

**Organisation for Economic Co-operation and Development  
Directorate for Education  
Education and Training Policy Division**

**THEMATIC REVIEW  
OF TERTIARY EDUCATION**



***KOREA***

**COUNTRY NOTE**

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*This report is based on a study visit to Korea in October 2005, and background documents prepared to support the visit. As a result, the report is based on the situation up to that period.*

The views expressed are those of the authors, and not necessarily those of the Korean authorities, the OECD or its member countries.

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## EXECUTIVE SUMMARY

As a result of expansion that has occurred over the last 20 years, Korea now has the highest rate of participation in tertiary education of any OECD country. This remarkable expansion, which has been achieved almost entirely through increased rates of progression of young people from upper secondary education to tertiary study, has been the result of several factors. These include the expansion of upper secondary education, whose completion rates are now also among the highest in the OECD. In turn these high completion rates have been made possible by very high levels of achievement in literacy, mathematics and science. Helping to drive both of these expansions in educational participation has been a traditional Korean reverence for education. Within the tertiary education system itself, much of the explanation for the expansion can be found in a loosening of the regulations governing the establishment of new institutions, and a heavy reliance upon private funding, the heaviest such reliance in the OECD.

The expansion has led to a number of challenges, which are the focus of this Country Note. These challenges, alongside demographic trends and a concern for Korea's international competitiveness, are among the factors that are now leading Korea to shift its emphasis from growth to quality improvement and consolidation. This Country Note is intended to enhance this emphasis. Its broad approach is to suggest a range of options that could be considered in addressing current challenges in tertiary education. This recognises that those in Korea are best placed to decide directions for the future.

A key challenge is to improve the connections between tertiary education and the labour market. Part of this is a concern within Korea to address what has been termed "a crisis of over-education", but to do so in a way that does not reduce young people's opportunities to undertake tertiary study. We suggest a number of steps that might be taken. These include: a tighter control over the types and levels of qualifications that can be offered by institutions of particular types; a more precise specification, through the creation of a national qualifications framework, of the characteristics of and outcomes expected from qualifications of different levels; requiring unmet demand in the labour market to be demonstrated before new programmes can be established; improved co-ordination between the several Ministries responsible for tertiary education; stronger industry involvement in setting the content of study programmes; strengthening existing initiatives to create internships and work-based learning; improved career guidance in secondary schools; more flexible opportunities for transfers among fields of study and among institutions; the establishment under government auspices of a forum in which improved dialogue between employers and tertiary institutions can take place; and incorporation of the parallel system of licensing exams into the graduation requirements for degrees.

Whilst conceptions of quality vary widely in Korea, in broad terms we favour a reduced concern with institutional status and prestige, and greater attention to quality in teaching and learning and research, as well as the development of better outcome indicators and the development of a culture of evaluation. The development of a comprehensive national quality framework, encompassing institutions that are governed by all Ministries responsible for tertiary education, both public and private, would be an important initiative. We support the establishment of an independent national quality assurance agency for tertiary education, and we make some suggestions on how such an agency might operate. Underpinning all initiatives to improve quality there is a pressing need for improved data on the basis of which quality can be assessed and publicly reported. An important aspect of quality that should be given more attention is the quality of teaching and learning, and we suggest that indicators of teaching quality be included in future

performance appraisals. We are, of course, cognisant that a shift from traditional Confucian approaches to teaching in Korea, in which the teacher is seen as an expert whose role is to impart knowledge, is not a simple proposition. However we encountered good examples of the use of more active and engaging teaching methods designed to develop the types of independent learning skills that both many tertiary staff and many employers believe will be important for the future. We believe that it will be important to encourage, and help to disseminate, such initiatives.

Enhancing the quality of Korean tertiary education, and improving its responsiveness to the labour market will, we believe, necessitate both improved systems for data collection and use and a strengthened culture of evaluation. It will also require thought being given to the ways in which the system is regulated and governed in order to improve its flexibility and to allow market-like mechanisms to operate more effectively. We support the moves that have been made to enhance institutional autonomy. We encourage a reduction in the number of separate programmes for matters such as student loans, and an associated consolidation in the number of separate divisions within the Ministry of Education and Human Resources Development. We advocate the adoption of a developmental, or “soft touch” approach to the regulation of the system, in which central agencies encourage regular co-operative review of institutions against agreed indicators, provide increased technical assistance to institutions to improve performance and meet agreed objectives, and support them in doing so by providing improved data for the judgement of performance and for increasing the public transparency of the system. The development of a national qualifications framework is another important aspect of new approaches to system regulation in order to enhance quality and responsiveness. Options that we suggest to support new approaches to regulation include broadening the skills and qualifications of the staff of central agencies, the establishment of regular review meetings with institutions to discuss goals and performance, and the creation of a national council for tertiary education to assume responsibility for enhanced data collection and dissemination, as well as for advisory and consultative roles.

Korea has taken important steps in recent years to concentrate and focus its research efforts, and we support these. A distinctive feature of research and development in Korea is the strong part played by companies. In the context of a national concern to improve the contribution of research and development to economic performance, this raises key questions about the role that tertiary education should play in national research policies. We believe that the role of universities in the overall national R&D effort would be enhanced by a strong focus upon basic research, and by a recognition that a key role for universities is the training of future researchers through post-graduate and doctoral programmes. We suggest that this will require a stronger concentration of doctoral programmes in institutions that have demonstrated research strengths. While there is currently a desire to increase the number of Korean universities that are of world standing, we suggest that a better use of scarce funds might be to enhance specific areas of research, and particular programmes to train researchers. However it should also be recognised that the creation of “world class” universities will require more than an injection of research funds. Also important are the granting of enhanced autonomy to institutions, including a capacity to offer more differentiated salaries, and the creation of an entrepreneurial culture and visionary leadership within institutions. We also support the strengthening of networking among institutions in order to improve research performance.

