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THEMATIC REVIEW OF THE FIRST YEARS OF TERTIARY EDUCATION

COUNTRY NOTE: JAPAN

This Country Note was prepared by a Secretariat-led review team as input to the first stage of the OECD Education Committee's Thematic Review of the First Years of Tertiary Education. The views expressed are those of the review team. They do not commit the OECD or the countries concerned.

A comparative report for the first stage of the thematic review will be published by the OECD in the last quarter of 1997. Inquiries may be directed to OECD Publications.

Introduction

This document is one of ten individual country notes prepared in the course of the OECD thematic review of the first years of tertiary education. It serves two purposes: first, as a data source for the internationally comparative report of the overall review; second, as report to the Japanese Ministry of Education and Science (Monbusho), on the findings of a four-person team of reviewers which visited Japan late in 1995.

The Thematic review of the first years of tertiary education has been undertaken by the OECD Education Committee in the period 1995-1997. It will culminate in a Committee debate on the findings and subsequent publication of the comparative report. A series of country-based seminars and an international conference are part of the planned follow-through. In undertaking the review, the Education Committee aimed inter alia to:

- analyse the directions of policy associated with the expansion and diversification of tertiary education experienced across the OECD in recent years,
- develop new perspectives and concepts to inform and strengthen policy analysis,
- consider possible future policy directions in which member countries would have a common interest.

The terms "tertiary education" and "first years" require explanation. By "tertiary" we mean a stage or level beyond secondary and including both university and non-university types of institutions and programmes. The "first years" are those leading to an initial qualification recognised as of value on the labour market.

In preparation for the visit to Japan of the OECD review team, the Ministry of Education, Science and Culture (Monbusho) prepared a most useful background report with statistical tables and provided the team with other data sources. A programme of meetings and visits to institutions selected to represent the range of tertiary institutions, public and private was arranged. We are most grateful to Mr. Naoki Murata, Head of the Higher Education Division, and his colleagues in Monbusho both for the initial preparations and for their efforts to ensure a successful visit. Likewise, we appreciate the readiness of our interlocutors whether in government ministries, advisory and representative bodies, or institutions, to assist us to understand the situation as it existed and directions envisaged for the future. We have also had the benefit, since the time of the visit, of further information and comments on an earlier draft of this report.

It is evident that major changes have occurred and are underway in Japan in a very large and complex system of tertiary education. Inevitably on a review visit of relatively short duration only a very small sample of institutions could be visited and there would be many viewpoints in the community at large which the reviewers could not encounter. Nevertheless we hope that this report will prove of value to Monbusho and to those responsible for the continuing development of tertiary education in Japan.

Context

A Leading Motif in Japan

Since World War II, and in reality since the Meiji era, one of several leading motifs for Japanese society and economy has been "catching up" with the West. Success is evident in cultural changes which have been analysed by many commentators, Japanese and foreign, and in quantitative growth in many aspects of life, notably the economic sphere. The reviewers scarcely need to add their testimony to these numerous achievements. In the field of education, growth has meant increasingly high levels of

participation and efficiency in upper secondary, and then tertiary, education. Thus Japan ranks among the leading nations in completion of full secondary education and entry to tertiary education.

Table 1. Ratio of upper secondary graduates to population at typical age of graduation by type of programme, 1994

(first educational programmes)

	Total	General	Vocational and Apprenticeship
Australia	m	67.6	m
Belgium *	96.7	33.9	64.4
Denmark *	82.3	45.3	37.0
Germany	88.5	22.6	65.9
Japan	92.1	67.4	24.7
New Zealand *	63.9	39.0	24.8
Norway	102.0	41.7	60.2
Sweden	74.6	25.6	50.5
United Kingdom	m	m	m
United States	73.6	m	m

Note: * 1993 data.

Source: OECD, Education at a Glance, Paris, 1996: Table R11.1.

Growth has also meant in Japan as in other societies a number of structural or qualitative changes, planned or unexpected in society and culture: changes in the way of living, working, and, in recreational and leisure pursuits.

"Catching up" as a motif is no longer relevant; Japan leads in the world in many respects. Its achievements in the economic sphere are manifold: levels of production and productivity; range of products; innovation and uses of technology; high per capita income; a well educated work force; the expansion of international trade. All testify to a dynamic economy and society. In many branches of the arts and crafts, too, Japan is at the forefront, combining tradition and modernity in a unique way. In education, the consequences of "catch-up" may not all be positive. Some Japanese authorities informed us, that "catch up" has entailed "transplanted knowledge" and students have been given "questions with answers". The current emphasis in educational policy on independence of mind, creativity and problem-solving, discussed at some length in this report, is a response to this perceived problem.

Economic Success

Despite the slowdown in recent years and current difficulties, Japan's economic performance and strategy remain impressive and it is steadily assuming a major role in all aspects of international affairs. Among the educational factors underpinning the post World War II "economic miracle" are: a remarkably high rate of secondary school enrolment and world class standards of attainment by students; enterprise-

based training; a very large and varied system of tertiary education; and high levels of individual and family investment in education. These and other trends have been fostered and encouraged by a stable political environment and a capable, pro-active bureaucracy which works in close association with all sectors of the economy and society.

**Table 2. Net enrolment in public and private tertiary education by age group, 1985-94
(based on headcounts)**

	Ages 18-21			Ages 22-25			Ages 26-29		
	1985	1990	1994	1985	1990	1994	1985	1990	1994
North America									
Canada	25.5	28.9	40.3	9.5	11.4	22.8	3.0	3.4	9.6
Mexico			m			m			m
United States	33.0	36.2	34.9	14.5	17.1	20.9	8.2	8.5	10.4
Pacific Area									
Australia			29.3			13.6			8.5
Japan			m			m			m
New Zealand	14.9	20.8	30.9	9.6	13.8	13.9	m	m	7.2
European Union									
Austria			12.0			13.3			8.0
Belgium			37.4			14.7			3.8
Denmark	7.4	7.4	9.1	16.3	17.9	22.1	8.2	9.3	10.9
Finland	9.3	13.6	16.6	17.3	20.7	27.3	7.9	10.2	12.2
France	19.4	24.6	33.2	10.0	11.8	17.0	4.3	3.9	4.6
Germany	8.8	8.5	11.2	15.5	15.9	17.2	8.9	10.4	10.3
Greece			36.7			10.2			2.2
Ireland	15.2	20.3	30.5	2.8	4.3	7.9	m	m	2.4
Italy			m			m			m
Luxembourg			m			m			m
Netherlands	14.4	17.9	22.1	11.9	13.4	18.4	5.7	4.7	6.2
Portugal	5.8	m	19.3	5.4	m	13.4	2.3	m	4.8
Spain	14.9	21.2	25.4	10.6	13.5	17.5	4.0	4.5	6.2
Sweden	7.9	8.7	12.3	11.3	11.4	15.3	6.5	6.1	7.2
United Kingdom	m	16.1	23.6	m	4.7	8.4	m	m	4.4
Other OECD countries									
Czech Republic			14.8			7.6			1.5
Hungary			11.0			6.9			2.9
Iceland			7.9			18.8			6.8
Norway	8.8	14.4	17.1	13.2	18.9	23.6	5.7	8.2	10.4
Poland			14.6			10.8			x
Switzerland	5.7	6.4	7.6	10.6	12.1	14.2	5.2	6.4	7.1
Turkey	m	7.4	10.5	m	4.6	7.2	m	2.3	3.2
Other Countries									
Korea			30.8			16.3			2.7

Note: Data refer to all enrolment, not just first years.

Source: OECD, Education at a Glance, 1996, Paris: Tables P6.1, P6.2, P6.3, P6t.

The Japanese people have every reason to be satisfied with and to take pride in this catalogue of achievements. Yet critical changes of direction are occurring. These include, notably, the impact of economic globalisation, more diverse international roles and the shift from manufacturing to service industry. As one consequence there are new fields for graduates to enter and new opportunities and challenges for them to take up. Hence a growing interest in a new kind of graduate profile in which individuality, enterprise and critical-mindedness are prominent.

