difference in their students' interest in e-learning, *e.g.* between undergraduates and postgraduates. As stated above, this a reflection of the non-traditional character of such institutions, where the traditional face-to-face encounter is by definition not central to delivery. Forms of e-learning offer such institutions/students opportunities to enhance traditional distance modalities. Equally, the undergraduate population at many distance/mixed institutions is less traditional (typically older, part-time) than the campus-based equivalent. This further undermines any correlation between level and interest in e-learning. One caveat came from the Open Polytechnic New Zealand – related to access to facilities rather than level. Historically rooted in paper-based distance learning, the institution noted the advantages of the shift to e-learning in terms of shorter material revision cycles and more interactive



learning between students. However, it was also pointed out that while all New Zealand residents are guaranteed a postal service, Internet access or quality is not guaranteed. In this sense, print-based distance learning might for the present be regarded as more equitable from an access perspective; and may disadvantage some types of non-traditional learner (e.g. low income).

### ***Full-time/part-time students***

Institutions were then asked whether use of e-learning had affected the balance between full-time and part-time students. Greater use of e-learning might enable more individuals to combine full-time work and part-time study. This might engender a gradual shift away from the campus-based model of physical attendance. Of course, many distance/mixed responding institutions already have a majority part-time student body, and given their student profile, this is unlikely to change. For campus-based institutions, the common response to this question was that greater use of e-learning was expected to increase flexibility of attendance. While this was not a shift to part-time study as such, it did indicate a move away from the traditional residence-based campus model. This trajectory was also seen as a means to recruit additional students, and from a broader geographical area. Zurich University again emphasised the centrality of the campus experience (whether the student is full-time or part-time), and cited student concerns that greater use of e-learning did not dispense with that experience.

The University of British Columbia noted a trend towards a combination of full-time study and part-time work, and argued that greater use of e-learning assisted its development. Thus, greater use of e-learning helped some students at campus-based institutions to study full-time, whereas the demands of conventional physical attendance might have made part-time study the only option for those students. Monash University pointed out that the general increase in part-time study in tertiary education in many countries was driven by broader funding and participation changes, rather than greater use of e-learning, but agreed that e-learning might give students more options and flexibility. The University of South Australia, a mixed-mode institution that has gradually moved away from a traditional campus-based approach, cited changes to the physical campus to accommodate a more diversified and part-time student body. These included wireless Internet access campus-wide, varied social spaces and computer access in both large and small clusters. The aim was to enable different kinds of students to gain value from the campus, and to maximise the value of limited or infrequent attendance.

### *Academic, culture and gender differences*

Institutions were asked whether they had any views/evidence as to whether traditional or non-traditional students (in terms of academic preparedness) responded better to e-learning, and whether gender, ethnicity or age played a role (Questions 5.4 and 5.5). No respondent said they had directly investigated these matters to date, but the majority said (based on experiential/anecdotal evidence) that non-traditional students (however defined) responded as well or even better than their “traditional” peers. (Of course, some institutions had a particular mission to serve various kinds of non-traditional students, and thus had no “traditional” students to contrast any experience with (or vice versa). Monash University acknowledged anecdotal evidence that less academically prepared students were generally more dependent learners, and thus less able to cope with significant e-learning. The University of Maryland University College argued that the key distinction was between “strong” and “weak” students, and cited little correlation between “weak” and “non-traditional” (however defined). The respondent admitted that significant use of e-learning caters to the more independent and self-motivated students (but then the same could be said of campus-based study), but with adequate support (*e.g.* assistance with academic writing, self-study tutorials, guidance against plagiarism, etc.): “students from all demographics respond well to online learning”. Some respondents asserted that any lack of academic preparedness connected with “non-traditional” students was often compensated for by enhanced motivation/greater work and life experience (compared to the “traditional” entrant). At the Open University Catalunya, the typical student was described as between 25 and 45 years old and in work. Forty per cent students already had a degree, and another 20% had some prior tertiary education experience.

The University of British Columbia cited some experiential evidence of cultural differences relating to online delivery. Specifically, the respondent noted that some students felt more at ease than others posting comments online, or participating in an open online discussion. The Asian Institute of Technology predicted that given its regional in-take, increased use of e-learning might require some customisation of learning objects and/or awareness of cultural norms of learning and interaction. Multimedia Kontor Hamburg cited “some evidence” that female students exhibited less confidence about their IT skills. Kyoto University claimed that e-learning provision was more popular among younger and female students, but cited no evidence. Overall, it was clear that the institutional evidence base on the impact of gender, ethnicity/culture and age on e-learning is weak.