The rapid expansion of tertiary education and recent concerns to improve quality have been associated with issues of equity receiving somewhat lesser prominence, although concerns for equity and fairness have certainly been important in the design of a number of key policies such as the “three nots”, and in putting in place a wide number of loan programmes targeted at particular groups. Evidence from the OECD’s PISA survey shows that the impact of family background upon 15 year-olds’ performance is among the lowest in the OECD. The expansion of tertiary education in Korea would certainly have enhanced opportunities for the children of low income families to take part in tertiary study. There is, however, an association between family background and the types of institutions that young people enrol in, with those from low income families being more likely to attend the lesser prestige institutions. We

support recent government encouragement for institutions to broaden their selection criteria as one way of addressing this issue. We also suggest the gathering of improved data on the relationship between family background and course completions. Gender differences in tertiary participation in Korea are relatively high, and are linked to the overall role of women in Korean society and the labour market. Recent initiatives to promote gender equity in tertiary education are steps in the right direction, and we support their continuation and expansion. Existing arrangements for fee waivers and loans, designed to promote equity, appeared to us to be too complex, and they could benefit from simplification and consolidation. We also favour the introduction of a limited range of financial grants for particular target groups. We encourage the investigation of an income-contingent loans scheme, covering both tuition fees and living costs. We suspect that existing policies to encourage regional equity through limiting enrolments in the Seoul area are likely to be less effective than policies to better co-ordinate educational initiatives with regional economic development.

While large numbers of Korean students study abroad, the number of foreign students in Korean tertiary institutions is very small, and the presence of foreign institutions in Korean tertiary education is very limited. We encourage the creation of wider partnerships between Korean institutions and foreign institutions, subject to the development of improved systems of quality assurance and qualifications that are applicable to both.

We suggest a number of ways in which connections and linkages between different parts of Korea's tertiary education system, and its constituent institutions, might be strengthened. These include: a further broadening of the selection criteria for tertiary admission; new mechanisms to improve the transition from secondary school to tertiary study; improving opportunities for transfer among programmes and institutions, and in particular opportunities for transfer from college to university; strengthening the role of colleges, including through enhanced transfer opportunities, a national qualifications framework, and improved quality indicators; continuing existing efforts to promote institutional diversity; and strengthening opportunities for lifelong learning, particularly within the college sector. We also suggest that there might be advantages, in order to strengthen the coherence of the system, in formalising the distinction which exists in practice between the three main sectors of the system – colleges; universities with little or no research involvement; and research universities.

We conclude this Country Note by noting a number of common issues that have emerged in our discussion of the above challenges: the transition from quantity to quality; the divide between theory and practice; the roles of market and non-market mechanisms in steering the system; priorities in the allocation of public resources; the need for improved data and evaluation; and the emphasis upon the economic purposes of tertiary education.

# CHAPTER 1

## INTRODUCTION

### 1.1 The OECD thematic review of tertiary education

1. This Country Note on Korea forms part of the OECD Thematic Review of Tertiary Education. This is a collaborative project to assist the design and implementation of tertiary education policies which contribute to the realisation of social and economic objectives of countries. The tertiary education systems of many OECD countries have experienced rapid growth over the last decade, and are experiencing new pressures as the result of a globalising economy and labour market. In this context, the OECD Education Committee agreed, in late 2003, to carry out a major thematic review of tertiary education.

2. The principal objective of the review is to assist countries to understand how the organisation, management and delivery of tertiary education can help them to achieve their economic and social objectives. The focus of the review is upon tertiary education policies and systems, rather than upon the detailed management and operation of institutions, although clearly the effectiveness of the latter is influenced by the former. The project's purposes, methodology and guidelines are detailed on the OECD web site<sup>1</sup>. The purposes of the review are:

- To synthesise research-based evidence on the impact of tertiary education policies and disseminate this knowledge among participating countries;
- To identify innovative and successful policy initiatives and practices;
- To facilitate exchanges of lessons and experiences among countries; and
- To identify policy options.

3. All countries taking part in the review prepare a detailed national background report that is written using a common framework developed by the OECD secretariat, working in association with member countries. At the time of writing, 24 countries had agreed to participate in the review. Somewhat over half of these, including Korea, have asked for a review of their tertiary education policies by a team of external examiners. This team visits the country for one and a half to two weeks, talking to institutions, key stakeholders, policy makers and national experts. A report, referred to as a country note, is then prepared. This has two aims: to describe the country's national system of tertiary education for the benefit of outsiders; and to make suggestions that the country can use to help the development of its national system and policies.

4. At the conclusion of the review a comparative report will be written that summarises the lessons learned from the review. It will draw upon national background reports, country notes, expert papers commissioned for the review, and a range of detailed statistical and research material.

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<sup>1</sup> Reports and updates are available from [www.oecd.org/edu/tertiary/review](http://www.oecd.org/edu/tertiary/review)

5. Each country taking part in the review is asked to appoint a steering committee of key stakeholders to guide the writing of its background report and to assist in developing the programme for the national visit (if one of these has been requested). Meetings of national co-ordinators for the countries taking part in the review, and of other experts and international organisations, take place at regular intervals during the review. The review is expected to conclude late in 2007.

6. A draft of Korea's background report was made available in July 2005. It was prepared by the Korean Educational Development Institute (KEDI), a Korean government research organisation with a special expertise in the field of tertiary education. A team of four examiners subsequently visited Korea in the period 17-26 October 2005. The team visited a wide range of institutions both in Seoul, the capital, and in several regional areas. It held discussions with the Korean Minister for Education and Human Resources Development, with members of the National Assembly, with senior policy makers in a number of Ministries, and with key stakeholders<sup>2</sup>.

7. Particular thanks are owed to Dr Byung Shik Rhee of KEDI, Dr Jong-Gap Lee and Dr Wha-Jin Kim of the Ministry of Education and Human Resources Development (MOE) who have been the national coordinators for Korea's participation in the review, and to Dr Byung Shik Rhee and Dr Jae Eun Chae of KEDI who supervised and carried out much of the work involved in the development of the background report and in the planning of the national visit.

## **1.2 The Korean economy and labour market**

8. Over the last two decades Korea's per capita income has risen from one-third to two-thirds of the OECD average<sup>3</sup> (OECD, 2005a): in the preceding two decades its economic progress was equally remarkable. In the last five years, in part as the result of structural reforms undertaken since the 1997 economic crisis and in part as the result of strong external demand, it has achieved an average annual growth rate of five and a half per cent.