The Changing Structure of Employment

In 1991, professional and technical workers accounted for 11 per cent of all employed people in Japan, a figure expected to rise to more than 17 per cent by 2010. Percentages of those employed as craftspeople, production process workers, labourers in industry and in agriculture, forestry and fisheries will correspondingly decline while skill levels are likely to continue rising. A second change of major significance is the move of many export industries offshore, reflecting among other factors the high-cost wage structure and the exchange rate of the Yen. Third, the long-established system of job tenure, lifetime employment and seniority, which implied a continuing growth in each sector of activity, is under increasing question with the need for structural adjustment. Greater use is being made of temporary employees, work forces are being slimmed down and there is less on-the-job training. For the first time, institutions of tertiary education have seen a relative decline in the demand by enterprises for graduates. Nevertheless, we were informed of a continuing demand for those with a strong intellectual background, well-developed competences and knowledge which are applicable in the workplace, a capacity to utilise information sources, and a readiness to go on learning. Tertiary graduates still enjoy an advantage in the employment market relative to holders of high school diplomas.

The Japanese public authorities and industries are quite conscious of the strengths of their distinctive employment structure, and those in particular which relate to social cohesion, collective working methods, high quality performance and so on. At the same time, the economy has proved to be more sluggish than was anticipated. Moreover, at the time of the review visit we were alerted to a growing feeling of cultural and social malaise in some quarters. One leading commentator goes so far as to refer to "a stagnant age", even something of a cultural crisis pointing to the need for new directions. Rapid changes were seen by some of our interlocutors as entailing a loss of identity. Such concerns are not specific to Japan; as in other countries, many aspects of an established way of life are coming under question. Also while some commentators draw attention to fractures in the surface structure others point to a solid and enduring sub-structure of values and beliefs.

The traditional sense of belonging to a community, of corporate identity and common purpose is still valued but increasingly recognised as insufficient. Hence the interest in individualism and initiative at all stages in the educational process and as a basis for future development in occupations. In our discussions with university leaders, but also top employers the legacy of educational practice was often challenged. The rapidity of change in society, the economy and culture and a considerable degree of uncertainty regarding future directions were given as reasons for education to become more flexible, to take on new roles and enter into new relationships with other sectors of society. Rising unemployment is of concern, even though by international standards, Japan continues to enjoy considerable relative advantage. But, the issue as presented to us was less unemployment per se than the changing nature of work and the skills graduates would need to possess.

**Table 3. Standardised unemployment rates in OECD regions
(per cent of total labour force)**

	1983	1990	1991	1992	1993	1994	1995
North America	9.7	5.8	7.2	7.9	7.3	6.5	5.9
Japan	2.6	2.1	2.1	2.2	2.5	2.9	3.1
Central and Western Europe	9.8	6.9	7.4	8.1	9.5	9.7	9.2
Southern Europe	11.4	11.6	11.4	12.5	14.1	15.3	15.4
Nordic countries	4.2	3.0	5.0	7.8	10.9	11.1	10.3
Oceania		7.0	9.6	10.6	10.6	9.4	8.1
Total of above countries	8.6	6.1	6.8	7.5	8.0	7.9	7.6

Source: OECD, Employment Outlook, Paris, 1996.

The economy could perhaps continue to develop along similar lines to those in the past, including through Japanese enterprises established in other countries. On the other hand, it may be that Japan, having moved so far towards intensive industrial production, a markedly hierarchical but cohesive occupational structure and a keen sense of competitive performance, may not go much further in that direction. In particular, some aspects of life have seemed to outside observers to have been neglected or only grudgingly acknowledged, for example the value of considerably greater leisure for all, the position of women or the quality of urban and industrial environments which economic growth has put under extreme pressure. The growth of such leisure pursuits as tourism, fashion and popular culture, expectations of new roles for women in professional life, and the ageing of the Japanese population presage considerable changes in life-style.

The uncertainty being widely expressed about future orientations of society at the time of the review visit will presumably be succeeded by new directions and priorities. It provides an opening for a serious national debate in which the tertiary system of education could well play a more active role than it appears to have done hitherto. Indeed, the reviewers considered this period of uncertainty, unease and fundamental transition as an opportunity, indeed a challenge, to the tertiary system to take rather more seriously than it has done as yet the need for a deep reappraisal of its purposes, structures, procedures and management. The reshaping of the undergraduate curriculum, especially the general education components, might be seen as one means of developing in students new kinds of cultural awareness and social competence. We had very interesting and varied discussions along these lines, for example at Sophia University, the University of Tokyo and Tokyo Gakuen Women's College.

Ageing Population

There are other features of the changing socio-economic and cultural context relevant to our inquiry. The population is rapidly ageing, due to a declining birth rate and increased longevity. In 1970, 7.1 per cent of the population was 65 or older; by the year 2000 this figure is expected to rise to 17 per cent and to increase to 25.5 per cent by 2020. A direct effect on tertiary education may be a considerable

drop in 18 year olds who could enter universities and colleges, from more than 2 million (1992) to 1.2 million in the year 2010. It is a matter for debate not only whether this demographic trend will be compensated, in part at least, by even further increases in the already high participation rates, but also how the tertiary education system will adapt to this quite drastic change of environment. Thus far, education has had a very sharp youth focus, even though there is substantial provision for older age groups. Reduced numbers of 18 year olds is expected to mean more competition among providers. There will be an opportunity, indeed a need, for the institutions to open doors to more older students. Policies of lifelong learning are taking hold and will strengthen if institutions are ready to make innovative and flexible learning arrangements for skill enhancement of an ageing work force and for a widening of the educational experience of the whole community.

Table 4. Demographic trends in Japan (Size of the 18 year old cohort, tens of thousands) and Access to Tertiary Education (universities, junior colleges, colleges of technology, special training schools, as percentage of the age groups)

1965	1970	1975	1980	1985	1990	1995	2000	2005
195	195	159	158	176	204	177	151	136
17	27	39	50	52	54	63	--	--

Source: OECD Activity 'Towards Mass Tertiary Education: Access and Equity', Country Case Study -- Japan, 1995.

The Changing Social Context

The Japanese people, having attained one of the world's highest rates of per capita income, are faced with increasing problems many of which will require large infrastructure investments if progress is to be made in solving them: housing; traffic; commuting time; pollution; long-working hours and short holidays; rising costs of education; and -- according to some recent surveys -- a sense of frustration over personal values and life-style. Questions are being raised about the compatibility of distinctive Japanese work structures, relations and decision-making procedures with the emerging globalised environment in which the country's leaders intend that Japan should play an increasingly active role. "Internationalisation" is a double edged sword. Japan inevitably is a key player in the globalised economy. To improve the country's performance on the international stage, policy makers are placing increased emphasis in educational policy on foreign language competence, computer literacy and familiarisation with international communication and on student and teacher exchanges. The wish to be a leader in a globalised world is paramount; but the strong sense of national identity and tradition will have its impact on efforts to be truly "open to the world", to adopt a global rather than a resolutely Japanese perspective. Many universities and colleges are introducing classes in foreign languages and computing skills. The government has a policy to double the number of foreign students between the years 1990 and 2000. Many courses and course materials have a distinctly international flavour not only in the sciences and technology but also in the social sciences and humanities as for example in the general education programmes. These and other steps which we discuss below are directed at strengthening the internationalisation of Japanese education and society.

On the domestic front, while the traditional family remains a powerful source of personal identity and social solidarity, changing family patterns have over several decades witnessed the decline of the unchallenged authority of the father, and increased participation in work and out-of-home leisure activity by the mother. For many children, the challenge to succeed in a highly competitive environment and to enter a prestigious tertiary institution is felt at an early age: as frequently observed by both Japanese and outside observers, this creates distortions that affect the whole system, resulting from the prestige and power of certain highly selective schools, colleges and universities and from the pressure of the end-of-school examination. Hence the widespread and, it appears, growing "Juku" attendance, whereby children from an early age are coached and prepared for examinations in these private, fee-paying, out-of-school centres. This, combined with a traditional respect for and love of learning for self-fulfilment, makes the overall educational process crucially important for everyone. Many reforms have been introduced as efforts continue to be made to increase the overall educational value of the examination system, as distinct from its screening function.

