**ORGANISATION FOR ECONOMIC
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**DIRECTORATE FOR EDUCATION, EMPLOYMENT,
LABOUR AND SOCIAL AFFAIRS**

THEMATIC REVIEW OF THE FIRST YEARS OF TERTIARY EDUCATION

COUNTRY NOTE: PORTUGAL

Introduction

This document presents the findings and conclusions of a review of developments in programmes, teaching and learning in the first years of tertiary education in Portugal in 1997.

The review was carried out by an OECD review team at the invitation of the Ministry of Education and within the framework of the OECD Education Committee's thematic review of the first years of tertiary education. The scope and objectives for this review effort were circumscribed: to explore studies and learning leading to first degrees or diplomas at the tertiary level, to place them in their academic, social and economic contexts and to examine policies and practices which relate to key national concerns for tertiary education and are of wider comparative interest. For the purposes of the OECD comparative activity, 'first years of tertiary education' refer to a stage or level of studies beyond secondary education which lead to the first formal qualification recognised on the labour market. Learning at this level takes place in a wide variety of settings and forms, but in Portugal it is the universities and polytechnics, public and private, where the demand for initial tertiary-level studies leading to the *Bacharelato* and the *Liceniatura* is met.

Review activities in Portugal form a part of the larger OECD comparative effort, and so this report serves two purposes: first, to increase the comparative knowledge base on developments, policy approaches and experience in the first years of tertiary education; second, to report to the Ministry of Education on the findings and conclusions of the review mission in Portugal. Portugal is one of twelve countries which have participated in the effort. The other countries are: Australia, Belgium (Flemish Community), Denmark, France, Germany, Japan, New Zealand, Norway, Sweden, United Kingdom and United States. The missions to Portugal and France could not be organised before the Education Committee considered and debated the findings and conclusions of the first stage of the comparative work. Nonetheless, selected findings of review teams in both countries have been included in the comparative report of thematic review, *Redefining Tertiary Education*, which was published by the OECD in 1998. The Portuguese policy approaches and actual experiences examined in the course of this thematic review continue to be reported in other OECD comparative work, among which the OECD's *Education Policy Analysis.*

To carry out its work, the review team undertook a 10-day mission in June 1997. A full schedule of meetings enabled us to pose questions and discuss developments with Ministry officials; representatives of academic and research staff, students and employers; and presidents or directors of tertiary education institutions and administrative staff. Visits to institutions in the Lisbon area, Oporto and Braga provided an opportunity for detailed on-site exchanges which drew upon the perceptions and experiences of administrators, teachers, students and associated interests of local government and education authorities and businesses. Mr Pedro Lourtie, Director, and Ms Maria Luis Rocha Pinto, Assistant Director, Department of Higher Education in the Ministry of Education, provided background materials, including a translation of the Ministry's important Guideline document, *Autonomy and Quality*, and organised the rich, diverse schedule of meetings. We thank them and all those with whom we met in the Ministry, the regions and institutions, for the considerable effort undertaken on our behalf, the detailed information provided to us and the openness with which we were received.

Subsequent to our visit a revision to the frame law was passed (September 1997). We refer at several points to the changes introduced and progress in implementation. The changes themselves reveal a dynamic environment for policy and tertiary education. While our observations should be seen as a view of the state of play in 1997, we have drawn attention to issues and challenges which the September 1997 revision in the frame law along with actions taken at individual tertiary education institutions might

address. There will be interest and value, within Portugal and internationally, in monitoring responses and developments. We hope the observations presented here will be part of that ongoing process.

Portugal is also taking part in an OECD thematic review concerned with the transition from initial education to working life; the preliminary findings of both review teams have been drawn on in the preparation of each of the separate country notes. While the teams worked to different terms of reference, the country notes arising from these two thematic reviews should be seen as complementary.

Context

Twenty-five years ago, Portugal was in many respects still a developing country. At that time, there was a sharp contrast between traditional Portuguese culture, which had contributed so much to Western civilisation, the brilliant intellectual élite that embodied it and the poverty of a population reduced to emigration. By the 1960s, economic expansion had begun. In the 1970s the country underwent major changes: the revolution of 1974 and the fall of dictatorship, the independence of colonies and the return of expatriates. The recession that affected all of the OECD countries hit Portugal hard, striking at a time when emigration was being restricted by the host countries, which were also suffering from unemployment.

This triggered radical transformations in Portuguese society. Economic policy shifted from protectionism and a strategy of substitutions for imports to open and free markets.   Yet the most important transformation was probably that of social and cultural outlook: energies were diverted from overseas and focused on Portugal itself -- a dynamic that was given a powerful boost by the return of the expatriates. The goal of "convergence" with other countries of Europe has become an ongoing concern, and the idea has been greatly reinforced by membership in the European Union and, recently, a concerted policy push to meet the Maastricht criteria for economic and monetary union. The new dynamic can be found in education as well. Even so, Portugal has maintained special ties with its former possessions and, at the same time, its historical outreach, with perhaps a particular attraction for the United States.

The accomplishments to date are impressive. For people who have visited Portugal over this period the economic and social transformations are striking -- so much so that there might be some concern as to whether the process of change is always under control, in particular as regards the preservation of sites and heritage. And yet in its modernity the country has kept all its warmth and identity, even if signs of wider European influence are everywhere to be seen.

Economic and Employment Trends

The economic accomplishments are just as impressive. In the past the two pillars of the Portuguese economy were crafts and agriculture. It was, however, low productivity agriculture, which failed to meet even half of the country's food needs and, in many regions, barely enabled farm families to survive. The economy ran a deficit and was kept afloat only by the foreign currency earned by a fledgling tourist industry and, above all, the remittances of emigrant workers, who accounted for a third of the labour force. In some contrast, Lisbon, Oporto and Braga developed as national or regional centres. Like many other countries Portugal was described in terms of duality. Or, rather, dualities -- between cities and the country, between the coast and the interior, between the industrial sector and agriculture/crafts. Portugal had fallen behind in comparison with Europe. Many explanations are advanced for this but one of the most striking -- and probably one of the truest -- was not only that a large number of Portuguese worked

abroad, but that the energies of the élite were previously focused more overseas than on their home country.

In the past two decades a vast amount of investment has been undertaken, and many new activities have taken root. Initially, it was low-skilled, labour-intensive sectors such as textiles, clothing and shoes that developed and fuelled a sharp growth in exports, to Europe in particular. Agriculture has modernised, although it runs a deficit which now stems from the cost of labour. The construction and public works sector has prospered. Sectors that are more highly technical, such as the production of motor vehicles, have seen a proliferation of new plants, such as that of a European consortium, AutoEuropa. Per capita GDP is now getting nearer to the European average, and is reflected in changing lifestyles.

Yet the Portuguese economy is sensitive to international competition, its competitiveness lessened by rising labour costs and inadequate technology. Portugal is not alone in this, but the country's size, the fact that its development has been recent, and the absence of industrial or financial groups with international dimensions make it especially sensitive to demand swings in Europe. For example, the immense progress of the recent past failed to prevent an economic downturn in 1993, which was more pronounced than in other countries. The subsequent recovery, although now in its fifth year and generally well-balanced, has not been without difficulty and new challenges.

Rapid economic change has triggered significant growth in employment. Joblessness, especially among young people, had long been very high in Portugal. Today it is around 7 per cent -- a level that is of concern to the authorities but lower than in many other countries in Europe. This is all the more remarkable considering that the country has had to cope with the return of its expatriates, a halt to emigration and a relatively high labour force participation rate among women. Over much of this period, the Portuguese population has aged: youth cohorts in absoolute as well as relative terms have declined (Annex table A.1).

Nonetheless the downswing entering the mid-1990s led to a large number of job losses, and young people were particularly affected. In 1995 job losses were concentrated in the textiles, clothing and shoe sectors; indeed, out of 26 000 job losses over the course of the year, 25 000 were in those three sectors, which accounted for a third of industrial employment as well as a third of Portuguese exports. Even if the losses represented only about 5 per cent of the sectors' total employment, the concentration indicates a loss of competitive advantage for these highly labour-intensive industries which depended on the low cost of Portuguese labour. Today, labour costs are no longer an advantage -- at least not in comparison with some countries in Asia, Latin America and Eastern Europe.

These are signs of important underlying changes in the Portuguese economy, affecting both labour market demand and, partly in relation to this, demand for education through and beyond compulsory schooling. Opportunities for unskilled or low skilled workers are no longer increasing. The low skill/low wage strategy can no longer deliver growth, and the new imperative is to improve education and skills in the labour force. As expressed in the most recent OECD Economic Survey of Portugal (OECD1998):

> Greater progress has been made with respect to structural policies affecting labour
> and product markets, but attention should now focus on bringing Portugal's level of
> skill and educational attainment closer to the OECD average.

Education

OECD examiners undertaking a review of education policies in Portugal in 1982 noted a paradox: on the one hand, there were prestigious universities (including one of the oldest in the world) and university professors who played key roles in society, the world of politics and the upper echelons of government and business alike; on the other hand, there was a considerable handicap in terms of school enrolment, particularly among girls for whom school became mandatory only in 1960. Those times have changed, except perhaps for the role of university professors in Portuguese life. Very rapid expansion accompanied the growth in the size of youth cohorts in the 1960s, and the 1974 revolution gave new impetus to that expansion by putting the accent on democratisation and social justice. Portugal's entry into the European Community, more particularly the Commission's efforts to promote convergence through such programmes as PRODEP, gave further impetus to growth. Further, when many countries put a stop to immigration, which had seen one out of every three Portuguese men go abroad, the increase in school attendance was one of Portugal's most significant social transformations (Table 1).