## 1.6. Students across borders

It is possible to distinguish four different forms of cross-border education: 1) people mobility (whether students or faculty), 2) programme mobility, 3) institution mobility and 4) service mobility (*e.g.* institution-building and accreditation) (OECD, 2004). Examples of form 4 was the UK Open University's institution-building role vis-à-vis the Arab Open University, and the Open University Catalunya's consultancy service activities in China. "Offshore students" concerned forms 2 and 3. In some instances, programme mobility may involve people mobility (*e.g.* visiting faculty and/or exchange students).

"Offshore students" studying in their home country may be categorised as follows:

- Students taking courses at a branch campus/centre of a foreign institution (institution mobility).
- Students taking courses at a local partner organisation of a foreign institution (programme mobility, with perhaps some people mobility).
- Students studying on a distance education programme offered by a foreign institution (programme mobility).

Table 1.7 summarises the numbers of "offshore students" studying in their home country as a percentage of all students at each institution, categories of cross-border provision to students, and types of institution. Caution should be taken when interpreting the figures. Institutions were asked to provide data in terms of full-time equivalents, but a number provided headcount or enrolment figures (or this was unclear). The term "offshore students" was differently interpreted by some institutions (*e.g.* to also include "domestic" students studying abroad). Finally, many institutions did not make a clear distinction between the three "offshore student" categories mentioned in the list above.

Only five institutions reported offshore FTEs/enrolments/headcount in excess of 10% of the total student population, and only one (University of Maryland University College) reported offshore headcount as a majority of total headcount. At eight institutions, either no offshore enrolments were reported, or as a proportion of all enrolments/headcount amounted to 1% or less. At three institutions, figures were not available, but it was clear that in two cases (Asian Institute Technology and particularly the Virtual University of Tec de Monterrey) the level of activity was significant.

**Table 1.7. Number of offshore students and categories of cross-border provision**

Name of the institution	Country	Offshore students (% all students)	Categories of cross-border provision			Type
			1	2	3	
Kyoto University	Japan	None				C
University of California, Irvine	US	None				C
University of Paris Nanterre	France	None				C
University of Sao Paulo	Brazil	None				C
Aoyama Gakuin University	Japan	None <sup>1</sup>			X	C
Zurich University	Switzerland	Handful		X	X	C
Open Polytechnic New Zealand	New Zealand	0.9%			X	D
University of British Columbia	Canada	1%		X	X	C
Carnegie Mellon University	US	Approx. 3%	(X)	X	(X)	C
UCLA Extension	US	<5%		X	X	D
FernUniversität Hagen	Germany	Approx. 8%	X	X		D
Monash University	Australia	10.4%	X	X		C
UK Open University	UK	15%		X	X	D
University of South Australia	Australia	20%		X	X	M
Open University Catalunya	Spain	21%			X	D
University of Maryland UC	US	57%	X		X	M
Multimedia Kontor Hamburg	Germany	Unclear				D
Virtual University of Tec de Monterrey	Mexico	Unclear		X	X	D
Asian Institute of Technology	Thailand	Unclear <sup>2</sup>	X	X	(X)	C

*Notes:*

C = Campus; D = Distance; M = Mixed.

(X) Indicates “under development”.

1. Aside from some “sub-programmes” delivered jointly with a foreign institution.

2. One branch campus in Vietnam.

Source: OECD.

With the exception of Monash University (which has embarked on the unusual strategy of working towards a number of branch campuses and centres worldwide), the most active institutions in terms of offshore enrolments were distance/mixed institutions. Mode of offshore delivery included forms of branch campus/centre (Asian Institute of Technology, Monash University, and the University of Maryland University College), international delivery partnerships (University of South Australia) and forms of distance learning, some with elements of face-to-face support (UK Open University). The Open University Catalunya, with centres in Catalonia and worldwide, provides information and administrative services, in addition to teaching. The GOLD (Global Online Learning and Development) programme at Monash University (a dedicated fund for faculty/units to bid for) is an attempt to develop the role of e-learning in the university's internationalisation policy. The University of British Columbia respondent pointed to similar moves at the programme level, concerning a face-to-face programme (University of British Columbia's International Master of Business Administration) offered at Shanghai Jiao Tong University in China.