As in all advanced economies, education is increasingly seen in Japan as a major, if not the major, factor of development. Not only is the proportion of a generation participating in tertiary education among the highest in OECD (in 1995 62% of all eighteen year olds entered some form of tertiary education; 30% of the age cohort were admitted to four-year institutions), Japan possibly ranks first, if efficiency aspects (low proportion of dropouts, length of study time and costs) are taken into consideration. Demand for tertiary education, for access to university in particular, may well continue growing in relative terms. So far, parents have been able and willing to pay fees for tertiary studies, but as we indicate below this could change.

Fees for study often represent a substantial proportion of household incomes. According to evidence provided for the OECD study on individual demand for tertiary education, there has been a decline of individual rates of return in line with increased levels of participation. (But there is also a drop in returns to secondary education). While there is no clear relationship between participation and household income, increased fees and slower growth in incomes are bound to create strong pressure on family resources.

Mass participation, at the advanced levels already reached in Japan, could conceivably lead to opposite reactions among families and students. If certain kinds of tertiary education were no longer to lead to the most attractive professions and careers, interest could turn more towards vocational courses, for example in Senshyu Gakkou, the institution which links more directly to specific occupations, or to participation in non-vocational tertiary education as a form of consumption. On the other hand, the pressure of numbers could result in demand for access to the most prestigious courses of study or universities further intensifying, in order for the individual to maintain a position in the queue or for enterprises to continue to recruit people with high levels of ability. However, this level of demand has occurred within a rather stagnant employment framework. Japanese data indicate a rapid drop in the number of white collar jobs, particularly in clerical and related areas, which used to attract a high proportion of graduates. The impact of these trends, particularly changes in demand by enterprises for higher education graduates, is not clear at this time. If people become dissatisfied with the trade-off between increased costs and decreasing return there could be a significant change in participation rates. To be put in the equation, however, is the very strong and long-established cultural commitment to the personal and social value of education.

Recent Trends in Educational Policy

The subject of this report is "The First Years" of tertiary education, not the whole system. But, in reviewing the Japanese context, mention must be made of trends and policies affecting the whole system. The national concern to strengthen the Japanese research profile, especially in science and technology, is high among national priorities. It has resulted relatively recently in increased public funding for research in higher education institutions. Graduate schools have been expanded. An appropriate response to the national research agenda, these trends will have many effects on the undergraduate programme. It will be important to ensure that the increased number and scale of funded projects in the universities in particular does not produce that unfortunate phenomenon, evident in some other countries, of a flight by the academic community to research and its rewards, to the neglect of undergraduate teaching. Monbusho's advisory University Council has made a number of important proposals for the improvement of the educational as well as the research function of the institutions, to which we return below.

Another major policy objective is to develop the idea of lifelong learning for all people, an objective which is still far from realisation in many countries. In Japan a high value is placed on learning throughout life and there is a solid tradition of enterprise training throughout the worker's career, from the bottom to the top of the hierarchy. The reviewers wondered whether the tertiary education institutions in Japan, as in a number of other OECD countries, have given more than very limited attention to meeting this need. However, we were informed that a gradual change is now taking place. For example, universities and colleges, many of which have had "open classes" for adults for many decades, are introducing special entry arrangements for adults and extending their non-degree activities in the day as well in the evening. As other countries have demonstrated, there is considerable scope for expansion of programmes for adults -- degree and non-degree. Enterprising institutions based on open entry and using flexible means of delivery following such courses could increase their capacity to handle financial and other pressures arising from shrinking enrolments among school leavers. We think that this dimension of education which clearly reflects a growing interest in the Japanese community could be taken considerably further in the rethinking and restructuring of undergraduate education.

The most important policy change, in terms of this review, is the attention now being given to raising the overall quality of the educational provision and students' learning experience. Such a trend gives rise to several issues and needs, many already quite familiar, and we now turn to these.

Changing Needs and Directions in Tertiary Education

Throughout our visit we were frequently informed that considerable changes is necessary, in both schooling and tertiary education. Emphasis, now that participation rates are very high and there is a demographic downturn, is not on further quantitative expansion but on qualitative improvement. This policy emphasis raises a question of more general interest: with more than half a generation in universities and colleges of some kind, should or indeed can their character and organisation remain the same? Can they keep their purposes and specificity? Can or should teaching continue to be organised around the established disciplines often taught separately? What are the new links needed between education and work, education and research, education and society? What impact will technological changes have and what goals will continue or evolve in response to the changing character of Japanese society and the economy? More generally what might be the balance between old and new and between vocationally specific and general education?

In relation to such questions, one key issue is the need for clarity at the institutional level about purpose and specific function in this era of change and uncertainty. A new profile of the graduate for the twenty-first century is needed. The University Council has encouraged all institutions to pay greater attention to their specific objectives and mission in far-reaching recommendations made in 1991. Standards for the curriculum were deregulated, providing more flexibility for institutions. Each institution has thereby been enabled and encouraged to define its own mission and goals and to improve the quality of its teaching and research. This freedom is of great value but it poses considerable challenges. For "first years" education, implementation requires collective, interdisciplinary efforts across faculties and departments and strong and thoughtful leadership. Good examples of which we encountered several, can be very helpful, and the Council and Monbusho have a role to play in drawing attention to such examples: improved communications within the overall tertiary system and between it and the wider world are needed. We were struck, in our visit to some institutions, by the lively debate on reshaping missions. It seems that the departmental/discipline tradition, with its origins in the pre-war influence of the Humboldtian ideal on the universities especially, makes such efforts difficult in practice. Nevertheless, a number of institutions are aiming to improve management through cross-faculty committees and enhancing the leadership role of the president. Interdisciplinary studies, as at Keio University for example, require support at the highest levels and systemic follow through in course planning and delivery including assessment of student learning.

We reached the conclusion, as others before us have done, that the strong selectivity of the educational system, culminating in the examinations for access to tertiary institutions, as well as the very specific graduate recruitment practices in Japan provide little or no incentive for change within institutions. The objective for many students and families is access to the best possible institution: it is often said that it is much more difficult to get in than, later, to obtain the degree. Recruitment to employment has also typically been based mainly on the prestige of the institution, rather than the specific competence or performance of the individual student. Each year, firms send job offers to institutions of their choice and students are certified for employment more than half a year before graduation. Thus in most cases, firms have been paying little attention to the content of studies, placing more emphasis on their own staff development services. Within this social context, neither students nor institutions have felt the need to examine and evaluate what has been taught or to take learning, as seriously as they might. We think that with changing economic conditions this is an important issue which requires serious efforts as part of the continuing educational reform agenda. Indeed changes are occurring as more students find their own job openings and some firms reduce their own role in training new entrants.

The Japanese authorities for several years have been conscious of the need for a wide range of reforms in the "first years" to match social demands and expectation. The current plan for the improvement of tertiary education has three main directions: the qualitative improvement of curricula, teaching and learning in the institutions; the promotion of research up to world class standards; and the development of lifelong learning. In our visits, discussions were mainly on the first, quality improvement. Two aspects of the reform measures now being taken deserve particular note. One is the autonomy given to institutions which in the past followed detailed instructions from the ministry about the curriculum. Obviously, taking initiative and defining the specificities of teaching and learning are not easy for institutions accustomed to different practices. The other is the emphasis on individualisation, with a view to developing more creative thinking and enhancing diversity of profiles among students and graduates. This may also represent a major departure from previous practices and it is likely to take considerable time to reach this objective. However, the reform movement has gained momentum and a number of changes have been achieved, among which, in a number of universities, is the evaluation of the course by the students themselves.