Table 1. Total Enrolments	
1960	1 147 200
1970	1 503 300
1977	1 905 200
1981	1 950 000
1988	2 013 800
1991	2 219 400
1994	2 307 000

The educational opportunities were sown on fertile ground. There is, in Portugal, high regard for education. An OECD survey of public attitudes carried out in twelve countries in 1994 showed Portuguese respondents were relatively more likely to list as an important quality "a desire to continue studies or training" than respondents from such countries as Denmark, Finland or the United Kingdom (OECD 1995). At the tertiary level, the *licentiatura* has a long and distinguished reputation. In traditional Portuguese society, this diploma was the symbol of belonging to, and in some cases the means of access to, the upper classes. It retains its high regard, reflecting the aspirations of a society which values education and of families which see education at this level for their children as desirable and feasible. The students with whom we met reflected these broader aspirations, as well as the more immediate and instrumental interest in acquiring a tertiary-level qualification valued on the labour market.

The profile of enrolment rates is now approaching that of the United Kingdom, with a lag until age 17 (having to do with the difficulty of providing basic schooling in all areas), slightly higher rates until age 20, and clearly higher rates thereafter (which is not in all respects a good thing, as we shall see later). This growth constitutes important change in and of itself, but also through its effects on economic and social development. Even so, growth this fast cannot help but generate tensions and difficulties, a number of which were noted and discussed in the course of our meetings. Thus, for example, in spite of the expansion in participation, secondary school students fall below the average on international comparisons of achievements in mathematics and science. Concern about literacy was also expressed in discussions in the Ministry, with employers and with administrators and teachers in tertiary education.

Periods of rapid growth in education give rise to quantitative concerns about classroom capacity, teaching resources and funding. Perhaps less thought is given to whether institutions, structures or the system as a whole, which were designed in another era and for other purposes, are evolving to meet the new needs of society. It is in these terms that we understand the concern expressed in the Ministry's Guideline document for higher education, *Autonomy and Quality*, about serious imbalances and "disturbing signs of instability" and the intent to pursue "balanced development" as an appropriate means to address these problems. The Guideline document reflects the results of a period of reflection and development, bringing together a number of policy initiatives intended to set the course for tertiary education in the coming years.

The implementation of these policy initiatives now furthered through revision of the frame law is, for the most part, too recent to project their eventual impact. Nonetheless, we find the document a useful statement which sets out a more comprehensive vision for the development of tertiary education in Portugal. In the wake of rapid expansion, the evolution of different types of programmes, institutions and arrangements and the introduction of an array of targeted policy initiatives, it is appropriate and necessary to take a more coherent, strategic view of tertiary education as a whole: the functioning and likely evolution of participation and provision in all forms; strengths to build on and weaknesses to address; and the ways in which programmes, teaching and learning address the interests and aspirations of young people, families and society in general, and respond to the needs of the economy in particular.

We have chosen to deal here with a set of topics: the development of tertiary education; the institutional landscape; teaching and learning, including the quality imperative; links to employment; the autonomy of institutions; and costs and financing.

Development of Tertiary Education

It is useful to examine trends and patterns in secondary level enrolment as indicators of the levels and nature of demand for tertiary education. Before doing so we make the point that progress and completion rates in primary and secondary schooling remain low and are a matter of concern and policy attention.

Courses at the secondary level are three years long. They comprise a general education option ("classes oriented primarily towards further studies", or CSPOPE) and a technological education option ("classes oriented primarily towards working life", or CSPOVA), which is considered an extension of secondary school. They also include vocational training courses, generally lasting three years, which are organised by municipal authorities or set up through private initiatives. In theory they have more of a vocational and practical leaning than technological options. Other training programmes have been instituted, inter alia by the Ministry for Solidarity and Employment, on either a full-time or apprenticeship basis and leading to a variety of levels of skills and qualifications. Experience and policies at this level are analysed in greater detail by the OECD thematic review team which has examined the transition from initial education to working life.

Enrolment rates in secondary education are near to the OECD average. According to our estimates, half a generation began secondary education in 1991 (Table 2). Most young people embark on general education, with technical and vocational training courses receiving less than a fifth of the flows and attracting only 8 per cent of the generation. Drop-outs are a concern, most prominently in vocational training courses (for which our estimates suggest that two out of five entrants will leave without completing their courses). Data available for a younger cohort (those entering secondary school in 1994) indicate somewhat lower drop-out rates; this could be tied in with the difficulties unskilled youngsters were experiencing in gaining access to employment.

The rate of transfer of those completing secondary school to tertiary education in 1995 was 73 per cent, up from about 60 per cent 10 years earlier. Nearly 30 per cent of the generation have access to tertiary education -- a figure that is near to the OECD average. On the other hand, dropout rates appear very high; we shall come back to this later.

Table 2. Flows in Secondary and Tertiary Education as a Proportion of a Generation (percentages)					
Secondary					
Year	**General**	**Technological**	**Vocational**	**Apprentice-ship**	**Total**
1991	42.6	5.3	2.7	0.4	51.0
1994	34.1	4.4	1.6	0.2	40.3
Dropouts	20%	17%	41%	50%	21%
Tertiary					
	University		**Polytechnic**	**Total**	
1995	19.5		9.8	29.3	
2001	11.7		5.7	17.4	
Dropouts	40%		42%	41%	

OECD Secretariat estimates, based on available data supplied by the Ministry. The data refer to the cohort of 16 year-olds in 1991. Drop-outs from tertiary education are estimated on the basis of drop-out rates over the past six years.

Expansion of participation in tertiary-level studies in Portugal is, among OECD countries, the most rapid and dramatic. In the decade to 1995 overall enrolment has increased by a factor of three (Table 3). No other OECD country for which comparable data are available experienced such rapid growth (Annex table A.2). Although the public sector progressively expanded to meet society's increased demand, the private sector has, over the past ten years, absorbed somewhat more than a third of the growth.

Table 3. Tertiary Education Enrolments, 1960-95 (thousands)				
Year	Public	Private	Catholic U	Total
1960	24	-	-	-
1970	50	-	-	-
1980	75	8	-	83
1985	76	16	-	92
1990	121	36	-	157
1995	199	105	10	314

Source: information supplied by Portuguese authorities.

The growth seems to be accounted for by a number of factors, among which increases in the size of the younger age cohort, increased rates of retention through secondary education and an opening up of tertiary education to accommodate larger numbers of young and mature age adults.

At present, the distribution of students by field of studies is sharply defined by type and control of institution (Table 4). Study programmes in the sciences, health, engineering and technology account for almost half or more of enrolment in public universities and polytechnics. The majority of programmes offered by private institutions, university and polytechnic, concern economics and business fields, law and the social sciences. It is in these fields that enrolment has grown most rapidly into the mid-1990s.

Table 4. Distribution of Enrolment by Field of Study			
	Public University	**Public Polytechnic**	**Private**
Sciences, Health	22.7	20.0	10.1
Engineering, Technology	23.8	43.0	5.0
Agriculture	4.9	6.0	-
Arts	4.0	-	5.6
Law	5.4	-	14.7
Economics & Management	21.9	17.0	34.4
Humanities	13.6	-	4.8
Social Sciences, Education	10.9	18.0	21.9
Others	2.5	6.0	2.4

Source: Conselho Nacional para a Acção Social no Ensino Superior, Instituto de Investigações Sociológicas, *Inquérito Sócio-Económico aos Estudantes do Ensino Superior*, Lisboa, 1998.

It is expected that that demand will now stabilise, due mainly to demographic factors and the accommodation of pent-up demand. Our view is that there is scope for further growth. School reforms linked to increased retention through secondary education, rising incomes and aspirations of families, changing patterns of employment for youth and adults linked to changes in the structure of the economy all come into play. Moreover, it seems to us that some regions and population groups remain under-represented and thus constitute specific targets for policy attention:

- According to information collected in a 1997 survey undertaken for the Ministry, more than 60 per cent of all tertiary education students are women (Conselho Nacional para a Acçâo Social no Ensino Superior, Instituto de Investigações Sociológicas, *Inquérito Sócio-Económico aos Estudantes do Ensino Superior*, Lisboa, 1998). However, women are unevenly distributed across programmes, accounting for about 80 per cent of those enrolled in the social sciences and 40 per cent of those in engineering. This pattern is common to a number of OECD countries, and marks out an area where new efforts might be undertaken to identify and extend more widely approaches to bring women into fields where they have been under-represented and to improve the likelihood of their success in those fields.

- The expansion of tertiary education through regional universities and, most particularly, the polytechnics already has increased access from under-represented groups. The 1997 survey of students showed that 53 per cent of those enrolled in public polytechnic institutes had fathers whose

education went no further than primary school. These institutions also have fostered greater access in regions with traditionally low rates of access. Private tertiary education establishments have served to meet demand in the major urban centres, accounting for almost two-fifths of enrolments from the *Vale do Tejo* and *Centro* regions and 36 per cent of students from the *Norte Literal* region. In all cases, these shares match or exceed the overall proportions enrolling in tertiary education from these regions. Data from the same 1997 survey indicate that students from families of more limited means are slightly under-represented in private institutions (and slightly over-represented in public polytechnics). These patterns reveal where, and how, under-represented groups are being brought into tertiary education. Nonetheless, participation from lower social and economic status groups and from some regions continues to lag that for the country as a whole. As we discuss below, the Ministry is addressing this through new initiatives, including an opening up of entrance examination and admission policies, increased access to and levels of social support for students enrolling in private tertiary education institutions and a broader public information campaign in local newspapers. These efforts are commendable; they can and should be built upon to boost participation from those groups and regions which continue to be under-represented in tertiary education overall as well as in different types of programmes and institutions.

- First-time enrolments by students of mature age, while growing, appear to lag that experienced in other OECD countries. Interestingly, available data indicate that it is the public polytechnics and, above all, private institutions which welcome adult students: according to the 1997 survey of students, more than one-fifth of enrolments in these institutions are twenty-five years of age or above. These institutions are providing a second chance opportunity for those who passed up, failed to gain entry to or failed to succeed in tertiary studies at a younger age. We encountered what seem to be particularly useful initiatives to cater to the needs and interests of mature age adults at some institutions (among which, the polytechnic institute in Oporto and the private Autonomous University of Lisbon) and we were made aware of promising developments such as the Open Learning initiative and specific efforts by individual universities to introduce more flexibility in the organisation of study programmes. The experiences in these and similar initiatives should be drawn upon to extend the access of adults to a wide range of tertiary education programmes.