9. The economic policies that have underpinned this growth have emphasised the development of a vigorous, export-oriented manufacturing industry, with a progressive shift towards high technology- and knowledge-intensive production. Korea remains more dependent upon manufacturing than nearly all other OECD countries. In 2003 manufacturing accounted for 26% of gross value added, a figure exceeded only by Ireland, with 31%. One third (35%) of the civilian labour force is employed in manufacturing, one of the highest levels in the OECD, and only two thirds (64%) in the service sector, one of the lowest (OECD, 2004a). Current economic policy favours a continued strong manufacturing sector with a higher technological base, rather than a significant shift towards the service sector. Where services do grow, the emphasis is expected to be on niche sectors and upon service industries with a high value added. There has been significant expansion of knowledge-based industries, both in manufacturing and in the service sector in recent years. Between 1997 and 2002, output in knowledge-based manufacturing industries such as computers, semiconductors and precision instrumentation grew by 87%. In knowledge-intensive service industries such as software, e-commerce and business services it grew by 26%. Between 1995 and 2002 labour productivity grew, at just over four per cent, faster in Korea than in nearly all other OECD countries, exceeded only by Ireland and the Slovak Republic. In 2000, high- and medium-technology- and knowledge-intensive manufacturing represented a higher proportion of total gross value added in Korea (close to 15%) than in any OECD country other than Ireland (OECD, 2003, Charts D.3 and D.6).

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<sup>2</sup> The members of the review team can be found in Annex 1. The authors of the national background report are listed in Annex 2. The detailed programme for the visit is given in Annex 3.

<sup>3</sup> US\$20 900 in 2004 using current purchasing power parities.

10. This emphasis upon knowledge-intensive industries within national economic policy results in a high priority being attached to research and development, to science and innovation policies, to the development of advanced technologies such as wireless broadband, digital multimedia broadcasting and robotics, and to policies that can turn knowledge into commercial products with a competitive advantage. The challenge posed by China's growing lower wage, export-oriented manufacturing sector looms large in Korean economic thinking, and tertiary education assumes a high importance within such an economic framework.

11. A distinctive feature of the Korean economy is the significant role played by the chaebol. These large, usually family-controlled conglomerates, such as Hyundai and Samsung, consist of many companies clustered around one parent company, and have strong ties to government agencies. They have been a significant force in the growth of modern Korean industry and exports, but since the economic crisis of the late 1990s, closely linked to high debt levels among the chaebol, pressures have grown for their reform and diversification. They continue to play a very important role in Korea's overall research and development effort.

12. Another distinctive feature is the dominant role played by Seoul, the national capital. As well as being the seat of government, it is the home of virtually all major enterprises. It is the location of a high proportion of all tertiary institutions and of nearly all of the most prestigious ones. Close to 50% of Korea's population of 48 million lives in the Seoul region and around 25% in Seoul itself. This represents the highest concentration of a country's population within a single urban area in the OECD. Pressures to counterbalance its power to pull jobs, population and economic resources from other regions are an important feature of current government policies, including policies for education. The notion of "balanced regional development" has been a feature of Korean economic policies since the early 1990s (McManus, 2001).

13. Formally measured unemployment in Korea is, at 3.5% in 2004, very low by OECD standards, and half the rate experienced during the 1997 economic crisis. Nevertheless the present rate is higher than the rates of around two per cent experienced a decade earlier, and reducing it is a priority for the government. Long term unemployment in Korea is the lowest in the OECD, with only one per cent of all unemployment represented by spells of 12 months or more. Reflecting the generally low overall unemployment rate, youth unemployment (measured using the labour force aged less than 25) is also below the OECD average. However the youth to adult unemployment ratio<sup>4</sup> in Korea is among the highest in the OECD, with the unemployment rate among 15-24 year-olds being over three times as high as that among 25-54 year-olds. This reflects the significant disadvantage that young Koreans experience in the labour market. Korea has a weakly developed social safety net – for example in December 2004 only 24% of the unemployed received unemployment benefits – and as a result those who are unemployed rely heavily upon their families for support and assistance, reflecting the strong role that family networks play in Korea in general. Strengthening the social safety net is likely to be a priority for any future public expenditure increases.

14. Part-time employment is quite low in Korea, at only eight per cent of total employment and 12% of female employment, compared to averages for the OECD as a whole of 15% and 20%. However non-regular employment, represented by workers with short-term contracts, temporary agency workers and on-call workers is high and rising. It represented 30% of all employment in 2004, up from 17% in 2001 (OECD, 2005b). It is supported and encouraged by the quite high rates of employment protection in Korea (OECD, 2004b), and particularly the high protection of permanent workers against individual dismissal, that make it difficult for new entrants to break into the regular labour force. It is notable, in this context,

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<sup>4</sup> The unemployment rate among 15-24 year-olds relative to the rate among 25-54 year-olds.

that self employment in Korea is high at 27% of total employment, nearly double the rate for the OECD as a whole.

15. Korea has an ageing population. In 2000 the old-age dependency ratio<sup>5</sup> was less than 10%, among the lowest in the OECD. However by 2050 it will, at over 50%, be among the highest. This will put pressure both upon public expenditure to meet the resulting health and retirement income costs, and upon policies to increase the supply of labour, either from domestic or international sources. A major challenge in doing so will be for Korea to lift its female labour force participation rate. Currently only 54% of women aged 15-64 are in the labour force in Korea, well under the 60% for the OECD as a whole, and the fourth lowest in the OECD (after Turkey, Mexico and Italy). The foreign labour force is also small, representing only 1.8% of the total labour force in 2003. This was larger than the figure for Japan (0.3%), but well under the figures of 5.6% for France, 9.4% for Germany, and 19.9% for Canada.

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<sup>5</sup> Defined as the ratio of the population aged 65 and over to the population aged 20-64.