As noted above, changes are beginning to occur in the enterprise model of employment recruitment, and these have implications for curricula and teaching methods. Many students use

specialised magazines or alumni contacts to enter employment; others are recruited directly by enterprises. Some firms for example, no longer take the same interest in the name of the university candidates attended. Instead, they arrange interviews, seek records of achievement and in other ways are inching towards a more complex approach in personnel selection. The growing number of postgraduate students will also bring some changes. We return to this point below, when discussing issues of curriculum, teaching and quality appraisal.

The reform agenda is large and varied. Although its sources are numerous, its focus is to be found in the activities of the national University Council. Established in 1987 following the 1986 report of the Prime Minister's National Council on Educational Reform, the University Council advises Monbusho. The main thrust of its advice reflects deep concern about the quality and responsiveness of the tertiary sector. Identified weaknesses include: the remoteness of many of the institutions from the workplace, a tendency towards inwardness and opaqueness in their operations and the persistence of educational practices which stand in the way of critical and creative thinking and individual responsibility for learning.

These concerns reflect such traditional patterns of teaching in secondary schools as those leading to passive absorption by students and a focus on cramming for exams rather than continuous active learning. For tertiary education students, being accustomed to a regime in upper secondary education of preparation for examinations, the tertiary institution can be both a haven of rest and a place in which to continue learning through memorisation and imitation rather than creative problem solving. This, in turn, reflects a lack of a self-critical, evaluative culture in the institutions. Nevertheless, we had an opportunity in Chiba prefecture to learn about upper secondary schools which do their best to provide a real education, whereas "cramming" is left to the Juku. Moreover, many colleges and university administrators and teachers are challenging those widespread practices. Whether in a well known university, a junior college, a college of technology, or a special training school we were able to observe examples of teaching designed to foster student initiative, problem-solving and active, purposeful learning.

The criticisms are nevertheless widespread. They were made to us by prominent figures in tertiary education serving on the University Council, the Central Council for Education and the Council for University Chartering and School Juridical Person, by Japanese government officials, academic leaders and employers' representatives. They are not new, but are now being put in a context of reform measures designed to achieve more dynamic and forward-looking forms of undergraduate education. There does appear to be a real determination, after years of debate and discussion, to act along the lines which have been developed by the University Council. As noted above, the institutions are being granted greater autonomy and in return are required by the present Ministry standards to undertake more systematic self-evaluation of their curricula and teaching. A realignment is taking place through these self-evaluations by institutions, between a broad kind of general education which was introduced into Japanese universities following World War II and specialised discipline-based studies. The pre-war model assumed that general education, consisting of studies across a wide range of subjects, had been completed by the end of secondary schooling. In the post-war period, when some general education provision was required at the tertiary level, the curriculum came to be composed of two parts independent of each other, two first years of liberal arts education, followed by two years of specialised education. Some universities, Kyoto and Osaka for example, established new departments for liberal education, drawing on all the faculties; other designated one of the faculties, e.g. education, as the responsible body for liberal education. Other institutions set up cross-faculty committees which engineered new courses.

By whatever means, the first years of tertiary education have for the past fifty years, included some form of cross-, inter-, or multi-disciplinary study. Of the 124 credit points required for a degree, 36 were for general education, 8 for foreign language, 4 for physical education and 76 for specialised education. The significance of the recent reform is that now only the total, i.e. 124 credit points is required. This change has been aimed at providing greater flexibility of teaching and more effective co-

ordination of the curriculum to cope with new societal demands of the larger and more varied student body. Moreover, institutions have been enjoined to rethink their courses and programmes, to motivate students, to enable them to follow their own preferences and to engage directly with subjects they are likely to pursue throughout the four years of study. While it is too soon to make judgements, the reviewers were informed that, in spite of the acknowledged need for a revitalisation of the concept of general education, sometimes other directions were being followed. Instead of re-conceptualising general education to give it more student interest and to build new pathways into specialist studies, we were told that some institutions are simply launching straight into the conventional or well-established disciplines. Whatever is or may be of value in notions of general education is thereby lost. While several such examples were mentioned to us, monitoring of the reform by Monbusho indicates, however, that more than 80 per cent of institutions have revised curricula to improve the co-ordination of general and specialised education. It would be of considerable interest to the international community to have access to case studies of the different approaches. For their part, the reviewers were able to observe the endeavours some institutions are making. These include the design of wholly new programmes of orientation to academic education, through high level, interdisciplinary studies, project and group work which aim to engage students in active learning and the use of computer network to increase teacher-student interactions. As for specialised education, we saw very interesting examples - of highly advanced multi-media electronics at the Japanese Electronic College, and the pathways established for vocationally-minded junior high school students into technological education in the Toyota College of Technology.

It is widely agreed in Japan (as elsewhere) that standards of student performance and interest in their studies especially in the university need to rise through more active learning; they are expected to do so. Academic staff as a result will need to become more conscious and critical of their teaching role and more open to ideas about effective teaching. In addition to curriculum changes, one of the overall national reform objectives is to give greater attention to dialogue among students and between them and their teachers in small groups. Imaginative use of information technology holds much promise in this respect. The institutions are also enjoined to build and strengthen links with the wider community, not least through closer attention to the future needs of their students -- for appropriate employment, for continuing education in a framework of lifelong learning, and for a better understanding of the needs and requirements of part-time students. The pursuit by the sectors and the institutions of their own separate directions is to be complemented by improved opportunities for credit transfer and recognition of qualifications. For example, many institutions accept adult students on part-time courses and accept credits that students earn in other institutions.

Welcome as these trends are, they will increase pressure on staff and institutions which are already experiencing considerable difficulty. Practically all the envisaged changes are resource-intensive and tertiary education institutions in Japan over many years experienced serious difficulties due to financial constraints, somewhat alleviated more recently. We wondered whether the cost implications of the drive for qualitative improvement had been fully worked through and, in this regard, noted that the private institutions too are facing a new challenge. They need to make qualitative improvements in both their educational and research functions when their finances are quite constrained. We return to these points below, when discussing costs.

Behind the reform movement is not only a critique of the rigidities and conventions of much traditional teaching, but nothing less than a sense of renewal of Japanese society. This sense is well expressed by the national employers' association, Nikkeiren, in a comprehensive analysis of what they see as desirable directions for the future development of Japan. Nikkeiren called, first, for a new vision, central to which is the creative, energetic individual who is globally aware, competent in identifying and solving problems as they arise in the workplace, family or community and able to assume responsibility and show initiative. To achieve these qualities, students must, says Nikkeiren, work harder and with a greater sense of purpose. Institutions must set firmer and harder graduation requirements and staff and

students alike must move into a mode in which performance over a broad range of tasks displaces status and the culture of "getting by" with minimum effort. Individual employers, likewise, are enjoined to have a closer working relationship with the institutions, not merely that which results from the annual recruiting drive and the funding of projects. Accordingly, they and the institutions are called upon to include various kinds of experience during the period of study, e.g. work in firms, voluntary work and field work, practices that are now widespread in several of the countries participating in the thematic review. Monbusho is supporting several projects on experiential learning to give undergraduate studies a more practical character. In addition, the University Council suggests recruiting teachers with a more varied background including working experience outside academia.

The foregoing, although well in line with current reform moves in a number of other OECD countries, set a medium to long term trajectory of change in Japan. There must be a careful process of reflection, discussion, negotiation and a steady growth of both understanding and commitment. Lacking all this, it is recognised that good intentions and a positive sense of needed future directions will come to little. The reviewers, in accepting this argument, would nevertheless like to have seen more evidence that the institutions themselves are taking the more strategic approach that is required. There could be greater attention to the pace of reform since the changes sought relate to Japan's role in a rapidly changing world. One problem in this respect is the conservative tradition of the highly departmentalised institution whose component parts have a marked degree of autonomy and separateness from one another. Also, the reviewers were not always convinced that institutions have a clear view themselves of such reforms as recommended by the University Council including the guidelines on how to use their autonomy. In highly specialised institutions, there can be a risk of undue concentration on the short-term and the close-at hand. They, too, need to position themselves in relation to Forces in the wider environment, not only their own specialised sector.