While policies are in place or proposed to address the problems of access from under-represented groups, there is a need to go beyond admission, programme siting and financing measures to undertake new initiatives aimed at improving the responsiveness of programmes, teaching and learning within institutions for the students newly enrolled. This applies equally to those students now gaining access to tertiary education but, owing to both weaknesses in their preparation through secondary schooling and the lack of flexibility in teaching and learning at the tertiary level, fail at rates of 40 per cent or more. We shall come back to this point below.

Diversification: The Institutional Landscape

At the time of the 1982 education policy review, tertiary education had been cited as an illustration of the "duality" of Portugal: on the one hand, the universities, and particularly the oldest ones, embodied the most advanced segment of the country, which allowed Portugal to maintain its standing in the international community; on the other hand, there was the need for instruction adapted to the demands of society and the economy. This image has not lost its relevance, although the nature of this "duality" is now more complex.

Fifteen years ago, higher education was seen in terms of three sectors: traditional universities, new universities, and polytechnic institutes. While traditional universities, highly segmented into faculties by

discipline, were reputedly oriented more towards research and preparing students for the professions, new universities had to focus more on the needs of the economy and regional development, adopting different structures and methods. Polytechnic institutes, where the course of study lasted three years, and like many other establishments of its kind in Europe and around the world, were expected to be more practical and vocational and to maintain very close ties with local business communities.

In our visit, we encountered a different presentation: three "sub-systems" of public universities, public polytechnic institutes and private institutions, both university and polytechnic. In addition, as an outgrowth of technological secondary education, there are post-secondary "specialisation courses", of a type which can be found in a number of other European countries.

Traditional public universities appear to have retained their traditional orientations. We were struck, for example, by the fact that students reside within their faculties and have limited contact with students from other disciplines or specialities. New public regional universities appear to have situated themselves somewhat closer to the needs of the areas in which they are located. In many respects, and in a quest for equal standing, there has been some emulation of the older universities. But, hierarchies as well as a certain differentiation exist within the group of public universities.

Polytechnics now account for about 38 per cent of enrolments (excluding post-bachelor's degree courses); in terms of matriculations, the proportion is about a third (Table 5). This, in a very short period of time, is a remarkable result, to the credit of the authorities which advanced the project and benefiting from the support provided from the World Bank and later the PRODEP programme. The polytechnic institutes have met, at least in good measure, the initial stated objectives, i.e. to regionalise tertiary education and to respond to the demands of society.

The new private sector comprises a very wide range of institutions and offerings. It now accounts for about a third of enrolments and somewhat more than a third of matriculations (Table 5). By allowing the establishment of such institutions, the Ministry enabled overall provision to respond dramatically and rapidly to a growing demand when new places could not be provided in public institutions. The sector introduced new competition, pressing both public and private institutions to prove 'success', to teach students well and above all to demonstrate a sufficient professional orientation in relation to the skills and abilities needed for employment on completion of studies. The diversity and competition introduced by the private sector are distinctive features of Portuguese tertiary education, warranting attention and study by other OECD countries with or without private institutions.

Table 5. Enrolments and Matriculations in Tertiary Education Institutions (thousands)		
	Enrolments (95/96)	**Matriculations (96/97)**
Public		
Universities	139	26
Polytechnic institutes	60	15
Private		
Universities	44	16
Other	61	7
Catholic university	10	2
Total	314	66

Source: information provided by the Portuguese authorities.

Given their relatively recent introduction in the tertiary education system in Portugal, it is useful to examine the experience with the polytechnic institutes and private tertiary institutions in greater detail in order to identify strengths and growth points.

Polytechnic Institutes

On our observation and with some important exceptions, polytechnics have yet to find their place with distinctive profiles in the tertiary education system. Certainly in some regions and for some polytechnics, the quality, relevance and credibility of programmes are well-established. Although the wide geographic distribution of the polytechnics has provided tertiary education opportunities in under-served regions and the institutions themselves have managed to enrol students from under-served groups, this seems to be an insufficient base on which to build distinctive, high quality profiles responsive to wider economic and social needs.

The government is keen that polytechnics should have equal standing with universities, but within a formal binary structure. This does not preclude a certain drift in the functions of the two types of institutions, and expansion and a changing environment have caused distinctions to fade somewhat: universities now concern themselves more with the needs of businesses, while the polytechnic institutes seek to emulate the universities in some respects. Moreover, some public universities have close and well-established links to polytechnics and polytechnic study programmes.

The Chairman of the Board of Polytechnic Institute Presidents pointed out to us that the institutes are constrained in part by Ministry policies which prevent them from fully developing their own, unique education profiles. For example, the expectation is that research is a matter for universities, even though it is desirable for students regardless of their programme or institution to be exposed to inquiry-based teaching and learning which is informed by state-of-the-art knowledge. Further, the Ministry reviews proposals from the polytechnics for new courses. Public universities are not subject to the same oversight. Moreover, the expectation is that qualifications of polytechnic staff will continue to be upgraded, but the upgrading is seen primarily in terms of degrees awarded exclusively by universities. Clearly there are very sound administrative reasons for such expectations and rules, but they appear partly to work at cross-purposes to the distinctive aims envisaged for polytechnics.

At the same time, the position of polytechnics is further blurred by the range of programmes and qualifications now offered in universities as well as in polytechnics. At the time of the 1982 OECD review, consideration was being given to allowing universities to confer bachelors degrees. If we understand correctly this proposal was linked to the idea of setting up polytechnic training courses in universities, particularly in regions where polytechnic institutes did not yet exist. The OECD examiners expressed doubt about the universities' ability to organise such courses, but accepted the rationale behind the proposal. Italy and Hungary have pursued just such a strategy, in part for financial reasons.

For their part, polytechnics have tended to supplement their practical, vocational training in three-year courses with a further one or two years of specialised advanced studies (*curso de estudos superiores especializados*). Such programmes have attracted about 10 per cent of matriculants in public institutes, but nearly a third of those in private polytechnic institutes. It appears that advanced studies responded to a demand and a need; they have had the advantage of making possible, in the context of a national network, a number of technological advances, improvements in terms of education and research and closer ties with the business community. We were told that this extension had significantly altered the quality of applicants since students did not wish to embark upon studies that did not lead to a *licenciatura* or the equivalent.

The September 1997 version of the Frame Law takes this further, by allowing both universities and polytechnics to award *bacharelato* and *licenciatura*. Thus, there is the intention to award academic degrees at a lower level than the *licenciatura* in the same academic disciplines (in the engineering and technology field, for example), where there is seen to be some value in having shorter, more practically-oriented programmes. At the same time, polytechnic institutes are now authorised to confer the *licenciatura* within the framework of a two cycle programme. Under the new law, advanced courses offered by polytechnics are no longer recognised and will gradually disappear. The new second cycle should further strengthen study programmes at this level and enhance the attractiveness of polytechnics.

However, given that one student in four who undertakes secondary studies now obtains a *licenciatura*, there would appear to be a need to look at strengthening the range of other programmes or qualifications on offer (e.g. a technological or vocational bachelors degree) as well as expanding the numbers attaining the *licenciatura*. In this regard, the position of technical and vocational training in the overall education system appears to be relatively weak. As implied by the estimates provided in Table 2, of those who embark upon post-compulsory schooling, one in three obtains a tertiary education qualification while 6 per cent obtain an intermediate-level vocational certification. In terms of the entire generation, the proportions are respectively 17 and 3 per cent. The interest in boosting the numbers, if not percentages, of those who acquire intermediate-level technological or vocational qualifications explains in part the Ministry's new Programme for Youth Entry into Employment; the initiative aims to ensure that everyone has access to at least one year of vocational training beyond compulsory schooling.

Significant numbers of those with technological or vocational qualifications at the secondary level aspire to further tertiary-level studies. Access policies permit graduates of any secondary stream, whether general education, technological education, vocational training and (level III) apprenticeships, to enter tertiary education. We were unable to ascertain the transfer rates from the different streams, but it seems that few from technological or vocational streams enter tertiary education. In our view the appropriate response is neither to limit options for those following these streams nor to orient them solely as a means of narrow preparation for the world of work. The relevance of secondary vocational and technical programmes may need to be boosted but, equally, students in these programmes need better preparation for tertiary-level studies (whether immediately on graduation, or at a later stage) and programmes, teaching and learning offered at the tertiary level need to be diversified. Steps in these directions would improve the appeal, quality and relevance of technological and vocational training, as has been the target of reforms in Norway among other countries.

At the tertiary level, the challenge is to encourage further development of programmes and of teaching and learning which respond to the needs of the regional economy as well as present attractive learning opportunities leading to qualifications which have a valued position in the wider economy and society. We have the impression that the new regional universities provide programmes which address this need in part. It may be that programmes offered by polytechnic institutes in regions not otherwise served by universities also fulfil this need, although as indicated, the pressures for 'drift' are strong. The Ministry, in our view, has a good understanding of the uncertain position of the polytechnic institutes, and we took note of measures which have been taken or are being implemented to strengthen that position, among which improved articulation and credit transfer and a structure for degrees which is now aligned with those offered by universities.

If they are to succeed in boosting the attractiveness of polytechnic options, these measures must be complemented by a general upgrading of programmes, their quality and their relevance. As we have noted this approach necessarily encourages a certain blurring of the binary divide. On this point our concern is not the maintenance of the divide itself which, by some accounts, seems already bridged in ways arguably

beneficial for students, prospective employers and the economy and society at large. Rather we see the risk as a more general one of a tendency to greater uniformity when what is needed is greater and well-recognised diversity. Other OECD countries participating in the thematic review have followed a variety of approaches to improve the quality, relevance and attractiveness of programmes and also to maintain diversity. In Australia, some universities have established or absorbed polytechnic-type courses or institutions within their overall administrative, governance and academic structures. In Belgium (Flemish Community), Sweden and New Zealand, practical and pragmatic forms of co-operation have been developed between individual universities and polytechnics or similar institutions.