## CHAPTER 2

### THE CURRENT STATE OF TERTIARY EDUCATION IN KOREA

16. Formal schooling on Korea has an ancient history. The country itself emerged around 3 000 years ago, and the first institution of higher education was founded in 372 A.D. The establishment of Sunkyunkwan in 1398 — still in existence as Sunkyunkwan University — was based on the three traditional principles of Confucian education — virtue, civility, and excellence — and focused on subjects like the study of nature, household management, country governance, and such ideals as sincerity, morality, and universal harmony. This form of education depended on a clear hierarchical relationship between master and student, where the student imbibed wisdom from the master, without questioning or interference. This view persists, as many Koreans will confirm, and provides a foundation for some of the oldest universities.

17. More recently Korea, like many countries around the world, has embraced formal schooling for its economic power. This view emphasizes the role of formal schooling for its value in creating economic growth, international competitiveness, and individual advancement; as we heard many times, Korea does not have any natural resources, so it must rely on the development of its human resources, its people. Often this view begins with the assumption that economies are changing, away from manufacturing toward a “knowledge economy” where new competencies and higher levels of schooling are necessary. As Kwon (2001) has commented, “the idea of a knowledge-based economy is enthusiastically treated like a gospel among Korean people”. The belief in education evident in many countries can be called the Education Gospel (Grubb and Lazerson, 2004), reflecting a faith in education as the solution to both social problems and individual mobility. The current goals of the Korean government for tertiary education are largely related to economic development, including increasing the international competitiveness of tertiary education, improving the employment rates of graduates, increasing knowledge transfer between industry and academia, providing education that better prepares students for the demands of industry, and building 15 world-calibre research universities. The only prominent goal that is not wholly economic is the improvement of quality, which is widely thought to have deteriorated during the expansion of tertiary education; as one measure, the student-teacher ratio climbed to about 30:1 during the period of rapid expansion.

18. The Confucian tradition and more recent economic conceptions of education are united in the emphasis they place on education. As we will see later in this chapter, Korea has expanded its system of higher education more quickly than any country in the world. But these two conceptions depart in other ways, as we will see: the Confucian tradition emphasizes moral attributes and non-economic dimensions of society, while the Education Gospel stresses the skills valued in employment and economic roles. The Confucian tradition is dominated by strict transfer of knowledge from master to student; but the skills that employers want in a modern economy may require forms of teaching in which students learn to question and critique, as we stress in Chapter 5 on teaching and learning. Professors may assume that a broad range of learning is important, while their students may be motivated more by the desire for access to high-status jobs. So the existence of different traditions and perspectives may generate conflict over what education should be, at the same time that they reinforce the value of schooling.

19. In this chapter we describe the current state of tertiary education Korea, stressing the rapid growth, the different types of tertiary institutions in Korea, and comparisons with other countries to clarify the ways in which the Korean tertiary education is distinctive — and therefore particularly valuable in a comparative review. We then outline the challenges caused by the rapid expansion of tertiary education, as a way of introducing subsequent chapters.

## 2.1 The Expansion of Tertiary Institutions

20. As of 1945 when Korea was liberated from Japanese rule, there was only one national university in the country. Seven national universities were established during the period 1951-53; thus the modern system of universities in Korea is little more than 50 years old. The period of time between 1960 and 1980, under the administration of Park Chung Hee, was largely concerned with economic development and the links of education to economic growth, marked by an emphasis on science and the establishment of vocational schools (now colleges). The real expansion of universities and colleges took place initially during the 1960s, but also during the 1980s when there was a 30% increase in student numbers, and during the 1990s. Legislation passed in 1995 facilitated the establishment of new universities and two-year colleges. (Following the Korean convention, we will simply call these colleges; some of their programmes take three years.) Table 1 clarifies how quickly tertiary education grew, in both numbers of institutions and enrolments; over the 1990–2004 period enrolments more than doubled.

**Table 1**  
**The scale of tertiary education, 1990-2004**

Year	Institutions	Students	Faculty	Administrative staff
1990	265	1 691 681	42 911	32 613
1991	273	1 762 154	45 366	33 095
1992	286	1 982 510	48 265	29 896
1993	300	2 099 735	51 277	29 399
1994	310	2 197 842	54 135	28 412
1995	323	2 343 894	58 977	29 975
1996	333	2 541 659	63 809	29 227
1997	344	2 792 410	69 157	30 118
1998	348	2 950 826	54 185	29 960
1999	353	3 154 245	55 718	29 010
2000	353	3 363 549	56 903	29 199
2001	353	3 500 560	58 532	29 466
2002	354	3 577 447	59 750	33 432
2003	356	3 558 11	61 012	35 704
2004	419	3 548 728	66 862	38 547

Source: KEDI. Education Statistics Annual Report

21. In addition, the completion rate of secondary school increased, from 46% in 1970 to almost 100% by 1999 (Kim and Lee, 2004, p. 9). Korea has thereby become one of the first countries to have nearly universal completion of secondary education, and this rate of growth was the highest of any of the

OECD countries (OECD 2003, Table A.12, p. 37). Currently, 81% of all secondary school graduates go on to tertiary university, the highest proportion in the world.<sup>6</sup>

22. Universities, of many kinds, dominate tertiary education in Korea. These provide four-year programmes leading to a baccalaureate degree; a small number of students are enrolled in five-year programmes. The fields of study are described in Sections 7 and 8 of Annex 4, which contains a wide range of comparative indicators on tertiary education in Korea. The fields span the usual range of subjects found in other countries, including the engineering and technology-related fields that have contributed to the development of advanced sectors in Korea. As Table 2 clarifies, the majority of universities are nominally private, with government-sponsored (national or public) universities enrolling only 22% of university students. National universities receive governmental funding (as Table 3 clarifies), are administered by the Ministry of Education and Human Resources Development and in a few cases by other ministries<sup>7</sup>; their presidents are selected by staff and appointed by the President of Korea; and in several ways they are more tightly controlled by MOE. Private universities depend more on tuition fee revenues (see Table 4), and their tuition fee levels are typically higher; they are more autonomous, and governed by a corporate board, though they are also subject to a variety of MOE regulations that we describe in Chapter 6. As we will argue later in this chapter, the complexities of funding and regulation make it difficult to separate private and public (both national and other<sup>8</sup>) universities as strictly as these names imply.