A key difference between the two leading offshore providers (University of Maryland University College and the University of South Australia) was the target student body. The offshore students at the University of Maryland University College were primarily US citizens abroad (military servicemen and women and their families), accessing the University of Maryland University College programmes at almost 150 installations throughout Europe, the Middle East, and the Pacific. Thus, the University of Maryland University College does not advertise to attract "foreign" students but "domestic students abroad". This respondent stated "the online environment has allowed us to move beyond our traditional markets (students in their State) to reach a broader national and international audience of part-time students". On the contrary, the University of South Australia targets "local students abroad" through partnerships with local organisations. A number of other institutions said that a significant proportion of offshore enrolments were accounted for by individuals with strong connections with the source country (*e.g.* citizens of that country, individuals who had studied in that country in the past, or where "significant others", such as parents, had studied in that country). Two institutions (Carnegie Mellon University and UCLA Extension) cited plans to expand offshore activity, in terms of branch campuses (*e.g.* Carnegie Mellon University in Qatar), international delivery partnerships (UCLA Extension – building on longstanding customised provision for visiting companies/governments interested in aspects of the southern California economy) and online (*e.g.* Carnegie Mellon University "Open Learning Initiative" – see Box 3.2). The Zurich University respondent speculated that the Bologna Process would facilitate bachelor's

and master's degree-granting partnerships across borders, in which e-learning was expected to play a growing role.

### **1.7. Cross-border delivery of e-learning (Questions 5.7-5.10)**

The OECD/CERI survey tried to evaluate the importance of cross-border delivery of e-learning and to draw lessons of institutions' experience in the field.

#### ***Offshore delivery***

There is little hard data on the extent of international take-up of online distance learning sourced from abroad (see Observatory data below). There is some evidence that individuals seeking non-local undergraduate higher education are, like their counterparts taking local programmes, resistant to fully online delivery. According to one study, such students “equate the method of delivery as a trade-off between cost and risk”, and make strong connections between campus-based delivery and quality (Kulchitsky and Leo, 2003).

Examples of online offshore delivery reported by OECD/CERI respondents were either fully online, asynchronous/synchronous delivery with a combination of foreign and local support, or a combination of online and face-to-face delivery. For example, Carnegie Mellon University offers synchronous online programmes with their local support at the Athens Institute of Technology in Greece. The University of British Columbia and the Virtual University of Tec de Monterrey run a joint online masters of educational technology, with the majority of students based in Canada and Mexico. Aside from the Open University Catalunya, the University of Maryland University College and the Virtual University of Tec de Monterrey, no respondents portrayed cross-border online delivery as a major proposition in the short-term, and much cited provision was department-led and small-scale.

A number of respondents did see potential. For example, the UCLA Extension respondent argued that the accessibility of online programmes suggested a mixed model, where national and international students enrol in the same programmes, and benefit from diverse perspectives: “... thus a UCLA Extension online class can be a learning microcosm that reflects an integrated global society”. The Asian Institute of Technology respondent predicted that greater use of e-learning would enhance current “visiting faculty” offshore delivery arrangements, whereby faculty travel to offshore locations for intensive face-to-face sessions. E-learning, it was thought, would provide students with more structured activities between face-to-face sessions. While the respondent expected a blended approach to be adopted,

the expectation was that the face-to-face element might decline in significance. The Open University Catalunya respondent emphasised that the rationale for cross-border e-learning was to forge “strong and potent networks of university cooperation” (enhancing the student experience, opening research opportunities) as well as commercial gain.

The Observatory survey also attempted to elicit figures on full-time equivalent (FTE) online students studying in their home country on provision sourced from abroad. A number of methodological difficulties (*e.g.* relatively high non-response rate, non-adherence to FTE reporting, suspected inclusion of mobile international students) meant that these figures must be treated with caution. Using reported data, purportedly non-resident international students amounted to about 17% of total relevant online students (*i.e.* “mixed mode” and “fully online” using the OECD/CERI categories), and about 1.4% of all students at those institutions. Reported recruitment at both undergraduate and postgraduate levels was strong, but methodological difficulties inhibited a straightforward comparison between the two. In line with the OECD/CERI results, these figures pointed to international online delivery as currently of peripheral significance and inadequately tracked centrally in most institutions.

Question 5.10 asked about major offshore markets for e-learning, but it was impossible to gauge relative uptake in each cited market, and the overall number of countries cited was quite large. In some cases, online international recruitment retained a regional/linguistic character (*e.g.* Open University Catalunya’s enrolments in Latin America and the University of South Australia’s recruitment in parts of Asia), while in other cases recruitment was small-scale and scattered.