Within the existing institutional landscape in Portugal and within the framework of the two-cycle programmes in polytechnic institutes, government policies could aim to promote the reinforcement of those first-cycle programmes which are professional and practice-oriented, incorporate stages, last three years and are strongly linked to regional economic needs. We were reminded in some of our meetings that the former engineering, business and agriculture schools catered to such needs. In theory, these institutions were incorporated into the system of polytechnic institutes, although some of those we met said that technolgical secondary schools have developed these types of programmes. Whatever the interests and possibilities, polytechnic institutes or secondary schools which embody the quality, practicality and vocational slant of teaching and close ties with businesses charateristic of these former schools are well appreciated.

This orientation could be further encouraged by providing for greater flexibility in the recruitment profiles and deployment of staff, specifically to bring into the institutes teachers with practical experience in industry or management or relevant research work. In the light of our discussions with students in universities as well as polytechnic institutes, programmes which incorporate work experience (stages, internships) are seen as very attractive. Perhaps more could be done to incorporate the stage as an integral and coherent element in all such polytechnic programmes. Finally, we believe that the approach to permit polytechnics to award both the *bacharelato* and *liceniatura* can help to raise the attractiveness of polytechnic offerings at this level.

Private institutions

The establishment and growth of private tertiary education represents a unique and important feature of the development of tertiary education in Portugal. We had the opportunity to visit two private universities, both of which displayed dynamism and a clear sense of direction and purpose within the likely evolution of tertiary education, the economy and the labour market. These were good examples of how private tertiary education can introduce new approaches and demonstrate rapid responsiveness.

The sector is large, comprising some 140 institutions and accounting for about one-third of the student population. We have the impression of a very wide range of provision, from more or less traditional universities to smaller, or at least highly specialised institutions with limited infrastructure. Ownership arrangements are varied, from private corporate interests to foundations controlled by private interests to individuals as founders and owners; we understand that one private establishment provides instruction in a specialised field under 'contract' with a public university. Similarly, staff profiles and terms of employment appear to be equally varied. Some institutions employ a large proportion of full-time teaching staff; others rely to a significant degree on part-time teachers who hold posts at public universities. These arrangements explain, in part, how it was possible for the sector to expand as rapidly as it did, and also the concerns and judgements about quality which have arisen. References in some of our meetings to 'turbo' professors, i.e. those who travel from one site to another to deliver lectures while retaining their posts in public universities, were not intended as a favourable reflection on programmes

and teaching in the private sector. However, the development of private tertiary education is not so simply characterised, nor is the use of (some) part-time staff necessarily a negative feature of the system. Indeed, it is important to consider the quality issue in broad terms and to evaluate programmes offered in the private sector in relation to their aims. It may well be that some or many do a good job with regard to access, job placement and efficiency. We have not seen the evidence one way or the other.

In particular, it is recognised that private institutions have to a great extent accommodated demand that public sector institutions were unable to meet. This covers a wide range of aspiring students: those from well-off families who could not secure a place in a public university in the programme of their choice as well as mature age adults seeking highly marketable skills in the shortest possible time and in programmes that cater strongly to evening and part-time studies. As mentioned above, the pressure of demand appears to be receding, as the relative size of youth cohorts decline, pent-up demand is gradually accommodated and both public and private tertiary education institutions expand and diversify. The Ministry now envisages a period of some consolidation within the private sector, and has introduced measures to guide this process while addressing particular concerns.

The concern most widely expressed, even in discussions with those connected in some way with the private sector, is the likelihood of uneven quality from one programme or institution to the next. The Ministry seeks to ensure quality comparable to that found in public institutions through the progressive implementation of the evaluation system to cover private institutions and programmes and certain minimum requirements in terms of financial strength, infrastructure and staffing. With respect to the latter, the Ministry is requiring all private institutions to employ a minimum proportion of full-time teachers. Although our understanding of the sector and of the impact of the procedures is limited, we were told in several meetings that the number of private institutions is likely to fall as some merge with others, or close.

A second concern is that the private institutions appear to have developed highly specialised programmes primarily in the fields of law, business administration and the social sciences. These fields require less initial investment, and such qualifications have been much in demand owing to the expansion of the trade, business and financial sectors. There are three issues which arise. First, where study places are limited in programmes in public universities, students may pursue the options available in the private universities, i.e. in law, administration and other 'book sciences'. We have noted the concentration of enrolments in these fields in private tertiary education institutions (Table 4). That students do opt for such choices derives partly from the present currency of qualifications in these fields on the labour market, the value Portuguese society places on the *licenciatura* and, related to this, uncertainty about the possibilities for the graduate of a three-year programme offered through a polytechnic institute to gain access for further studies at advanced levels in universities. We do not have information on such mobility, but measures to facilitate transfers between the polytechnics and universities figure in the Ministry's current programme. A key issue is whether enrolment in the private 'sub-system' which are concentrated in 'book sciences' may place at risk the more balanced developed of knowledge and skills across a much wider range of fields -- to include the 'hard' sciences and engineering -- in the labour force and population as a whole. Second, a quality issue arises with respect to the capacity of the most highly specialised, mono-disciplinary institutions to provide the kinds of cross-curricular breadth now seen as an important feature of studies at the tertiary level. Third, there is somewhat greater risk to the viability of such highly specialised programmes or institutions, as enrolments shift rapidly in response to changing demands in the labour market. A broadening of programmes, an increase in scale and a strengthening of co-operative arrangements among private institutions and with public institutions can permit the more specialised programmes and institutions in the private sub-system to meet quality standards, secure needed revenues and respond to the demands of students. Other countries with large private sector enrolment have similar (Japan) or less pronounced (United States) patterns, and policy development in New Zealand with respect

to private training establishments offering tertiary-level studies is relevant. It would be useful to draw on experiences in these countries when considering possible options for future policy directed at institutions and programmes in this sub-system.

The private institutions play, in our view, a key role. At present, they help to accommodate demand in excess of the places available in public institutions. As the growth is accommodated and the focus shifts to quality and relevance, a healthy competition brought about by student choices will help to shake out providers of lesser quality, stimulate innovation more generally and enable the government to ensure through its evaluation system attention to needs of students and of the society at large. The Ministry can play a more pro-active role, drawing attention to good examples, allowing such information to influence student choices and so affect thinking within the institutions and more directly stimulating institutions themselves to adapt and implement promising innovations as appropriate.

The Ministry intends to establish greater parity and equal standing for private tertiary education. Public funding in some form would seem to be warranted, partly to sustain the sector's capacity to accommodate demand, to introduce into the system new, diversified and highly effective and responsive programmes and, in relation to this, to boost quality. As we note below, public funding -- whether provided to students (as proposed by the Ministry, and generally advanced by the private sector institutions) or to institutions -- comes with an obligation for programmes supported through such funds to be held accountable. This would reinforce the rationale to bring programmes in this sector under the evaluation system established for tertiary education as a whole. But, on this last, we raise a cautionary note: the quality and evaluation criteria need to be formulated in such a way as to take into account the needs and purposes that programmes in private tertiary education intend to address and the particular characteristics of the students enrolled. The application of a single standard developed with traditional university programmes in view may not only fail to recognise these specific features, but also unintentionally undermine the innovation and dynamism which private tertiary education institutions can introduce. A balance must be struck.

Programmes, Teaching and Learning: The New Quality Imperative

We noted earlier the present-day relevance of the image presented in the 1982 education policy review of a "duality" between, on the one hand, traditional universities with traditional academic studies strongly linked to research and on the other hand, other types of tertiary-level institution providing instruction adapted to the demands of society and the economy. The relevance of this image is that, under conditions of mass participation and broad changes in the economy and society, attention must be given in *all types* of institution and programmes to the provision of tuition which responds to those changes and also to the diverse backgrounds and needs of the students themselves. This applies equally to first degree programmes in the universities, to diploma courses in the polytechnic institutes and to all forms of tertiary-level studies offered by private sector institutions.

Teaching and learning, as near as we could ascertain, follows traditional methods based on formal lectures and with additional academic support for students being limited. We have the impression, based on meetings and a review of some materials, that students tend to be overloaded with facts with much less attention given to analysis and meaning. This seems to apply, with some notable exceptions, throughout tertiary education.

The young people with whom we spoke expressed concerns about future employment and career prospects. For their part employers had the view that courses were too often out of date, too specialised or irrelevant. Students raised similar concerns. That the Ministry takes seriously this matter is reflected in the steps identified in the Guideline document to bring qualifications in line with the needs of the

economy and society. The Ministry fears a further proliferation of highly specialised, if only slightly differentiated, study programmes, along the lines of what appears to have been the experience thus far in the development of the private universities and polytechnics. But, it is important to understand some of the causes for this. Such specialisation seems to arise, on the one hand, from the detailed criteria for course approval followed in the Ministry and, on the other, insufficiently developed external quality assurance procedures. The challenge as we see it is to find ways to balance traditional programme approaches and orientations with an opening of the system and, in so doing, to maintain diversity in provision.

At a time of rapid change and restructuring as is evident in Portugal, perhaps even greater weight can be accorded to tertiary-level studies which broadly prepare students for a future requiring adaptation, learning to learn and career shifts. In a number of OECD countries participating in this thematic review, consideration is being given to the need to find a new balance between specialised skills and knowledge on the one hand and, on the other, an acquired ability to upgrade and relearn at a high level, to communicate, to work in teams with those who bring a range of expertise and experience to job tasks and to be creative. The accent now is on multi-disciplinary knowledge and learning.

This is not so much an argument in favour of common 'mind-broadening' degrees and diplomas as it is of a need to ensure a 'student-centred' balance between education for the workplace and education for life. In concept, the two orientations should be seen as highly complementary. A practical orientation does not reduce the requirement for broader theoretical underpinnings for tertiary-level studies, but it does introduce different ways to foster the acquisition of both theoretical and practical knowledge (e.g. via stages in industry and in the trades). Such an approach has the further advantage of providing opportunities for contact with prospective employers during the course of studies, thereby improving the chances for employment. Although the links should be developed in university courses as well, polytechnics seem particularly well-situated to do this.

Such an approach would go part way toward improving the knowledge that entering students have about the education they will receive and its relation to various professions or vocations. The public university or polytechnic students with whom we met expressed the view that few of their peers knew what to expect on entering tertiary studies, let alone the wide range of evolving employment prospects (including self-employment). Even more could be done to address this problem, among which we suggest a strengthening of the bridge between secondary education and tertiary education and increased contact by teachers at both levels with the world of work.