**Table 2**  
**Number of institutions and students by institutional control, 2004**

Type	National/Public		Private		Total	
	Institutions	Students	Institutions	Students	Institutions	Students
University	26	397 352	145	1 439 297	171	1 836 649
Junior College	15	38 747	143	858 842	158	897 589
University of Education	11	23 335	-	-	11	23 335
Industrial University	8	86 892	10	102 143	18	189 035
Technical University	-	-	1	196	1	196
Open University	1	290 728	-	-	1	290 728
Cyber University	-	-	17	39 450	17	39 450
Corporate University	-	-	1	62	1	62
Grad School University	-	-	28	276 918	28	276 918
Miscellaneous Schools	-	-	5	1 153	5	1 153
<b>Total</b>	<b>61</b>	<b>921 046</b>	<b>350</b>	<b>2 634 069</b>	<b>411</b>	<b>3 555 115</b>

Source: KEDI.

<sup>6</sup> See especially Trow (1973, 2005) on the development of mass as distinct from elite systems of tertiary education.

<sup>7</sup> Although strictly speaking those universities administered and funded by other ministries are administered under legislation relating to private universities.

<sup>8</sup> In addition to the national public universities, several metropolitan cities and provinces have established their own institutions.

**Table 3**  
**Financial structure of national universities**

Source of funds	Per cent of total funds	
	2002	2003
Government (normal accounts: tuition + grants)	61.0	62.1
Student (student fees + tuition fees)	30.9	30.1
Misc.	8.1	7.8
<b>Total</b>	<b>100.0</b>	<b>100.0</b>

Source: KEDI

**Table 4**  
**Financial structure of private four-year universities**

	Per cent of total funds		
	2001	2002	2003
Tuition fees	69.7	69.6	69.0
Transfers	8.5	8.4	8.8
Grants	10.3	11.3	11.6
Government grants	4.5	4.0	3.9
Supplementary income	2.3	2.7	2.7
Non-educational income	4.7	4.0	4.0
Total	100.0	100.0	100.0

Source: KEDI

23. Among universities there is a well-known ranking of the most prestigious universities: nearly everyone in Korea agrees on what the top eight universities are, and one administrator commented that every high school student knows the ranking of the top 50 — surely an exaggeration, but one indicating how important these status rankings are. The competition to get into the “best” universities is correspondingly fierce, and secondary school students typically work an additional four to six hours per day in tutoring schools (if their parents can afford them) to improve their score on the university admission test, the College Scholastic Aptitude Test (or CSAT). With a few exceptions such as Seoul National University, the CSAT apparently counts for 70% of the overall selection for colleges and universities, with the student’s high school record contributing only 10%, so it’s not surprising that the CSAT and tutoring schools are so important — more important than high school itself.

24. Most universities are comprehensive, providing teaching in a broad range of sciences, social sciences, the humanities, and professional subjects like engineering and business. However, some are limited to technical subjects; for example, the Korea Advanced Institute of Science and Technology (KAIST) and Pohang University of Science and Technology (POSTECH), the latter founded by the Pohang Iron and Steel Company, are high-quality, high status universities largely devoted to engineering

subjects. While most universities are under the control of the MOE, other ministries have created universities: KAIST is funded partly by the Ministry of Science and Technology; the Korean University of Technology and Education (KUT) has been funded by the Ministry of Labour (MOL), originally to train teachers for labour market programmes. Particularly with the expansion of universities after 1990, there is room in the system for universities that provide quite different visions of what a university should be; for example, Handong University in Pohang, based on Christian principles, creates small groups of students who work closely with their professors, and uses a great deal of team teaching and project-based learning (including senior-year projects). There is some variety possible in the current system, then, although a dominant complaint is that many universities look alike except for their rankings, that regional universities fail to take advantage of regional differences, and that the university system as a whole provides relatively little choice to students. As a result the diversification and specialization of universities has become one of the goals of government policy.

25. The second dominant type of institution is the college, which now enrolls about 40% of students in tertiary education. Most programmes last two years, though about ten per cent of students are enrolled in three-year programmes, especially in the sciences, engineering, and other technical fields. As in many other countries (OECD, 2005e), these institutions exist to prepare middle-level manpower and technicians; the fields of study include a range of occupations in engineering, health including nursing, business and law, and education. While colleges are viewed as the locus of vocational education, most of their offerings are in “modern” occupations linked in some way to academic competencies — health occupations, business, technical areas requiring science and math — rather than “traditional” vocational areas rooted in the Industrial Revolution, though colleges do offer programmes for secretaries, auto mechanics, and other traditional vocational subjects.

26. Compared to the universities, a larger fraction of colleges and college enrolments are in private rather than national institutions, as Table 2 clarifies. This in turn means that those institutions are more reliant on tuition fees and less on government funding; they also do not receive government funding for research, as some universities do. On the other hand, colleges appear to be more closely related to employers than universities are: it is more common for colleges to set up partnerships with local firms, particular small and medium-size enterprises (SMEs); they often offer customized training, in which firms pay for short-term training adapted or customized to their purposes. It’s difficult to ascertain the magnitude of such relationships since, as in many other countries, colleges do not keep systematic records of their transactions with firms, and there are no national figures on the extent of such working relationships. However, they appear to be more extensive in colleges than they are in universities, which apparently don’t like the image of providing such training. Potentially, customized training serves both as a connection to local labour markets and as a potential source of revenues.

27. Some colleges also appear to engage in creative forms of teaching. We heard frequently about the dominance of lecture and information-transfer at universities; one student at a highly-ranked university confessed to being disappointed at finding so little conversation and debate in his classes — though why he expected such departure from conventional teaching is unclear, since secondary education is dominated by such approaches. However, some colleges make substantial use of labs and workshops, particularly since most of their programmes are vocational. Colleges also claim that they provide more internships and other forms of work experience than do universities, though the data necessary to confirm this claim are unavailable. At one college we visited, a professor mentioned team-teaching with industry employees, a practice that would help bridge the divide between “theory” and “practice” — whereas universities were uniformly described as being overly “theoretical” and not concerned enough with practical applications. In general, however, we understand that there is enormous variation among colleges, just as there is enormous variation among universities. In the absence of more careful research, it is impossible to say whether teaching in colleges is more varied and active than it is in universities.