### ***Issues related to offshore delivery***

The OECD/CERI survey asked if institutions had learnt any lessons from providing online learning to students abroad (Question 5.9). Despite the fact that this activity was still new to many institutions, thirteen institutions shared their experiences and views.

### ***Infrastructure***

The Carnegie Mellon University respondent commented that unreliable or poor quality technology can quickly lead to student/faculty frustration, which may undermine perceptions of the value of the programme as a whole. The Monash University respondent noted that many current offshore students are in countries without widespread and reliable Internet access – and that this had hindered any attempts to introduce a significant e-learning element into existing cross-border activity.

### *Cultural adaptation*

Even where the language of instruction is common, curricula, teaching content, support must be tailored to local needs. The Open Polytechnic New Zealand respondent stated that the institution had been criticised for use of materials off-shore perceived to be New Zealand-centric. This is a common theme in the literature. Cross-border online delivery cannot simply involve minor revisions to domestic materials, but rather “significant investment in market research and in development of an understanding by course developers of the context in which their projected student audience is living and studying, of their expectations of teachers and of the ways in which they will be learning” (Alexander, 2002, p. 197). This may affect technologies employed, pedagogies adopted and materials used. A localisation approach obviously stands in tension with the potential cost efficiencies of a standardised curriculum.

The Asian Institute of Technology respondent indicated that plans for local language delivery through the GMSVU (Greater Mekong Sub-Region Virtual University) (see Box 2.2) might be organised whereby the local partner would take on responsibility for translation/localisation, rather than the Asian Institute of Technology taking responsibility for this.

### *Quality assurance and host country regulation*

Respondents offered few details, other than general commitments to the effect that offshore students were entitled to the same levels of service as domestic students. Number of institutions stated that national regulation was diverse and often constraining, but offered no specific examples.

### *Partnerships*

Partnerships are seen as a way to enhance “brand” in offshore markets, understand local regulation, overcome language barriers, and facilitate student support. Equally vital was said to be vetting potential partners in terms of financial and academic viability. The HEAL (Higher Education E-learning Courses Assessment and Labelling), in which University of Paris-Nanterre is involved with other higher education institutions across five European countries, is an example of partnership promoting virtual mobility (see Box 1.1).

### *Assessment/equity*

The Open Polytechnic New Zealand respondent described arrangements whereby offshore students were required to locate a suitable local examination centre, and to cover the cost of couriering completed papers to New Zealand. For students taking the same programme in New Zealand, all such matters were taken care of by this institution.



### **Box 1.1. Higher Education E-learning Courses Assessment and Labelling (HEAL)**

The European Commission supports the HEAL programme, as a pilot project within the framework of the SOCRATES. It aims to explore the possibility of establishing a virtual mobility programme in the universities, a kind of e-Erasmus of the European Union. In 2003-04, as an experimental endeavour, six institutions from five countries (Finland, France, German, Italy and Portugal) participated, coordinated by a French inter-governmental agency, EduFrance. EduFrance was created in 1998 by the French government to promote the French education system internationally. The HEAL offers online courses to students, with the option of validating their learning with ECTS (European Credit Transfer System) points.

At the end of the course, a symposium was organised to share the experiences among the participating institutions (including institutional decision-makers, faculty, technologies, and students) and relevant authorities. The advantages were reported from students (both from traditional age group and from adult learners) and faculty. The major challenges focused on four issues: 1) organisational and administrative issues, 2) cultural diversity, 3) technological difficulties, and 4) the importance of individual coaching. As for the organisation and administration of the project, the biggest challenge reported was how to guarantee the equivalence of the credits transferred. The established ERASMUS exchange agreements do not apply and, therefore, new agreements needed to be signed between partner institutions. Awareness-raising of virtual mobility among institutional decision-makers is believed to be of critical importance. To strengthen and ensure the credit equivalence, student's work was meticulously tracked and processed. In terms of maintaining cultural diversity, the issues included ensuring linguistic pluralism and diversity in contents, teaching methods, and evaluations. Technological difficulties were mainly found on platform interoperability and the degree of user-friendliness (the importance of technical support and monitoring mechanisms were reported). Occasional face-to-face meetings are believed to be key to e-Erasmus success and consequently a dual tutoring system was proposed: one at the host university and one at the home university.

The final report *Toward a Virtual Erasmus* was produced in early 2005. Based on an evaluative questionnaire analysis as well as discourse analysis from the Symposium, the report presents: 1) the geographical differences in the development of e-learning in general, 2) the kinds of courses available, 3) the strengths and limitations of the e-Erasmus (e.g. transculturality, platforms, the role of coordinators, visibility, global ethics, pedagogies, quality assessment of the courses, etc.), and 4) the next steps including: reinforcement of cultural diversity, advancement of e-ERASMUS within the LMD framework, promotion of European e-learning markets, and development technologies to allow intercultural mobility.