A student-centred approach

The challenge to put students at the heart of tertiary-level programmes, and of teaching and learning is recognised, but has not been fully addressed. The clearest indication of the nature of the problem is the rate of non-completion. We were not aware of data or analyses of non-completion. Much could be gained from a careful analysis of the patterns and causes of drop-out, non-completion and extended periods of study, and of measures and programme features which seem to be associated with improvements in these areas. The issue is recognised as important, if not yet well understood, in all of the countries participating in the thematic review.

Crude calculations based on comparisons of the education and work status of an age cohort at different points in time suggest that the drop-out rate could be as high as 40 per cent or more, with unknown variation by field of study (Table 2). Further, we have the impression that many students take longer than the specified years of study formally required to complete courses (we heard that it can take 7 years or

more to complete a five-year course). Non-completion and delay to degree or diploma completion may be linked: students may enter and continue to be counted as students, even though they no longer are actively pursuing studies. Whatever the case, the patterns of non-completion and lengthened duration of studies signal a waste of resources and a loss of potential talent for the economy and society, let alone the losses and benefits forgone for the individuals concerned.

We are not invoking narrow, hard-nosed efficiency criteria, although it is clearly appropriate to develop and monitor performance against such criteria among others. Our lens is opened wider: the Ministry's intent to provide tertiary education for the "greatest number in the best conditions" is a worthy and valuable goal; benefits will accrue to the society and individuals as further steps are taken toward this goal. Moreover, we recognise that individual circumstances and interests vary and may change over time, implying a need to take into account legitimate and appropriate departures from the rigid pattern of immediate entry proceeding in the most direct way to a degree or diploma. Given the heterogeneity in the student population, indicators based on such a rigid pattern need to be interpreted with caution. Rather, our concern is the loss implied by the apparent magnitude of non-completion and study delays. If individuals find their ways into tertiary education it seems to us that all possible measures should be taken to ensure that they can find programmes, teaching and learning appropriate to their needs and interests and that they are encouraged and enabled to succeed.

At present, the admission process and structure of learning opportunities appear to poorly serve those who, although qualified for tertiary education, fall below the highest tranch of academic achievement. These students are less likely to be admitted to popular programmes in the public universities falling under *numerus clausus*. The options available include private universities, in which fees are charged and the range of programmes is limited to management, social sciences, law and the humanities, or to polytechnic programmes which provide somewhat more practically-oriented studies but are weakly articulated with the universities. Understandably, for students following fourth, fifth or lower choice options -- with limited potential to build on any qualifications earned -- motivation may lag and performance may fall short of potential.

Some of those with whom we met identified the problem as one of weak and uneven preparation in secondary education; others attributed the problem in secondary education to weak and uneven preparation in compulsory schooling. There is some truth in both of these views, and we noted the Minister's interest in emphasising 'pillars' on which to bring about improvement in primary and secondary schooling for all young people. In this connection we believe that the national examination introduced at the conclusion of secondary education will provide useful information on the range of achievements (according to one set of measures) of students entering tertiary education and, importantly, entering specific study programmes. However, it would be a pity if the proposals to give institutions more control over the selection of their students resulted in lower rates of access from those students who have talent and aspirations but have not yet had an opportunity to fully develop these talents at lower levels of schooling. For such students, special academic support and guidance in the first year of tertiary education could be sufficient to enable them to succeed through an entire degree programme. A selection process which results in the rejection of such students would serve to entrench the status quo.

But, it is also true that the 19th century Humboldtian conception of a research-led institution educating the intellectual elite no longer can suffice when half or more of each age group aspires to and enters tertiary-level studies. Teaching will need to be organised in new ways -- ways other than small, highly specialised tutorials -- if larger numbers are to be provided with effective, responsive and appropriate learning opportunities. A larger pool of students, even if well-prepared, will have more varied interests and learning styles. The challenge is to adapt programmes, teaching and learning to student needs and interests rather than to require students to adapt to the programmes; in short, to seek ways to be more

responsive to student demands within programmes or in combinations of programmes. Importantly, this applies at the well-established universities as much as at the newer polytechnics and regional universities. Student tutorials, problem-solving clinics, computerised self-learning packages and, above all, first-rate teachers who are sympathetic to the difficulties of first-year students are some of the approaches which can be used. Although examples can be found in some programmes and institutions, it is not possible as yet to speak about a widespread awareness of this challenge or of practices in those institutions where strong efforts are being made to address the problems.

Quality and Evaluation

Quality was identified as a key issue throughout our visit. Among the countries participating in the thematic review of the first years of tertiary education the recognition of the importance of this issue was at least as strong in Portugal as in any other country. In the course of a short visit and on the basis of limited, if highly useful materials made available to us, it is not possible to assess the situation in every institution and circumstance. Nonetheless, our impression is that the concern is well-founded: tertiary-level study programmes seem to lack the overall quality required of them in the context of Portugal's position in the Europe of 1997. Nor, as already mentioned, were we persuaded that institutions, programmes, teaching and learning were sufficiently oriented to the need for greater relevance. This applies to the universities, but also to the polytechnics where we expected to find somewhat greater awareness of and emphasis on relevance.

The prior question, of course, is: What is quality? Is it quality of teaching -- and how is that to be defined and measured? Is it quality of the information imparted and its applicability to a first job and/or to life? Is it the quality of the graduate -- and how and when is that to be measured? Or the standard or level of knowledge and understanding reached? Most tertiary education administrators and teaching staff would perceive quality as including all these factors, and most would claim to have the ability to recognise quality even when few objective measures are available. As expressed by the review team visiting Australia for the OECD tertiary education thematic review (DEETYA and OECD 1997):

> Clearly quite difficult questions and issues arise in an attempt, on a nation-wide basis, to define quality, to make judgements about individual performance, to monitor standards and to introduce a regime of rewards and sanctions. Who is best placed to make judgements? Are there widely agreed and unambiguous criteria? What are the implications for the 'unsuccessful' teachers or those deemed to be 'successful'? What is to be done about weak or unsatisfactory performance? What kind of relationship, if any, should be established between funding bodies and institutions and should the performance of the latter be assessed against the stated criteria and funding varied accordingly? Should the goal be appraisal followed by reward (or sanction) or improvement and development of individuals and institutions? And so on.

Attention to quality along several tracks, in our view, constitutes a positive and crucial element of the present government's policy approach.

The Ministry and tertiary education institutions have undertaken an initiative to address quality issues. Launched by the Council of Rectors under agreement with the Ministry and under authority of Law 38/94 the initiative sets an important course for external evaluation. The evaluation system, following the Dutch model, is directed at ensuring the quality of "pedagogic and scientific performance." The system takes into consideration especially teaching, the qualification of the teaching staff, the research performed, links

to the community, the condition of facilities and equipment and the extent and nature of international co-operation. The principles applied to the evaluation are: autonomy of the evaluating entity; active participation of institutions; and hearings at which teachers and students can provide their views.

The evaluation of staff in universities and polytechnics will move forward in early 1999 when a refined instrument is expected to be available for institutions to use. As indicated above, performance is to be judged broadly, on teaching, research and community service. The evaluations can be used in decisions taken on promotions and career tracks. More generally, for recruitment and promotion decisions a jury is constituted to define the specific criteria to be used.

We encountered support from many parties within and outside tertiary education for these initiatives, and particularly for its reach to be extended beyond public universities and some public polytechnics to all providers, public and private. Such a comprehensive monitoring regime can play a key role in securing quality improvement as well as addressing matters of equity and of the long term role of private tertiary education providers. We wonder whether there could be value in establishing the evaluation system in a form which has sufficient autonomy from the institutions to preclude any perception of bias or self-interest. Thus, the current evaluation system could eventually be established as an agency or unit separated from the institutions and bring in interests in addition to those of the Ministry

It will be important that the evaluation system is accompanied by flexibility, scope and complementary measures needed to address the range of needs identified through the process.

- Admission processes should be seen as a means to identify the kinds of backgrounds which must be taken into account in the first years, as well as to assist aspiring students and institutions to make informed choices on the programmes which best match needs and interests. Admission is now based in equal parts on the outcome of the secondary school final examination and on marks obtained over the course of schooling and/or the institution's own examination (the latter, as approved by the Ministry). A pool of applicants is established nationally, and entry into individual programmes in each institution is subject to *numerus clausus*. However, as institutions establish the scores and criteria on which students will be admitted into specific programmes, the national competition has been made more flexible. Most public universities establish a minimum level of scores corresponding to the top 55 per cent of the pool. A number of public tertiary education institutions have set the minimum at the top 70 per cent. The private sector is much more sharply divided, with some institutions imposing relatively strict criteria and others being more open. The scores of students actually admitted depends on the number of places offered and the number of applicants. Applicants having minimum scores are placed in their first, second ... sixth choice or not placed, depending on the number of places available (*numerus clausus*) The variation in implied standards reflects a balance of interests: for the government, to guarantee tertiary education "for the greatest number in the best conditions"; for tertiary education institutions and faculties, to reinforce standards and to secure enrolment which provides funding; and for secondary education authorities, to strengthen the different streams and to improve standards.

- The Ministry should build on the progress made in upgrading the qualifications of staff in the universities and polytechnics by now directing attention to the specific qualities and contributions of those (and other) staff. Actions should be taken to enhance the teaching of all staff and, more specifically, to support those staff who are particularly effective in teaching to acquire additional skills which can further extend the reach and quality of that teaching, e.g. computer-aided learning and the techniques of teaching large first-year classes. In our view this more targeted approach should now be adopted as a natural complement to and consequence of the upgrading of qualifications and the evaluation of staff performance. Indeed, consideration should be given to accommodating a range of

'profiles', so that staff with Masters degrees who may devote more time to teaching will not be obliged to pursue more advanced, specialist research qualifications. Over time staff with only Masters degrees should acquire other relevant experience in industry, management or specialised research. Quality will thus emerge from quality leadership (from people, especially rectors and other leaders who have the statutory and administrative scope and vision to make a difference) and independent evaluation (and the feedback and healthy competition which this produces).