**Table 5**  
**Number of enrolled and graduated students by type of institution and type of degree, 2004**

Type of institution	Students			Graduates		
	Bachelor	Master	Doctoral	Bachelor	Master	Doctoral
Junior College	897 589			226 886		
University	1 836 649	221 227	40 463	267 058	63 153	7 995
University of Education	23 335	6 638	0	7 381	1 535	0
Air and Broadcasting University	290 728	664	0	23 547	101	0
Industrial University	189 035	4 671	150	26 221	1 260	0
Technical University	196	-	-	97	-	-
Miscellaneous Junior College	89	-	-	67	-	-
Miscellaneous four-year University	1 064	-	-	263	-	-
Cyber Junior College	2 734	-	-	731	-	-
Cyber four-year University	36 716	-	-	223	-	-
Corporate University	62	-	-	68	-	-
<b>Total</b>	<b>3 278 197</b>	<b>233 200</b>	<b>40 613</b>	<b>552 542</b>	<b>66 049</b>	<b>7 995</b>

Source: KEDI (2004). Education Statistics Database

28. In many ways, then, colleges seem more to address many of the complaints that have been made about tertiary education in Korea. However, just as the varieties of universities are dominated by a rigid hierarchy of status, colleges are dominated by their much lower status compared to universities. Repeatedly we heard that students would not consider applying to colleges if they had a chance to attend a university; some companies will not hire from colleges, and one large international firm insisted that it would never hire college graduates because doing so would lower the firm's own status — though why customers would either know or care about the education of employees was unclear. Individuals in national agencies and associated organisations with whom we met rarely discussed colleges, except in direct response to our questions. In addition, as we will examine in greater detail in Chapter 4, university graduates have been taking the jobs that colleges generally prepare their students for, so in some ways colleges are being squeezed out of their major labour markets. The low status of colleges, and the problems in their labour market positions, are among the challenges we address, particularly in Chapter 10 on the creation of a coherent system of tertiary education.

29. In addition to universities and colleges, there are several other types of tertiary institutions described in all government reports. The 18 industrial universities focus on providing workers with further education, and encouraging collaboration between universities and industries. However, many of them have become much like conventional universities; the distinction between traditional universities and

industrial universities has become blurred in terms of the students served and courses offered. The 11 education universities prepare teachers for the elementary-secondary schooling system. There is one corporate university, operated by Samsung, and one technical university, affiliated with Korean Air, which offers programmes in aviation and distribution. In addition, broadcasting, correspondence, and cyber universities exist for distance education. The credit bank system allows individuals to accumulate credits from different institutions, from short and intensive programmes, from independent study and licensing courses. However, we did not visit any of these other types of institutions, and received little information about them; as Table 5 clarifies, they account for only 20% of institutions and 23% of enrolments in tertiary education. In addition, the credit bank system granted relatively few associate and baccalaureate degrees, so it too is numerically unimportant (even if it may provide some flexibility). We have therefore concentrated on universities and colleges, the two main types of institutions.

30. The existing system includes relatively few older students: of all university enrolments only 17% are 25 or older. The practice of lifelong learning (LLL), often mentioned as part of the Education Gospel, has not been particularly active in Korea, partly because of an emphasis on degree programmes rather than shorter courses, partly because the offerings of colleges and universities generally assume full-time participation that is impossible for adults already in employment, and partly because adults over the age of about 35 grew up in a society where post-secondary education was relatively rare.<sup>9</sup> We will return to the subject of LLL in Chapter 10, in considering what a coherent system of tertiary education might look like; for the moment it is sufficient to note that students generally enter tertiary education right after secondary schooling, and that most students in tertiary education are of conventional age.

31. Finally, there exists a parallel system of licensing required for many occupations. For many of the trades (like electricians, cosmetologists, and auto mechanics), as well as many professions (like law, medicine, teaching, engineering, and architecture), students need to pass licensing examinations before working in that occupation. In most cases students need to complete the degrees given by education institutions, like the associate degrees of colleges and the baccalaureate degrees of universities, before they take licensing examinations; in a few cases individuals may take licensing examinations without a parallel level of formal schooling. In general however, these are parallel systems because educational institutions — universities as well as colleges and the new polytechnics sponsored by the MOL — do not prepare students specifically for licensing examinations. Instead students enrol in private tutoring to prepare for these exams, just as secondary school students enrol in private tutoring to prepare for the CSAT. Reportedly, preparation for exams — and particularly for the civil service exam required for government employment — can take a great deal of time during the third and fourth years of universities, or after graduation. This seems to us to be a potential inefficiency in the current system of preparation, and we return to this practice when we discuss the responsiveness of tertiary education to labour market patterns.

## **2.2 The Funding of Tertiary Education**

32. Korea has managed to increase the scale of tertiary education remarkably, as Table 1 clarifies, but even more remarkable is the fact that the country has done so without increasing public funding substantially. National (or public) universities received some government subsidies, as well as research funding, and about 30% of their revenues come from tuition fees. However, private universities derive 69% of their revenues from tuition fees, and only four per cent from government grants, as Table 4 clarifies.

33. In general, tuition fees in colleges are about 80% of those in universities. University tuition fees vary by field of study, and are lowest in the humanities and highest in medicine, as Table 6 shows.

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<sup>9</sup> On the relative lack of adult education and LLL in Korea, see the Korea Country Note (2005) from the Thematic Review of Adult Learning.

Roughly, tuition fees in private university are about double those in public universities. Within limits, colleges and universities can set their tuition fee levels, so there can be substantial differences between the highest- and lowest-tuition cost institutions, on the order of about 2:1. By way of comparison, the average annual salary in Korea in 2004 was about 21 million won, so tuition fees between 4 million won and 8 million won represent between 19% and 38% of annual salary, a substantial proportion.