The project website can be found at: [www.heal-campus.org/](http://www.heal-campus.org/)

### *Currency*

When targeting offshore students, it was interesting that a number of institutions opted to advertise course fees in US dollars (designed to utilise the currency most commonly “understood” internationally). In fact, in the case of the Open Polytechnic New Zealand, the decision was later taken to advertise only in New Zealand dollars (primarily to avoid processing difficulties associated with foreign currency).

## **1.8. Conclusion**

This chapter addressed the online presence of programmes, the number and types of students “online”, and e-learning across-borders.

Overall, higher education institutions appear to be at vastly different stages of development in terms of the online presence of programmes. It is clear that for the majority of OECD/CERI sample institutions, fully online programmes will remain very much a minority (if gradually increasing) activity in the short-to-medium term. This is certainly the case for campus-based universities, who predominantly predicted the continuation of a vigorous campus-based face-to-face teaching and learning environment. No institution with a significant campus-based element predicted fully online provision greater than 10% of total programmes by 2006/07. Only virtual/distance learning-only institutions or branches predicted to embrace fully online programmes to the greatest extent (although not all such institutions pointed in this direction to the same extent).

Given the diversity of the sample, there was no simple trend in respect of Web supplemented/dependent/mixed mode provision. Every institution reported at least some programmes in these categories, and all pointed to a significant reduction of programmes with no or only trivial online presence over time. Thirteen institutions predicted that in three years time, less than 10% of programmes would be in this category (eight saying zero).

The Observatory data supported these findings and showed that the case study institutions were well distributed across the spectrum of e-learning practice, at least in the Commonwealth. In general, and in most campus-based institutions, the growth of e-learning to date has been incremental and the dominant forms it takes have not fundamentally challenged the centrality of the face-to-face classroom. There is nothing to suggest that this pattern will alter significantly in the medium term.

Most OECD/CERI sample institutions were unable to provide accurate and detailed figures on the number of full-time equivalent students on programmes with at least “Web dependent” online presence. Judging by the information available, it appeared that modules accounted for the majority

of relevant activity, reflecting the dominance of e-learning as supplement to on-campus delivery at undergraduate level. Whole award programmes with relevant online presence were more common at postgraduate level, in line with the view that such provision favours the experienced learner wanting to combine work/family and study. One suggestion was for online presence to be gradually increased across an undergraduate degree, not least to prepare students for the increasingly online characteristics of graduate/professional advancement.

While business and IT provision dominated e-learning activity in many institutions, there was considerable evidence of growing diversification by discipline, with many respondents confident that sophisticated use of technology could (if not now, then in the relatively near future) match or even surpass face-to-face delivery in almost every subject. At present, a number of respondents saw e-learning as most amenable to remedial work and “training” (*i.e.* presentation of a fixed body of knowledge rather than fundamentally discursive or analytical activity).

Respondents were able to offer only limited evidence of any impact of gender, ethnicity/culture and age on effectiveness of e-learning.

As for cross-border e-learning, although it was a key feature of dot-com rhetoric, like distance online learning in general, it has generally failed to emerge as a significant market to date. Much e-learning innovation has taken place on-campus, with the necessarily more complex possibilities of remote international delivery typically left to small-scale, department-led experiments. A few months after completion of the survey, UK eUniversities Worldwide (perhaps the world’s most ambitious and well-funded international recruitment e-learning initiative) folded in the light of disappointing early enrolments and concerns about long-term viability (see Garrett, 2004).

A small number of OECD/CERI respondents reported significant general cross-border enrolments, and some cited new technology as a useful supplement to existing forms of delivery, but there was no sense in which 100% online modalities were viewed as a short or even medium term replacement. Observatory data on relevant international enrolments reinforced the view that in most institutions this form of activity is small-scale, peripheral and poorly tracked centrally. OECD/CERI respondents raised a range of issues, such as the balance between standardised and localised curricula and support, local regulation, partnerships and pedagogy.

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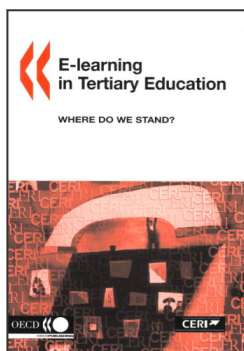
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