- Ensuring that each course meets its standards depends on teachers who are themselves active in their fields. In this respect an important means to promote continued development of staff is to foster wide contact with specialists in other institutions or in the wider economy and society, within and outside of Portugal. This implies mobility for the staff member concerned as well as for short- or medium-term recruitment from outside the institution, outside tertiary education and outside the country. Mobility to complete doctoral or similar studies outside Portugal has figured prominently in the strategy to develop tertiary education in Portugal; a powerful way to ensure that Portuguese standards correspond to European standards is for Portuguese teachers to continue to experience those standards for themselves. On the other hand it is apparently less common for Portuguese academic staff to move among public tertiary institutions (although, as noted earlier, public university staff have played key roles in administration and teaching at polytechnic institutes and private institutions) and more common to appoint and promote internally. Incentives might be introduced to encourage mobility (e.g. salary premia if a promotion is secured through mobility, rather than within an institution; the recruitment and promotion process itself could be made more transparent (via wide dissemination beforehand of the specific criteria defined by the juries for the posts concerned). Moreover, although there apparently is scope to appoint highly qualified foreign scholars for fixed if not longer periods, it is not common to do so -- partly owing to the more limited pool of those with facility in Portuguese. In our view, increased opportunities to invite recognised specialists to spend time in Portuguese institutions would also improve the quality of teaching.

- Tertiary-level students in all types of institutions require teaching informed by research and should have access to state-of-the-art research findings. We judge this to mean that those responsible for teaching these students should be active in their fields, indeed "researchers" in the broadest sense of that term. We fully recognise that the universities play an important role in the research system and that this role needs to be supported, even as it adapts to the realities of new types of structure for research which depend less on institutional centres and more on wider networks comprised of researchers and facilities in a number of universities and non-university settings. But, even though teaching should be informed by research undertaken by teachers themselves, it does not follow that a good researcher is a good teacher, especially in the first years of tertiary education. First years students require particular attention, and in our view the challenge presented by the range of backgrounds and needs of students seems not to have been sufficiently recognised. Difficult subjects, particularly in the first years, require inspirational teachers and sympathetic learning and support services.

Links to Employment

There is limited data available on the employment of graduates. The overall unemployment rate stood at 7 per cent at the time of our visit, with lower rates in banking and services, including public services such as education.

This fails to convey the likely evolution of the jobs awaiting today's *licenciatura* candidates. In the past, public sector employment (including in education) was the principal destination of tertiary education

graduates (Ministério da Educação and Compta RH 1992). In the 1990s, underlying development in the economy has led to a relative increase in employment in the private sector. The smoothness of the continuing transition to new graduate employment destinations will depend partly on developments in the economy in terms of the strength and composition of demand and partly on the volume of tertiary education graduates and the knowledge, skills and dispositions profiles they present on the labour market. The development of financial and commercial services in the late 1980s and early 1990s opened up a wider range of employment opportunities. However, during our visit, we were informed that unemployment of graduates is now rising: the number of *liceniados* registered with Job Centres in 1997 exceeded 20 000; one year earlier, it was roughly 10 000. Even if this year-on-year change owes more to short term developments concerning labour demand and supply, tertiary education graduates will likely contend with less certainty and stability in employment and careers. As expressed in the Danish background report prepared for the team undertaking the tertiary education thematic review of Denmark: for students, both "opportunities and risks are greater than they used to be."

In Portugal, as elsewhere, it is important to look separately at the areas of ultimate employment and careers of public university graduates by field of study, of polytechnic institute graduates and of their peers completing programmes at private institutions. The employment experience of graduates of polytechnic institutes and private institutions is difficult to analyse, because the development of programmes in these sub-systems is recent and highly varied according to their location and orientation. Employment surveys show that, between 1983 and 1989, it was in the service area above all that polytechnic programmes sprang up and led to employment. It would seem important, if industry in the export sector and in small enterprises in particular are to make use of and benefit from graduates with tertiary-level qualifications, to encourage and enable the development of the polytechnic institutes across a wider range of fields.

While relevance with regard to the needs of the labour market, economy and wider society is not an explicit criterion in the evaluation process for tertiary education, the Ministry aims to set up a system to monitor the integration of graduates into the 'working world' (a broad, encompassing term which we feel is quite appropriate) and to create job placement units in tertiary education institutions. At several institutions we understand that the students themselves (through their associations) are establishing job banks or organising seminars and workshops so that students can learn more about what is being sought by employers and acquire some of the specific, job-related skills likely to facilitate transition into employment.

Our view is that employer bodies could make a useful contribution by undertaking their own studies and analyses, in co-operation with unions, professional associations, institutions and the government. Such co-operation and analyses could lead to a kind of forum for much needed debate on these issues and developments which, in turn, can lead to actions from each of the respective parties. In Germany, for example, similar exchanges have led industry representatives to call for shorter courses, for more practice-oriented teaching and learning, for stages in enterprises during or at the end of study programmes and for special kinds of dual-system training. Other structures or arrangements for drawing on such views may be found in France, the United Kingdom, Japan and Belgium (Flemish Community). This is not to suggest that the employers' views should prevail. Rather, these views need to be more carefully integrated into efforts within tertiary education to refine and revise curricula and to form part of a dialogue in which institutions and teaching staff themselves are invited to articulate their views on the relevance and quality of the teaching and learning taking place within existing study programmes. That dialogue is fostered already in many polytechnic institutes and private institutions and, increasingly, in public universities, through advisory councils and the engagement of teaching staff with recent practical experience. These approaches could be extended more widely, to study programmes in the basic disciplines as well as those specifically identified as professional or vocational in nature.

Institutional Autonomy, Governance and Management

Decision-making, management and the role of government in tertiary education continue to evolve in line with developments in the Portuguese economy and society. In the years following the revolution of 1974, a decree-law outlined the rules of democratic management of faculties. At the same time, the legal authority of the rectors was gradually increased by way of delegation from the government. The autonomy of the institutions is established by law, conferring different degrees of autonomy on the public universities in 1988 (law 108/88) and the polytechnics in 1990 (law 54/90) and the private institutions in 1994 (law 37/94).

Public universities are set up as public, corporate bodies, enjoying statutory, scientific, pedagogic, administrative, financial and disciplinary autonomy. They operate as centres for the creation, transmission and diffusion of culture, science and technology which are integrated into the life of society through study, teaching and research. The University Autonomy Act enabled the public universities to organise themselves, to create their own statutes and to run their own operations through elected individuals and bodies; specifically, a rector, university assembly, university senate and administrative board. The university assembly is made up of representatives from the teaching staff and the students, both represented in equal proportion, as well as 'ex officio' members. It approves the university statutes and appoints the rector. The Act gives considerable autonomy to the university, extending to the creation and running of study programmes. Control is assured through rules and processes required by the Ministry.

The Law of Management and Autonomy (Law 54/90) gives the public polytechnics a somewhat lower degree of autonomy than that enjoyed by the universities. Nonetheless, the form of self-management is similar: polytechnics are run by elected individuals (including their presidents) and bodies. The Scientific Council includes staff members with Masters degrees. Under Law 37/94, the rules set down for the structure, status, decision-making and advisory bodies of private institutions are similar to what is found in comparable public sector institutions. Private establishments come under more comprehensive control than given in the autonomy statutes, being covered by legislation for all private entities. However, public institutions are subject to the same oversight even if not specifically set out in the law. Private institutions must have their study programmes approved by the Ministry of Education.

On the face of it, the statements of autonomy in these laws would be welcomed in tertiary systems in other OECD countries. Yet, those in the institutions believe autonomy is more apparent than real. The government, in their view, retains strong controls through various means. In its self-evaluation report, the University of Lisbon notes that the establishment of ratios for teaching staff/student and teaching staff/non-teaching staff has greatly limited the scope for autonomy in recruitment and deployment. This university's self-evaluation report also notes that there is "no room for genuine selection of students by the universities". The report goes on to say that during the past eight years universities had very poor financial support.

Somewhat paradoxically the autonomy actually experienced by individual teachers (especially those with tenure) appears to be considerable. As in several other countries participating in the thematic review the scope of senior administrators to exercise robust management is constrained by the autonomy statute, more specifically, by the powers conferred on assemblies and senates. The tendency is for universities to operate more as a collection of faculties rather than a coherent institution. This applies more to the older public universities than to regional universities, polytechnic institutes or private institutions. The judgement of the OECD review team in Germany could apply in some measure to Portugal: "the requirements of the Law (i.e. the legal framework under which the tertiary system operates) and the

accountability of higher educational institutes are in some respects in contradiction; some features of the freedom become dysfunctional."

Rectors presently lack the scope to manage in a way which ensures accountability throughout their institutions. Accountability here refers not just to the use of resources, public and private, but also an accountability to students in matters of education quality, the content and relevance of degrees and diplomas, the provision of learning support and so on. The challenge to address problems in this area is evident; the means to do so perhaps more wide-ranging. A key element in any strategy, however, is to build up the capacity and scope for senior administration to take decisions which directly influence teaching. In our view the issue is a balance between autonomy and accountability: autonomy where it matters -- to be free of coercion and in issues of freedom to research and publish -- and accountability where it matters -- to meet the legitimate expectations of students, other stakeholders, the government and society in a cost-effective and responsible manner.

A bill on management flexibility would remove the more specific oversight of staffing levels and allocations but also of assets and finances. This places an even greater premium on the capacity for institution-level management, which in Portugal as in a number of other countries participating in the thematic review, remains insufficiently and unevenly developed. Particular circumstances may explain why some institutions have been able to develop effective administration and managerial structures and community and employer input and support. Much could be gained from examining the conditions and arrangements in such institutions, as a means of widening the dialogue on accountability, quality and responsiveness and the Ministry's own role in supporting all institutions to develop means to be responsive and accountable. The approach taken in France is relevant here: the Ministry is supporting the development and exercise of such expertise and roles through its contracting policy, the use of independent external advisors, continuing engagement in quality evaluation and other institution-wide assessments and a forum for the exchange of experiences and new approaches to identified institutional problems.