**Table 6**  
**Tuition costs per student, 2004<sup>1,2</sup>**

			<b>Public</b>	<b>Private</b>
<b>Junior Colleges</b>		<b>Highest</b>	4 062 000	6 128 000
		<b>Lowest</b>	800 000	3 607 000
<b>Universitiess</b>	<b>Humanities and social sciences</b>	<b>Highest</b>	4 534 700	5 930 000
		<b>Lowest</b>	2 228 700	1 680 000
		<b>Average</b>	2 485 500	5 009 800
	<b>Natural sciences</b>	<b>Highest</b>	5 898 900	7 292 000
		<b>Lowest</b>	2 687 600	3 842 000
		<b>Average</b>	3 093 000	5 996 000
	<b>Engineering</b>	<b>Highest</b>	6 131 700	7 710 000
		<b>Lowest</b>	2 754 000	3 300 000
		<b>Average</b>	3 007 200	6 537 100
	<b>Performing arts</b>	<b>Highest</b>	7 511 300	8 156 000
		<b>Lowest</b>	2 752 000	3 045 000
		<b>Average</b>	3 338 600	6 622 500
	<b>Medicine</b>	<b>Highest</b>	6 776 300	8 964 000
		<b>Lowest</b>	3 657 100	6 832 000
		<b>Average</b>	4 595 300	7 764 800

1. Unit=1,000 WON per year. 1,000 WON equals roughly

2. Excludes admission fees which are charges only in the first year of study

Source: KEDI.

34. Some students are able to receive tuition waivers or grants to cover their tuition fees. Both needs-based grants, for low-income students otherwise unable to afford tuition, and merit-based grants for high-performing students are available; in a few cases — like KAIST, where ten per cent of students are on industry-paid scholarships — grants come from employers. However, most grants take the form of fee waivers from individual institutions. In 2004 about five per cent of students received grants, including six per cent of university students, three per cent of college students, 34% of those in colleges of education, and eight per cent of post-graduate students. It's more common for students to take out loans to fund tuition. About 25% of students in university programmes, and 22% of students in all university and post-

graduate programmes, received loans in 2004; the average amount of 2.8 million won covered tuition and fees but not living expenses. Given that the average tuition fees in Korean universities range from about 2.3 million won to 7.8 million won, it seems that loan amounts are inadequate for the highest cost fields of study in private universities,

35. However, there are several other sources of funding in the existing system, though it becomes difficult to document their magnitude. Some universities have been founded by groups that continue to provide funding. For example, many universities were founded by churches, which provide continuing support; the Pohang University of Science and Technology (POSTECH) was founded by the Pohang Iron and Steel Company (Posco), which continues to subsidize it. Ministries other than MOE provide funding to specific institutions, as the Ministry of Labour does to KUT and the Ministry of Science and Technology does to KAIST, but total government funding through agencies other than MOE is not known. According to one estimate (Yoo, 2001), 70% of government funding comes through MOE, with the remaining 30% from other ministries and from local governments, indicating that MOE funding levels seriously understate total funding. They also seem to be increasing at a high rate, having almost tripled between 1996 and 2001. These other sources of funding, some private and some governmental, vary substantially among universities. Without a more careful accounting of these funds, it's impossible to be sure of how much is spent on tertiary education in Korea.

36. In addition, expenditures through the tax system support tertiary education, and we suspect that this source of governmental revenue is substantial. Korea has a progressive income tax structure, in which citizens pay taxes based on their incomes, with high-income individuals paying a higher marginal tax rate (up to 35%) compared to lower-income individuals (for whom tax rates start at 10%). Tuition costs for tertiary education are fully deductible, meaning that there is a subsidy through the tax system ranging from nothing, for individuals whose earnings are too low for them to pay taxes, to 10% for those in the lowest income tax bracket, to 40% for the highest-income individuals. Credit bank programmes and independent study for a qualification are also included in this tax incentive programme. These tax expenditures favour higher-income individuals, and are therefore inequitable; we also suspect that they are inefficient, in the sense that they provide government subsidies for tertiary education to families who would support tertiary education for their children on their own. However, the very existence of these tax expenditures was never once mentioned by education officials; no one has calculated the magnitude of these expenditures, though they could be substantial indeed. At the very least, there should be some public accounting of how much is spent through tax deductions, since these are hidden forms of subsidies that at the very least should be explicitly considered. In addition, the effectiveness of tax expenditures in promoting various social goals is generally unknown.<sup>10</sup> When we examine the prospects for funding various changes in tertiary education in Korea, the moderation or elimination of tax expenditures in favour of public spending that is more efficient and equitable — and that more precisely furthers public rather than private purposes — will be one of the possibilities we suggest.

37. In addition, firms can deduct the costs of training their employees from the corporate income tax. Such costs appear when firms subsidize their employees to enrol in colleges or universities, when firms provide customized training through colleges, or when firms develop their own training centres including universities. This too is a form of tax expenditure, and again its very existence — along with its magnitude — has not been widely recognized in Korea. While it is quite conventional to allow firms to deduct the costs of training, as one of the usual costs of business, at the very least Korea should recognize how large the government subsidy is. Indeed, in some cases — like co-operative training — there may be tax deductions both for industry and for individuals deducting tuition costs, so the total subsidy may be quite

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<sup>10</sup> An OECD analysis of tax expenditures and lifelong learning concluded that there is limited evidence of any effect of tax policy on any human capital investments; see “Taxation and Lifelong Learning”, Education Policy Analysis 2004, OECD.

substantial. Under other circumstances Korea might want to redirect these subsidies to other, more targeted purposes.

38. There is yet another elusive cost that appears to be quite substantial, a cost incurred during secondary education that is nonetheless caused by the competitiveness of university entrance. In secondary schools, the pressures to achieve high scores on the CSAT exam are extraordinarily high, and those parents who can afford to typically spend large sums for after-school tutoring programmes. It is apparently not unusual for middle-income parents to spend 30% of their earnings on tutoring schools for high school students; Choi et al. (2003) found that 56% of high school students and 19% of vocational students had private tutoring in 2003, spending an average of 3 586 000 won per year — compared to an average annual salary of about 21 million won. In effect, such spending from private sources converts what is nominally a public system of secondary education into a public-private mix.