Monbusho for its part is actively promoting reform objectives, insofar as they spell out specific changes in the institutional landscape. In encouraging institutions to assume greater responsibility for curricula, to focus on improved quality of teaching and learning, individual student needs, and self-evaluation by institutions (it is actively pursuing the agenda initiated in 1991). As we have already remarked, some private institutions may have difficulty in responding to the new requirements and this has prompted an interest in targeted financial assistance as both an incentive and way of providing a platform of support.

Change on such a scale, and for so many institutions concurrently, is extremely difficult. It is, accordingly, well understood that continuing effort will be required over many years. The University Council while seeming confident of the directions, was much less sure that an adequate pace of reform was being sustained. This impression was borne out by the reviewers in many of their institutional visits although there were notable exceptions in both the public and private sectors.

Key Issues

A transformation of the kind sought for, while the reasons for it are sound, gives rise to a number of issues which require careful analysis and concentrated attention. The reviewers do not pretend to have the detailed knowledge necessary for the resolution of these issues and in drawing attention to them, recognise that the Japanese tertiary education community is facing considerable problems of adjustment.

New Directions

Tertiary education is expected to "reform", inspired by a new sense of purpose. But whereas for half century and more "catch up" with the West was a reasonably clear overall goal, there seems to be no definite view of a new general goal or vision for the education sphere, or indeed the economy or society at large, other than that "something is needed". Educational development can, of course, proceed within a more limited framework than a general consensus about the future directions of the society. Indeed, the specialist nature of tertiary studies and the academic traditions that govern them have a purpose and momentum that are not likely to be deeply affected by very general statements about "the need" for new directions. Moreover, the challenge to be met at the institutional level is for each institution to prepare a mission statement, a set of objectives, and a programme of implementation. The institutions would thereby both contribute to a sense of overall direction and define their own distinctive character and role in making progress in that direction. These are difficult but by no means impossible challenges. Other countries participating in this thematic review are addressing them and, across the OECD membership, considerable progress has been made in a relatively short period. There is an evident need in Japan for better dialogue involving staff and students and stronger links between the University Council, the various national representative bodies and agencies, Monbusho and the institutions. Several of these links have been quite close in the past on a regulatory and financial basis and now need to become more strategic and policy-related and more interactive. In this connection, the University Council, for example, already plays a key role in reflecting the views of associations and institutions on reform policies.

The capacity of Monbusho and the central apparatus of councils to foster and support change is real but may need to be strengthened. Deregulation has brought about even greater diversification of institutions and programmes; such diversification has led the central level public agencies to concentrate on general strategies including financial ones and very general monitoring and follow up. At the same time, deregulation also may increase the need for each institution to be responsible for detailed monitoring and even orchestration of change. Most important, in the reviewers' opinion, is the goal of developing an institutional culture which at one and the same time is open to the outside world and ready to undertake and to act upon self-monitoring and evaluation. This is a combination of partnership in goal determination and priority setting, and self-regulation at the operational level. There is also value to be gained from increased inter-institutional collaboration of various kinds. Fostering a climate of institutional leadership to carry through reform is thus a key consideration.

As stated in the Japanese background report: "Each university is encouraged to define its own ideas and aims to develop various programmes as a whole". To improve teaching and curricula; to attain world class standards in both educational and research roles; and, by making tertiary education more accessible and flexible, to facilitate lifelong learning are commendable goals which do not, however, address important process questions. Our view is that, the goals having been formulated and the institutions encouraged to be more flexible, innovative and self-critical, the question of just how institutions are coping and the structures and mechanisms they are putting in place need to be carefully studied. In addition to the data Monbusho has of a quantitative kind on such matters as the number of institutions revising their curricula, we suggest there is need for a considerable enhancement of research and development strategies to deepen understanding of innovation processes and how to address barriers to change. Such knowledge would facilitate the policy dialogue between institutions, Monbusho and the major economic and social interests and, we believe, enrich and expedite the reform process.

Selectivity of the System

One of the problems noticed in the 1974 OECD review was the influence of the examination system and the routes it provided (for the most successful students) into the most prestigious universities, and the use made of those universities for recruitment purposes by employers. This practice continues and its influence remains strong. Despite the changes in recruitment practice by some employers, it was not clear to the reviewers that the official reform agenda is adequately addressing this problem -- if indeed it really is the intention to do so. As many commentators have noted, the impact of this extremely hierarchical and competitive system is felt at many stages, from pre-school, through primary and secondary schooling and into the tertiary stage. It is a case of the screening function of the upper secondary examination exercising a major determining effect not only on the structure of tertiary education and employment but on the total education system. It might have been expected, with the trend towards universal participation at upper secondary and mass participation at tertiary levels, that competition would have concerned a few leading institutions. Yet, it has extended to the whole system. Reforms have been undertaken to lessen what Monbusho in its 1995 annual report characterised as "the excessive emphasis that is placed on academic credentials" and in that report a variety of ameliorative innovations are described. The question is whether these are sufficient to address rather deep seated structural issues.

This is a complex set of problems which cannot be resolved by any one sector (education) or Ministry (Monbusho) alone since long entrenched social habits and attitudes as well as crucial structures in the society and economy sustain it. Specifically in the tertiary sector, students selected by the high status institutions may not feel any great need to work hard nor is there significant pressure on the teachers to modify their teaching as long as the students' career path is largely determined at entry rather than through the progress of study over the four year period. Nor are students and teachers in the less prestigious institutions encouraged to modify their behaviour when student career paths are likewise largely determined at the point of entry.

These comments on the impact of secondary school examinations and tertiary education's selection procedure are in the nature of generalisation and there are indeed exceptions. Individual students vary widely in their attitudes and motivations and in both secondary and tertiary institutions, we were given evidence of highly stimulating teaching highly individualised and student centred in secondary school and of quite different kinds ranging from individualisation through computer-based interactive networks for classes of several hundred, to intensive small group work to individually-tailored projects in tertiary institutions. Whilst acknowledging these achievements, our point is that continuing effort will be needed both centrally and in all institutions to develop the attitudes towards teaching and learning sought by the reform policies.

Employers have a greater role than may often be realised. Across the board and not only in isolated instances they would need to modify their expectations and change their behaviours were there to be any pervasive and lasting change. The institutions cannot act in isolation from the expectations of society. The direction being set is sound, but the pace of change seems to be slow. The reviewers note that traditional recruitment patterns, leading most, or at least the best, graduates into white-collar jobs in large firms may partly explain some inertia. Reduced employment prospects in the bureaucracy and large enterprises and increased ones in smaller firms or profit units might rapidly accelerate the pace of change.

We encourage Monbusho to play an even more active role in undertaking or supporting the necessary studies of effects of the reform initiative. Further efforts in promoting the dialogue from which a consensus might result seem to be required, specific changes, for instance in promoting greater "individualisation" of teaching, and in reforming assessment of student learning, will need further encouragement.

Employment Prospects

Specificities of some of the main employment practices in Japan have been mentioned above. They include life-long employment patterns in larger firms and the seniority principle and recruitment methods, whereby firms send jobs offers to institutions once or twice a year on the basis of their internal planning -- the so-called "regimental" recruitment. We have also underlined the remarkable achievements of Japan in terms of economic and employment growth and stability. And we have drawn attention to the limited interest of employers in the actual competences acquired by young graduates, as opposed to the institutions they came from -- a consequence of the seniority principle and the importance given to internal training. While all of these remain features of the system, on the one hand they are changing and, on the other, they co-exist with growing practices such as student-initiated job search.