There is much to be done, and in this respect Portugal is not alone. According to the OECD review team in Japan, " ... the most pressing issue in the reform of tertiary education ... centres on the quality and relevance of what is taught and how it is taught. ... [O]ne problem in this respect is the conservative tradition of the highly compartmentalised institution whose component parts have a marked degree of autonomy and separateness from one another". To recognise the problem is to start toward its resolution, and the initiatives underway provide a good basis.

Costs and Financing

A high priority has been given to mobilising resources, promoting equity and securing efficiency. Public funding is now seen as a key strategic means to those ends. Public funding for tertiary education has increased significantly over time: from Esc 52.6 billion in 1990 to Esc 121.1 billion in 1996. Although associated with the increase in student numbers, funding increased more rapidly than did students (2.3 per cent per year vs. 1.6 per cent per year). Yet, overall funding remains low in comparison with other OECD countries, with public tertiary education expenditures in Portugal accounting for 0.9 per cent of GDP as compared to an average of 1.5 per cent for all countries reporting data (see Annex table A.3). The universities, in particular, note that funding for research has been weak (2 per cent of overall public funding), although funds for research come to universities from other Ministries and sources. They also point out that salaries remain relatively low. The Ministry of Education's responsibility in this area mainly concerns public institutions and more specifically their current operating budgets and capital projects. The task has been to estimate through the application of formulas based on staff-student ratios

(applied to teaching and non-teaching staff) in specified fields, and from these, the funds required to provide instruction for the projected number of students. We come back to the funding criteria below.

Under recently enacted legislation, the Ministry now bases funding and resource allocation on a tripartite relationship among the government, the institutions and the students. For its part the government provides baseline support for current operating costs as well as investment costs, allocated in such a way as to incorporate quality criteria and to take into account balanced growth for the system as a whole as well as new strategic areas for development. Through contracts of reasonable length (but covering more than one year) the Ministry aims to provide assurance of continuity of funding and to drive coherent, clear development of the system as a whole. Levels of public funding rest, in the first instance, on possibilities within the state budget.

To improve the financial and resource base, students attending public tertiary education institutions are also expected to participate in funding through payments established as "an accessible sum". Although tuition and fee policy has changed course several times in the 1990s, public university and polytechnic students in 1995 and 1996 paid a nominal fee. The new legislation has introduced an annual fee in the amount of the minimum monthly wage, or Esc 56 700 (1997). The amount is modest, representing perhaps 10 per cent of instructional costs. Additional financial aid support is being provided to students from families with limited means to help them meet the costs. This policy action is in line with steps taken in some -- but not all -- OECD countries, including some in Europe where there has been a long standing tradition of 'free' tertiary education. In some of those countries student charges have been imposed at modest levels and student support arrangements have been rationalised. Such a new policy orientation has been justified on two grounds: first, there clearly are earnings, employment and non-pecuniary gains to individuals who have acquired tertiary-level qualifications and, second, it is hard to justify fully subsidised tertiary education opportunities for the few, paid for largely by those who do not participate. Although the arguments are not beyond debate a compelling reason for student participation in the financing of tertiary education is practical: in the wake of rapid increases in demand, provision of high quality programmes for the increased numbers is likely to be possible only with additional contributions from students and third parties.

The establishment of tuition fees in public tertiary education complements a unique approach adopted in Portugal to meet growing demand and its costs. As aspirations increased more rapidly than public resources or capacity in public sector institutions, the field was opened up to tertiary education initiatives of private providers. Demand was not deflected, but accommodated even if not by public institutions. Such an approach poses distinctive questions about public funding of tertiary education.

One issue is the link between the expansion of a fee-supported private sector to accommodate demand and the distribution of students across study fields. Annual fees in private tertiary education institutions are on the order of Esc 300 000 to Esc 350 000, which generate sufficient income to support instruction and related infrastructure in a wide range of study programmes in 'book sciences' but not laboratory sciences and technical fields. When enrolment in private institutions accounted for a small fraction of the total, such an emphasis could be accepted as a reflection of individual choice having little impact on the overall composition of the supply of graduates. The private sector, accounting for more than a third of overall enrolment, now has a substantial impact on the composition of supply. Do such considerations figure in discussions about the future evolution of tertiary education programmes, public and private? The issue is a current one in Japan, where public universities are seen to carry the primary responsibility for study programmes in the hard sciences and engineering. Policies, including those concerning the allocation of public funds, come into play.

A related issue is how the costs of tertiary education are shared by students from different backgrounds in different types of institutions. Here, we believe there is a need to consider a possible inequity when students pay full fees in private institutions because they were unable to secure a place in a public institution owing to a lack of capacity. A new policy in Australia to permit institutions to admit a limited number of full-fee students on top of the number of publicly-supported places is an example of one response. Other considerations apply in such fields as medicine, where health policy may call for externally-imposed restrictions on entry into these study programmes.

A more global approach is to strengthen financial support for students who could not participate without some assistance. This is the strategy now being pursued by the Ministry. Student support will be extended widely through gradually equalising support for all tertiary-level students, regardless of the programmes or institutions in which they enrol. At present, about 11 per cent of all students in public institutions and 3 per cent of students in private institutions receive public scholarships. The new policy will lead to relative gains for students enrolled at private institutions. An unknown is the costs of extending student support in this way, and how those costs will be met. The government also has under consideration a system of student loans, to be repaid on entry into and during employment. The approach has been introduced in a number of countries, without apparent unfavourable consequences for the system or students concerned. But, such approaches are new in many countries and, in others, the experience with the consequences of borrowing on a large scale is only now emerging. In Portugal, as elsewhere, the effects and costs of loan or deferred payment schemes would need to be carefully monitored.

The overall funding regime could be taken further, by moving public funding to an 'output' or 'performance' basis. Public funds would be available to institutions on the basis of student progress, examination results or completed qualifications and support would be provided to students for a limited number of years of study. Institutions under such a regime could be afforded even greater flexibility in the use of resources (e.g. funding provided as a lump sum, based on a relative scaling of costs), thus freeing up the rigid criteria used in the present funding formula. Denmark, Finland, Sweden, the Netherlands, Germany and the U.S. have adopted elements of such an approach to varying extents; it could be useful to study the experience in these countries to see which elements could be adapted within present structures and regulations in Portugal and how those structures and regulations bear upon the effectiveness of alternative financing approaches.

Whatever the specific funding approach, the level of funding generated through non-public sources and its heavy concentration in one set of institutions, gives rise to particular challenges with respect to the overall steering of the system as a whole. On the other hand it must be recognised that the level of private funding is impressive, with Portugal among a small group of countries toward one end of the public/private continuum. It has permitted a remarkable quantitative expansion in participation, arguably highly responsive to the interests and backgrounds of the students entering programmes in these institutions, at a time when public resources could not have been made available as rapidly and in the same volume. The conditions under which such an approach can complement public provision and extend opportunities must include, among others, the capacity for individuals and other third parties to finance the payment of the necessary fees.

Finally, we were very interested in the organisational model of the University of Minho, which is based on the notion of "schools" or "institutes". The various departments are responsible for formulating and dispensing "custom tailored" teaching which meets the specific training needs of other departments, schools or institutes. Termed a 'matrix' model, this management approach is common in U.S. and Canadian tertiary education institutions and can be found in other OECD Member countries as well. The emphasis in this type of organisation is put on flexibility and quick reaction. Above all, we appreciated the ongoing systematic reassessment of the objectives and content of each course, which in more

traditional institutions rely primarily on the initiative, ability and academic freedom of the individual teacher. We cannot generalise, of course; but, we were impressed with the extent of differentiation, depth of initiative and scope for realising greater efficiencies and increased responsiveness that such an approach permits.

Conclusions: Reinforcing New Policy Directions

We find tertiary education in Portugal to be in a particularly dynamic and vibrant phase, against a background of rapid and substantial growth in participation. The Ministry has taken innovative steps to expand the tertiary education sector to meet demand, and the institutions, their staff and other parties have responded to the challenges. That the government encouraged the development of polytechnics and private tertiary education institutions to accommodate the growth and diversity of demand is, in our view, laudable, innovative and in many respects distinctive. This is not to say that the expansion and diversification have occurred without some difficulty and unintended consequences. Our point here is to draw attention to the important commitment to ensure that young and mature age adults have the chance to pursue tertiary-level studies if they so desire, and the equally important awareness on the part of young people, their families, mature age adults and the wider society of the need for, and value of, wide opportunities to continue studies beyond secondary education.

The Ministry's Guideline Document for Higher Education Policies, *Autonomy and Quality* (January 1997) provides a clear, well-reasoned analysis of the pressures on tertiary education in Portugal and proposes a set of actions which could be taken to address them. Thus far, growth has been met through complementary development of different types of institution and flexible forms of organisation, governance and financing. The government aims to maintain this general strategy, while seeking to further strengthen and consolidate the diversity represented in the present structure. Generally, this strikes us as promising and reasonable. A 'strategic triangle' involving autonomy, financing and evaluation, within which the proposed reforms and modifications converge, has been advanced. The consolidation envisaged should address some unhelpful developments in terms of the low number of science and engineering courses, the lower perceived status of programmes in the polytechnic institutes and the need for improvement in quality throughout the tertiary education system.

In sum, we applaud the intentions, and see our comments and observations as support for the directions set out. To realise the aims there are a number of targets for policy action. Promising steps have been taken in a number of areas.

A question might be posed: how much growth? What is meant by the intent to provide tertiary education "for the greatest number"? To respond to the demands of all those aspiring for tertiary education implies provision which embraces more than one route and in more than one form. However, such diversification should not mean that programmes, teaching and learning are detached from state-of-the-art research and isolated from the needs of the wider economy and society. The country needs a diversity of talent, and a diversified approach to the educating and skilling of that talent.

It is in this light that weakness throughout primary and secondary schooling represents an important target for policy. The current focus on three or four 'pillars' around which all efforts to improve lower levels of schooling could be marshalled is well conceived. New efforts are being launched at the level of pre-school education and in poor, disadvantaged and immigrant areas where failure rates are exceptionally high. To the extent these efforts succeed the aspirations for tertiary education will increase and, further, the 'profiles' of aspiring tertiary education students will become even more diverse.