The Japanese report to the OECD on individual demand identifies phases or cycles in demand from enterprises, according to changes in the economic context, technology or demography. Attention in that report was also drawn to variations in economic returns to various kinds of tertiary education. Both this report on demand and the Japanese background report for the present study, draw attention to further changes that could lead either to a new, transitory cycle, or to a more drastic transformation in employment, challenging in particular the seniority system. Mentioned in both reports is the possible decrease in white-collar office jobs. The Japanese occupational structures seem to give a prominent position to such jobs, in the service sector, but also within enterprises including at the headquarters. This segmentation of the external and internal labour markets is probably as strong as between the large companies and the smaller ones, usually their sub-contractors. And the recruitment practices for graduates reflect a correspondence between a degree and such jobs. This is difficult to assess on the basis of available statistics on destinations, but it is likely that less than one fifth go to production occupations.

In many countries, enterprises, as far as they can, are cutting office jobs, including among professionals and graduates. This, a cause of long-term unemployment among older workers and recruitment problems for younger graduates, is partly alleviated through downgrading, particularly in the public services. But it is difficult now to obtain stable qualified jobs. The sharp decline in clerical jobs in Japan may reflect this general trend and have major consequences for graduate employment prospects. Already this has mainly affected female employment, particularly for the junior college graduates.

This leads to another remark on the prospects for girls and women more generally. It is known that, traditionally, women in Japan have not been active in employment and take care of the house and family. However, girls and women have increasingly had access to tertiary education, first to the junior colleges, later on to the Senshu Gakkou and more recently to four-year colleges. Our visits gave the impression that junior colleges are now facing challenges as a growing number of women are entering directly into universities. This will require some repositioning on their part, and the adoption of a new, distinctive role. If employment difficulties persist or are aggravated, junior college students will increasingly seek access to the universities after their second year. This is not specific to Japan, but, whatever the policy option selected -- equivalence and transfer, development of a new two-year cycle, as in the universities of technology, etc. -- the number of women with a four-year degree will increase.

This should be considered as a major issue, not only in educational terms -- a further expansion of the university sector --, but in terms of employment prospects and societal change. The forthcoming wave of four-year degree women graduates will enter employment, at the time of a decrease in the male dominated professional office jobs. This may become a challenge for employment structures. Where are those young and dynamic women going to find work? Which professions, besides teaching and public relations, will be open to them? This is a question for the immediate future.

Science and Technology; Use of Computers

A specific issue in the Japanese reform agenda at the time of the review team visit is young people's reported lack of interest in and commitment to study science and technology. This topic is complex and of wider interest for a number of reasons. First, it has arisen in most countries taking part in this thematic review. Second, there seems to be no obvious or definite explanation for the phenomenon although hypotheses and surmises abound. Third, the importance of these subject areas resides in a number of strategic aspects of the modern economy and policy: these relate to the so-called knowledge-based economy in an era of rapid technical innovation, international competitiveness, and the changing international balance of power. Fourth, and not least, science and technology have taken a major place in human culture over this century and decreasing interest among younger generation raises broader questions over future directions.

In Japan as in other countries, it is claimed that too few students choose science and science-related subjects at senior high schools. Too few are said to engage in these studies at tertiary level. These and other perceived problems have been addressed by the Higher Education Bureau's Consultative Committee to Improve the Attraction of Science and Engineering Departments. In its 1994 publication "Improving the attraction of science and engineering departments and disseminating information about universities to society", the committee contrasted what it termed the "apathy" of young people towards science and technology with the scientific and technological basis of Japan's post-war wealth and prosperity. The committee called for a change in young people's attitudes and behaviour if such world-wide problems as population growth, environmental degradation, possible food and energy scarcity were to be addressed. Once again, the system of cramming for examinations in secondary school and the neglect of students' curiosity, individuality and creativity were condemned.

While the root of the problem of a turning away from science and technology is deep in the structure of education, society and the economy, some ameliorative measures seem possible. Those recommended by the Committee were very much in line with the general reform strategy and are therefore of interest to us in this review: at the tertiary level, courses should be more individualised, more engaging of students' interests, more future-oriented, more positive in the image they present of science and technology. The emphasis should be on employment prospects, on practical work including field work, on partnerships with industry and so on. These recommendations which challenge many traditional discipline-centred orientations might be extended to all subjects in the curriculum, whether popular to students or not. Even so they would be insufficient if action were confined to the tertiary level and if they were implemented without an innovative and creative spirit. We saw some examples of promising approaches to the promotion of science, for example in the revised programmes at Osaka and Tokyo Universities, but also others which seemed to offer little imaginative challenge to students. Subsequent to the review visit, we were informed that the new basic plan for science and technology supported by increased public finance, picks up these concerns, with ideas for making science and technology more attractive.

How mathematics, science and technology are taught and perceived particularly at secondary school level, is crucial. These subjects are considered to be and often are presented as "difficult". There is also the risk that lower marks in upper secondary schools will make admission to tertiary education more problematic. Students thus turn to subjects or streams that promise more secure access. At tertiary level many students also consider that scientific studies are much more demanding in terms of work load and effort.

These are perceptions which we found in a number of other countries. This does not mean that the issues are clear-cut but nor does it mean that they are intractable. There is no inherent reason why students in the same ability range find some subjects more difficult than others. Efforts in several countries are being made to improve the attractiveness of science and mathematics, for example through

improved and slimmed curricula, interdisciplinary, problem-centred approaches and innovative teaching. The current project on Science, Mathematics and Technology Education, by the OECD's Centre for Educational Research and Innovation, provides many examples of such practices at the school level.

In Japan it is difficult to interpret the arguments about declining interest and the proposals for amelioration. It is one matter to identify a declining level of general interest or of positive attitudes; another to pin-point shortages in specific technical areas; and yet another to draw out the implications for tertiary education of the fluctuations in demand e.g. for engineers. But perhaps an over-riding consideration is the incorporation of an understanding of the values, aspirations, procedures and achievements of science and technology into the common educational experience of all students. Often expressed as an ideal, this is rarely found in the practice of tertiary education except in those (few) systems which provide a strong science and technology base in their (obligatory) general education programmes. In this regard we were particularly interested in developments in some universities to redesign general education with this as one of the key of the orientations.

What are the incentives to students for increased attention to science and technology? In the evidence at our disposal there is little or no reference to employment outcomes and returns that would justify the investment by students in these fields as specialised areas of study. In a country known for its wealth of scientific and technological innovation in industry, we might expect significant shortages to result in vigorous action by employers and indeed a widespread emphasis on jobs in science and technology. We did hear that young people do not wish to go to "dirty jobs" (i.e. dangerous, hard), whether this refers to working on industrial sites versus offices, or to some kind of ecological distrust vis-à-vis science, technology and industrial production. Another concern, which is not new, is that many graduates in these subjects prefer to be employed in the service sector. This may be related to the prospect (or hope) for better salaries in that sector, possibly also to career paths being more promising in office jobs, than on industrial sites or R&D laboratories. Now, the popular topic is the "jobless society". Yet the vast majority of graduates including those in science and technology have jobs or are in home-making roles. In short, the picture seems rather volatile and confused; further study and analysis would be needed in order to clarify it. Economic difficulties and labour market fluctuations can give rise to exaggerated perceptions and short-term "remedies", but the lead time for soundly-based educational decisions is of a different order.

Another observation pertaining to science and technology (but not only to those fields) relates to the place of computers in education. Japan has a plan for computer literacy for all students in schools and universities and it is being vigorously implemented. The importance of this lies in the role information and communication technologies play in changes in work, production and even private lives in our time. Thus all students/young people should acquire something more than computer literacy, a feeling for the capacities the new technologies represent, their power and limitations.

Although we do not have precise data, we understand that dramatic changes in this area have been taking place in the past decade. In our visits to institutions generally, not only those specialising in science and technology such as the substantial developments in the Toyohashi University of Technology, but also, for example, Osaka University, we were sometimes highly impressed, as for example when intensive use, widespread provision, and open access by students to consoles and software were combined with innovative curriculum and pedagogical practice. However, there were other examples of much more mundane, uncreative uses of technology and pedagogy. Among the departments visited were some of the most recently restructured, often the most expensive in Japan and it is understandable that institutional leaders are proud to show them.

Although I.T. has great potential in enlisting the interest of students and, well-used, in engaging them in active learning, it cannot be regarded as a substitute for a more comprehensive approach to scientific and technological education (and other branches too) at all levels, from primary school to undergraduate education, particularly where mathematics is concerned. The problems were well identified

but the solutions will require continuing analysis and experimentation along the lines set forth by the advisory committee. The more important thing is how best to use the facility. It appears that hardware is often given priority rather than high quality software, although institutions are seeking a better balance. Moreover, we were informed of difficulties in recruiting the necessary support staff, in mobilising resources to maintain systems well and in carrying out what appears to be almost continuous upgrading. These problems are not specific to Japan but they have special salience give the speed and extent of the uptake of equipment, at least in the better-provided institutions.

We would like to have seen more evidence of imaginative, student-centred as distinct from routine teacher-centred uses of I.T. One notable exception, though, to this observation is the design and use of I.T. facilities at the new campus of Keio University, where I.T. was provided on an ambitious scale and undergraduate students encouraged to integrate its use fully into their studies. There were other examples of creative use of technology especially in the technical institutions; our concern is that there may be insufficient stress throughout the system on using I.T. to make breakthroughs in creative pedagogy and student-initiated learning within the curriculum.

Costs and Financing

In most if not all countries participating in the thematic review financing is seen as a crucial issue in the current economic context of strong pressures on public resources. In addition, further quantitative expansion is often expected, in relation to growing participation in those parts of upper secondary education giving access to tertiary level institutions. In many countries, new sources of finance are actively sought. Introducing or increasing fees or other charges on students is seen by many as inevitable, although free education often is a long tradition.

In common with several of the other countries Japan faces major and immediate issues of costs and finance. During the past decade, a major concern for the national universities has been the critical financial situation resulting from cuts in public expenditure -- and the level of public expenditure is much lower in Japan than in other countries. During our visit the need for increased public expenditure in higher education was reiterated by institutional leaders, industry and Monbusho and we understand that this view is widely shared in Japan. On the other hand we did visit some rich and well-equipped facilities including computer departments. We saw some impressive libraries and resource centres which exist not only in major universities, but also in junior colleges. The question is, how widespread is such provision? Low levels of public expenditure are being partly compensated by higher level of private contributions, tuition fees included. A consequence of this must be however, a considerable disparity of provision across the country.

The expansion of tertiary education enrolment reflects the increased overall wealth of the country and the value accorded to education, including the important contributions paid by student families. Three fourths of the universities are private, as are nearly all the junior colleges and special training schools. In public institutions, the private contribution is already high and may represent 15 per cent of the total income of the university; in the private institutions it is more than 50 per cent.

This of course represents a heavy burden for families. It has been calculated that for a medium income family, participation of one child at a public university may cost between 19 and 24 per cent of the family income, according to whether the student lives at home or not; participation at a private university, between 22 and 34 per cent. The representation of medium income families in the national, local or private universities is nearly the same: tertiary education can thus imply a major financial effort for families, particularly if they have several children in a junior college or university. There seemed to be a general confidence, however, that this was not a matter of concern; the fact that the Japanese are among those in the world who save more was mentioned as an indication of stability. Indeed, despite the percentage of tuition in household expenditure, there had been no decrease in overall demand at the time

of the review visit. Nevertheless, concern is mounting and for the private junior colleges we were informed of a coming shortage of applicants. This has materialised in these institutions and four-year universities. Meanwhile public institutions, whose fees are less expensive, are regaining popularity.

Public authorities as well as advisory bodies are highly conscious of and even anxious about the effects of the demographic decline on future enrolments on institutional resources. This is not unique to Japan, but since participation in Japanese upper secondary education is universal, there is little or no further increase in demand to be expected on this side. The entrance rate to universities is forecast to increase gradually in line with present trends but there is no strong pressure to push it up further in the coming years. The reviewers have some doubts about this perspective, considering the uncertain future of the junior college and/or rising demand from girls and women for university participation, but agree with the basic judgement.

The advisory bodies note likely decreasing resources for the institutions in particular private ones, in terms of less income through tuition fees paid by families. The size of the 18 year old cohort will decline from more than 2 millions in 1994 to about 1.2 million in 2010. This could very well create redundant capacity in tertiary education. Decreasing size is perhaps no harder to manage than would be a new wave of expansion (which is what some other countries are facing). But decreasing size does not mean a proportional decrease in costs and as already noted there will be difficulties in maintaining quality in the private institutions. Another concern is increasing tuition costs, which are to compensate for decreasing student numbers. Family incomes might be unable to meet them, particularly as the economic and employment situation is less clear than over recent decades. Will the consensus on sharing expenditure between state and families hold? Will the current interest of employers in more specific employment preparation induce them to reconsider their position and contribute in various ways to the stability and relevance of the system? This, of course, implies an improvement in the difficult economic situation of recent years and a considerable change in societal expectations about the source of funds. Overall, the various constraints and difficulties over resources pose question not only about sources of finance, but the ability of the system to effect the improvements being sought.

Quality and Relevance

The most pressing issue in the reform of tertiary education in Japan centres on the quality and relevance of what is taught and how it is taught. This, together with ways of strengthening the financial base of a predominantly private system, is the one which is of great interest to Monbusho and indeed to the reviewers. We have already noted efforts underway to identify quality issues particularly through curriculum review and evaluations of teaching. Relevance to employment has become of greater interest than hitherto. We saw good examples of education-industry partnerships to this end, at the Toyohashi University of Technology and elsewhere. There seem to be considerable scope, however, for extending industry-education partnerships across the whole system not only in highly specialised vocational institutions.

For the institutions, while there is considerable interest in quality improvement including the international quality assurance movement, in response to growing concern in society over institutional accountability, it is funding and the level of support to individual academics that were seen as more urgent concerns. There is a nice symmetry here: improvement of curricula and teaching are primarily matters for the academic institution, indeed for individual departments or sections and teachers; funding levels and overall policies for support are largely matters for national and regional authorities and for the governing bodies, trustees, etc. of private institutions. Clearly the two are closely interrelated but not to the point where the first is impossible without changes in the second. In other words, within existing policy frameworks, resource levels and support systems, there is scope for action focused on curricula, teaching

and arrangements for learning. At the University of Kyoto for instance, an interfaculty R & D centre for staff development and educational evaluation was established in 1994. Resources even when heavily constrained can, in part, be used for incentive purposes. That is, there can be greater targeting of resources according to performance criteria, so that additional resources, if they can be mobilised, would reward success in meeting reform objectives.

We are not suggesting anything resembling a full scale output or performance-based funding regime; rather that the reform objective of enhanced quality might be more consistently related to the resource flow. As it is, according to Monbusho statistics, there has been considerable forward movement, as indicated above, in the institutional review and revision of curricula, in class evaluations by students and in academic staff development. That more than 80 percent of universities have revised their curricula through internal review and evaluation procedures, in more than 40 per cent universities, student evaluations of their classes have been introduced, is impressive. Yet all agree that there is more to achieve.

Concluding Remarks

At the beginning of our visit and rather to our surprise, we were presented with a picture of Japan in a state of transformation: a time of great uncertainty in culture, society and education. The great material successes of recent decades commonly perceived to be based on directions set in Western societies were felt by many to be in some ways hollow: material gain, yes, but for what ends; social and cultural reconstruction but with which values in mind? It was suggested to us that a price paid for adopting the "Western model", is conformity, lack of creativity and a mechanistic adoption of ways of doing things that are handled in more experimental and flexible ways elsewhere. But the situation in education as we observed it is considerably more varied and complex.