Thus, it is important to strengthen the links between secondary and tertiary education, presently weak (especially with the universities). A newly-implemented examination at the conclusion of secondary education may begin to reinforce the bridges as the examination results will indicate (even imperfectly) what students have acquired through the completion of secondary schooling and reveal to tertiary education institutions the range and level of entrants.

At the tertiary level, owing to limited innovation in teaching and learning, it is the 'average' student who appears to be poorly served. The best students have access to the best programmes, and certainly to their first choice. Those with lower scores enter the second, third or lower choice programmes in public institutions; or they will sometimes choose, instead, to enrol in a private institution, again as a second or third choice, in order to follow their preferred field. In this respect polytechnics also appear to be second or lower choices for aspiring students, at least in the big cities and regional centres.

As we have noted quality concerns figured prominently in our discussions in the institutions and also with employers and with students. The evaluation system, following the Dutch model of self-evaluation complemented by external review, is to be extended from public universities to polytechnic institutes and private institutions. As the system is developed further consideration could be given to increasing the involvement of business or industry and drawing out more clearly the ways in which programmes, teaching and learning are enabling students to develop the kinds of abilities and dispositions now needed for work and adult life. The evaluation system should evolve into a flexible approach with transparent aims and processes and, importantly, with independence from the institutions and programmes coming under its oversight.

Considerable effort has been made, with substantial external support, to upgrade the quality of the staff, through increases in the levels of qualifications (to the doctorate). Although this effort has succeeded (if unevenly), there have been two unintended consequences. This emphasis in the development of staff has given weight to research criteria in recruitment and promotion, which has weakened the attention given to teaching and learning. Moreover the emphasis on academic qualifications has reduced the scope for experienced professionals to contemplate recruitment and careers in tertiary education institutions (especially the polytechnics). The implementation of more broadly-based evaluation of staff performance and the use of broadly-based -- and, ideally, transparent -- criteria in recruitment and promotion of staff should contribute to the development of staff profiles in line with the strengthening required for programmes, teaching and learning in tertiary education.

To ensure a link between tertiary education and the labour market the Ministry aims to maintain controls over the creation of new courses and over the continuation of courses. Our impression, however, is that current provision under such controls -- in the universities and the polytechnic institutes -- generally reflects more traditional fields and methods and applies most readily to younger students. The aims of a more responsive and diversified provision developed through innovation at the programme or institution levels, so far as we could determine, have not been fully met. The question is raised most clearly for the polytechnic institutes. They could do more to fill in the gap between secondary education and university courses, particularly in the form of vocationally-oriented programmes. There is a positive base on which to build: polytechnic students seem to be pleased with their programmes, the expertise and support of the teaching staff and the opportunities afforded by their studies. It is notable that private institutions are serving significant numbers of mature age students and that some universities have opened up to the wider regional and national setting through the introduction of 'stages' and teaching staff-enterprise links. The 'blurring' of distinctions between institution types may be found in all systems, and it could be taken further. Here, the possibilities now afforded to polytechnics to offer the *licentiatura*, as the second cycle of a two-cycle programme of studies, should help to improve the attractiveness of programmes and provide a wider margin for their development. If coupled with greater recruitment of experienced

professionals and more fully-integrated use of stages and work-based learning, such policies should permit polytechnics to develop distinctive, clear and transparent profiles of mission and method which meet the needs and complement what is offered by other tertiary providers.

The prominence of private institutions is a distinctive feature of tertiary education in Portugal and potentially an enormous asset. Private institutions offer interesting examples of innovation in programmes, teaching and learning, partly as they seek to be responsive to the needs and interests of students paying full fees and partly to hold costs (and fees) down in a highly competitive environment. The Ministry in its new policy framework seeks to consolidate the strengths in private tertiary education through the application of quality assurance measures in the sub-system and through the boosting of social support for students following study programmes in private institutions. We support these directions while calling for an approach to quality assessment which recognises diverse aims, approaches and student interests and backgrounds.

There is a general issue of governance, autonomy and accountability. Funding and employment regulations give very little scope for the management of resources at the institution level. Institutions, we were told, are required to 'move money up' to meet fixed staffing commitments. In fact, there is limited 'formal' scope provided for the exercise of autonomy. As in most systems, however, institutional leaders do have some room to take steps at the margin (with external partners) which could have important, positive effects for teaching and learning. This kind of vision is not uniformly evident, although we met a number of senior institutional administrators who had found ways to innovate in a tight resource and regulatory environment.

Public funding is set to increase at the same time as the government has established modest fees in the public sector. The approach seems balanced and realistic. It is essential, however, to proceed with the strengthening of social support to students, whether in public or private institutions, to help those from families with limited means to meet their share of the costs of participating in tertiary education.

There is an evident need to build up the information and analysis capacity, especially for tertiary education. Although Ministry staff and senior managers in tertiary education institutions are well-informed, ongoing and detailed analyses of student learning, the experiences of graduates and new demand from mature age adults needing to develop or upgrade their abilities and knowledge in the evolving economic landscape will be important to permit informed judgements on quality and evaluation criteria as well as refinements in policies. In this respect, the issues of drop-out and quality in general seem to us to merit closer and further study.

Policy actions will have much on which to build, not least the enthusiasm and commitment of students and of many staff and administrators. The students with whom we met, in universities and polytechnics, both public and private, were focused, articulate and prepared from their points of view to 'tell it like it is'. Above all, they are committed to Portugal. Their perceptions of tertiary education and its role in the economy and society accorded with many of our own impressions. They were well attuned to international trends at this level of studies, qualification and employment. We also met teaching staff and administrators who were equally realistic and committed to change over the medium-term, and to the education of their students in the present.

That difficulties and gaps remain, therefore, is not necessarily owing to bad intent; rather, the conditions, incentives, sanctions and approaches which will combine to foster the kinds of changes needed have to be put in place. That is an appropriate role for government, but also for increasingly autonomous tertiary education institutions and for other concerned parties.

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Annex

Table A.1 Changes in population aged 10 to 19, 1985-94

	% change population
Mexico	6.5
Turkey	4.3
Finland	1.5
Canada	0.7
United States	0.5
Ireland	-1.0
France	-8.2
Korea	-10.8
Portugal	-10.9
Switzerland	-11.1
New Zealand	-11.4
Spain	-11.5
Sweden	-11.6
Japan	-12.2
United Kingdom	-15.3
Australia	-16.4
Austria	-16.4
Norway	-17.9
Germany	-19.6
Netherlands	-19.7
Denmark	-20.0
Italy	-23.2
Average	-10.7

Data are taken from *United Nations World Population Prospects, 1950-2050* (1994 Revision).

Source: OECD (1996), Education at a Glance - Analysis, Table for Figure 1.3.

**Table A2. Net enrolment in public and private tertiary education by age group, 1985-95
(based on headcounts)**

	Ages 18-21			Ages 22-25			Ages 26-29		
	1985	1990	1995	1985	1990	1995	1985	1990	1995
North America									
Canada	25.5	28.9	37.9	9.5	11.4	21.7	3.0	3.4	9.2
Mexico			.9			.5			2.7
United States	33.0	36.2	34.7	14.5	17.1	20.7	8.2	8.5	10.5
Pacific Area									
Australia			29.8			14.1			8.9
Korea			34.1			16.3			3.4
New Zealand	14.9	20.8	28.6	9.6	13.8	13.3			7.2
European Union									
Austria			12.0			13.3			8.0
Belgium	24.5		40.7	7.2		16.5	1.5		3.6
Denmark	7.4	7.4	8.9	16.3	17.9	22.6	8.2	9.3	11.2
Finland	9.3	13.6	17.5	17.3	20.7	27.4	7.9	10.2	12.9
France	19.4	24.6	34.2	10.0	11.8	17.7	4.3	3.9	4.6
Germany*	8.8	8.5	10.6	15.5	15.9	17.0	8.9	10.4	11.4
Greece			32.9			10.6			3.2
Ireland**	15.2	20.3	27.2	2.8	4.3	15.5			
Netherlands	14.4	17.9	23.2	11.9	13.4	18.7	5.7	4.7	5.6
Portugal	5.8	m	17.9	5.4	m	15.7	2.3	m	5.9
Spain	14.9	21.2	25.6	10.6	13.5	17.5	4.0	4.5	5.5
Sweden	7.9	8.7	13.0	11.3	11.4	16.6	6.5	6.1	7.5
United Kingdom	m	16.1	25.8	m	4.7	9.3	m	m	4.8
Other OECD									
Czech Republic			15.9			8.0			2.1
Hungary			11.9			7.9			2.3
Iceland			7.9			20.3			6.9
Norway	8.8	14.4	17.5	13.2	18.9	23.6	5.7	8.2	10.0
Switzerland	5.7	6.4	7.7	10.6	12.1	14.7	5.2	6.4	7.2
Turkey	m	7.4	10.1	m	4.6	7.4	m	2.3	3.4
Country mean			21.1			15.5			6.6

Note: Data refer to all enrolment, not just first years.
* break in data series between 1990 and 1995.
** data for 22-25 age group include ages 26-29.
Sources: OECD, Education at a Glance (1997): Table C5.2b; OECD, Education Policy Analysis (1997): Data for Figure 5.1.

Table A.3 Expenditure on Tertiary Education
% of GDP

Australia	1.7
Austria	1.1
Belgium	..
Canada	2.6
Czech Republic[1]	0.8
Denmark[1]	1.3
Finland	1.8
France	1.1
Germany	1.0
Greece	..
Iceland[1]	0.7
Ireland	1.4
Italy	..
Japan	..0.9
Luxembourg	..
Mexico[1]	0.7
Netherlands	1.4
New Zealand	..
Norway	1.5
Portugal	0.9
Spain	0.9
Sweden	1.6
Switzerland[1]	1.1
Turkey	0.8
United Kingdom[1]	0.1
United States	2.4

[1] **Only for public institutions**
Source: OECD Education data   base.

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