The drive for reform represents a determination to move in other directions than some of those of past decades. Education, one of the great engines of modernisation, is therefore to be enlisted once again in the creation of a new society, this time for the twenty-first century. Specifically, the problems within the education system itself are to be tackled; more generally, education is to be a mainspring of the future knowledge-based society. But in a period when greater freedom is granted and a new sense of responsibility is expected of the institutions, reform must to a large extent come from within. This is why we have in this report focused on the readiness of the institutions themselves to respond to the new challenges.

Taking into consideration the very high participation rates and the continuing growth of demand, the status of the tertiary education sector and its innumerable relations, established or potential, with science, technology, social structures, political decision-making, the professions and industry, this is not an unreasonable expectation. But do the reform strategies really position the institutions to play the roles needed in the creation and mediation of knowledge, skills and ratios for the new age? Is enough attention being paid to change within the educational process? The emphasis being given to fundamental and strategic research, strengthening graduate education, continuing professional education, lifelong learning, and the review of undergraduate curricula and teaching are all important strategic moves. They are broadly understood by the institutions and self-motivated actions for reform have been taken but they still seem less than sufficient to meet the objectives that have been set nationally. It is for the Japanese authorities together with the institutions to consider whether there would be value in the further efforts we propose. The agenda might include: reflection on the structure of tertiary education, with its stratification and rather limited inter-sectoral relations; more comprehensive approaches to quality appraisal; greater emphasis on teaching and its recognition and reward in the academic career; more support and publicity for experiments in pedagogy; and further enhancement of the role of Monbusho in national level strategic planning and follow through. Additional steps seem to be required in order to implement the goals of

greatly strengthened relations between the institutions and the wider community, and the role of regional and local government. The growth of specialised studies of higher education and in R & D centres focused on improving as well as understanding tertiary teaching is a welcome trend.

These observations arise directly from the expectations that education leaders and those responsible, nationally, for the Japanese system of tertiary education themselves expressed. Any criticisms must be set against the massive strength of the system and the limitations on public agencies when the overwhelming majority of students are in private not public institutions. Thus Monbusho can foster, support, encourage but its powers to direct are limited. Legislation is the responsibility of parliament but its implementation in such a large, diverse system is by no means straightforward. This said, we wish to keep to the fore the widely recognised necessity for reform, for new ideas and structures.

The impressive array of advisory councils (the Central Council for Education, the University Council, the Council for University Chartering and School Juridical Person) have, individually and collectively, identified a very large agenda of issues and problems to be addressed. But the Councils themselves are not convinced that the pace of reform is adequate. In our meeting with them, it was said that fierce competition among institutions, which would result from the declining cohort of 18 year olds, would prove a great incentive for change. While this is likely it cannot be assumed that the change will be primarily a matter of improving quality and relevance, as distinct from improvements in the already high standard of marketing institutions and programmes.

However, quality education is not cheap education and the issue of comparatively low levels of public funding needs to be addressed. This is not a question of pouring money into ways of easing existing pressures and supporting present arrangements. We have suggested that incentives and rewards have a large place in the recognition and support of substantial, demonstrable efforts to strengthen the teaching of undergraduates. No distinction should be drawn between the public (national/regional/local) and private sectors in rewarding excellence; each should be supported through these different financing channels. Similarly, the support of individual students should be improved and there are various ways in which this can be done.

A key question for the future of tertiary education in Japan is its capacity to understand, adapt to and significantly influence scientific and technological change, the fundamental changes occurring in the economy as a result of globalisation and the serious quest now taking place for a new sense of values. These trends require students to be highly sensitive to changes in their environment and willing and able to adjust to them. Students from a passive, examination-based system of learning would be ill-equipped to meet these challenges, the sought for focus on well-defined student competence, on knowledge and skills that have a problem-solving orientation, on practical, useful knowledge and on individual initiative and creativity is essential. Japan could not expect to play the role on the international stage that it seeks, nor could its industries maintain their strength in an age of fierce international competition, nor its society continue to progress if it were to accept that the first years of tertiary education for large numbers of students are a mixture of relative relaxation or repetitive study for students and conformity by teachers to long established norms and practice. While the reality as we observed it is far more positive than these words suggest, there is enough evidence to support the case for change. We have suggested that, as is happening in some other countries, the profile of the graduate of the future should be redefined in line with the new requirements.

These comments may seem to be rather severe. However they echo views of many thoughtful critics in Japan itself. The tendency to rely for leadership and positions of responsibility on an elite selected through an examination-dominated system limits perception of the pool of potential talent and ability. Experience in other countries demonstrates that there are many actual or potential non-traditional students who have much to contribute. Work experience and child-rearing experience bring forth talents, motivations and interests that may never have been aroused in the traditional education system. In Japan it is recognised that greater diversity of students can help in vitalising educational and research activities.

The examination system has been modified and is capable of further improvement. The institutions need to adjust their requirements and expectations, their facilities and study environments and their methods of teaching and assessing student performance, not least to cater for students who have not come up through the conventional routes or who have not been selected on the basis of their work in entrance tests. Increased financial support is needed if these reforms are to take root.

It is important that standards be maintained but both Monbusho and the institutions will need to enter into a new phase, of redefining standards in the light of changing socio-economic needs and the aspirations -- and potential -- of individual students. Quality assurance should not be based on a rigid or restrictive view but should reflect the more open society that has emerged and the new dynamics of the globalising Japanese economy.

For such work to proceed, a well-informed discussion of learning outcomes defined in broad, cross-disciplinary terms and with definite relation to the wider socio-cultural-economic context is needed. For this purpose, student views and those of employers are highly relevant but also those of the professions, the voluntary sector and government. Hence our repeated emphasis on the value of dialogue and partnerships.

It follows that greater attention is needed to the articulation of tertiary education: internal with respect both to the unequal status of and uneven relations among different elements (universities, junior colleges, special training schools); external with respect to linkages with other sectors, especially employment. Although we encountered some impressive examples of counselling at the secondary school level, e.g. in Chiba Prefecture, this vitally important function needs to be better attended to in tertiary institutions.

Leadership is a key requirement. By leadership, we do not mean a formal hierarchy. One of the present difficulties is a legacy of a certain kind of authority that can induce rigidity rather than flexibility in decision-making. Responsible roles need to be widely dispersed, drawing on wide participation; this implies that management capabilities in each institution should be reinforced and be more effective, through enhancing the leadership of the President, Executive Board and Dean of faculty. This is vital in ensuring flexibility and responsiveness in decision-making. There is much to be learnt, in this respect, from those countries which have given special attention to new patterns of governance and management in institutions and fostered close partnership between education and industry: in curriculum planning, work experience, returning to study and industry-based part-time teachers. Such developments have had a vitalising effect on decision making, what is taught and how it is taught.

To achieve these objectives, perhaps there are three principal strategies, all of them in use yet capable of considerable development. First, is the need to strengthen and give a higher profile to the system of quality assessment with special attention to a national system of audited self-evaluation with rigorous follow up including the promise of training and support for tertiary teachers. Second, and in conjunction with greater attention to system-wide monitoring and evaluation, the financing of tertiary education should be reviewed with special attention to incentives for demonstrable performance. Third, more effective approaches to leadership procedures and management are needed, at both the institutional and the system levels. The requirement for enhancing management capability has been recognised by the University Council. This is crucial in the implementation of the current reform and in responding to the demand for greater public accountability. Moreover, enhanced management skills and leadership qualities will be needed to strengthen the capacity of institutions to clarify internal decision-making roles and the relationship within the institutions and across the sectors.

In making these suggestions the reviewers are conscious of the very considerable strengths of tertiary education in Japan and of the many difficulties in achieving the consistent and far-reaching changes that are sought in such a large and diverse system. Expectations have, however, been raised, considerable gains have been made and the determination of the Japanese people to achieve the

educational goals they are setting themselves offer every encouragement to our view that the present highly ambitious reform programme can -- and indeed must -- be effectively carried through. The scale of changes and aspirations in the society and the economy underline the fundamental importance of the new directions and qualitative improvements being sought for tertiary education.

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