39. There is apparently a second stage of intensive tutoring before students take the licensing examinations required for a broad range of lower-level occupations (including such occupations as cosmetology, car and truck mechanics) and professional occupations like law, medicine, engineering, teaching, accounting, and many others. These licensing examinations may take place at different points in the educational process: some of them require specific years of formal education before students can take the exams, while others can be taken at any time. As for the CSAT, taking some of these exams involves extensive private tutoring, and again this is sometimes paid by parents. Other than the 2003 study by Choi et al. cited above, we saw no estimates of the amounts of private funding for tutoring at any levels of the education system, though this is widely recognized as necessary condition for entry into universities and later into occupations.

40. Funding patterns in Korea, together with regulatory practices, therefore make it difficult to say whether certain forms of tertiary education are strictly public or strictly private. National universities are the clearest examples of institutions that are governmentally funded and regulated; but tuition fees still account for 30% of their revenues, and the private costs of private tutoring must be considered. Some universities that are nominally private received substantial support from various social groups, such as churches, and from tax expenditures for tuition costs, and they are regulated in various ways — the subject of Chapter 6. There are of course degrees of public and private support that matter a great deal, as the figures in Tables 3 and 4 indicate, but still the distinctions between the two are not as sharp as categories of institutions might imply.

41. The governmental accounting for the costs of tertiary education is therefore incomplete, with both private funding (for tutoring and the support of universities) and governmental support (through tax expenditures) missing. When we use these official statistics to compare Korea with other countries, in the next section, we should therefore remember that virtually all official country statistics are incomplete, and therefore the comparisons we can make with these numbers are based at best on incomplete information.

### **2.3 Comparing Korea with Other OECD Countries<sup>11</sup>**

42. In comparing Korea with other countries, it is important to remember that the increase in tertiary education has been quite recent — largely since the mid 1980s. Therefore the education levels of the older population are low relative to OECD averages, while the levels of tertiary education for younger cohorts are relatively much higher. In Section 1 of Annex 4 for example, 18% of Koreans 25 – 64 have university education, below the OECD average, while Section 2 reveals that 26% of those 25 – 34 have such qualifications, 7% more than the OECD average. The rate of tertiary qualifications in the population age

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<sup>11</sup> Here we draw upon the comparative indicators shown in Annex 4. The Sections that we refer to are the Sections of that Annex.

25-34 has almost doubled between 1991 and 2002 (Section 4), a much greater rate than the growth rate of 40% in OECD countries generally.

43. Enrolment figures also clarify that Korea lags behind OECD countries in the enrolment of women compared to men (Sections 1 and 17). These patterns are surely linked to the relatively recent emergence of women as employees, since female labour force participation rates in Korea have been comparatively low compared to most OECD countries — a pattern true of many Asian countries.

44. The enrolment patterns shown in Sections 7 and 8 of Annex 4 show a few marked differences from OECD patterns. At the university level, enrolments in engineering, manufacturing, and construction and in mathematics and physical sciences are particularly high, reflecting a pattern of using university graduates for research and development related to technological developments. However, enrolments in humanities and the arts are also relatively high, perhaps reflecting the continuing Confucian tradition of scholarly study and research. Enrolments in education are low, although the universities include 18 institutions devoted to teacher training. The demographic decline of the school-age population may be responsible, as well as large class sizes and high student-teacher ratios, which mean that Korea needs fewer teachers per student than other countries. Enrolments in social sciences, business, and the law are also relatively low; Korea has not yet followed the U.S. pattern, recently emulated in Europe, of extensive use of business schools and law schools, though there is some recognition that the maturation of Korean corporations may require more attention to these fields in the future

45. At the college level, again enrolments in engineering and sciences are relatively high, reflecting a commitment to technological development and technician training, but humanities and the arts are also high. Enrolments at ISCED level 5B, most of which are in the colleges, are largely in “modern” occupational areas connected to academic subjects (including science) and to technological developments, rather than concentrating on the traditional vocational fields of mechanics and auto repair, secretarial fields, or the crafts; these are still predominantly the domain of secondary vocational programmes.

46. Sections 9 and 10 reveal the employment benefits for males of increasing levels of education. For women the patterns are more complex: women with lower secondary education only (grades 7 – 9) more likely to be employed than those with upper secondary or college education, a pattern quite different than in other OECD countries. These figures also reveal that the employment rates for women with tertiary education in Korea are 30 – 40 percentage points lower than in all OECD countries, except at the lowest levels of schooling.

47. Section 13 indicates the extraordinarily high rates of enrolment in type 5B programmes, most of which are in colleges, as well as type 5A and 6 programmes, most of which are located in universities. Indeed, participation in 5B programmes is the highest of all OECD countries, a fact that has led us to emphasize the roles of colleges (in Chapters 3 and 10). From Section 14, the demographic decline in the university-aged population would by itself have caused enrolments to fall;<sup>12</sup> but increasing rates of enrolment, 28% higher than the OECD average, are responsible for the overall increase in enrolments. Section 16 further clarifies that this increase has come from “traditional-age” students, 24 years and younger; the rate of enrolment among individuals over 35 is quite low, indicating the lack of any tradition of lifelong learning in Korea.

48. Sections 11 and 12, on the earnings of graduates from colleges and universities, confirm some puzzles also present in the Korea data from the prior section. While the earnings benefits of university graduation are substantial — 47% for those 25 – 64, and 42% for those 30 – 44 who have less experience

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<sup>12</sup> Between 1990 and 2000 the university-aged population 20 – 24 declined by 12.5%, whereas this cohort has continued to increase in many countries.

in labour markets — the earnings advantages for those with 5B qualifications who are in the most part college graduates seem quite small (6% and 13% respectively), near the bottom of the OECD distribution. When we consider the relationship of tertiary education to the labour market, in Chapter 3, we will explicitly try to explain why there appear to be very low earnings benefits for colleges in Korea.

49. When we turn to expenditure patterns in Section 24, average expenditures per student in Korea appear to be lower than the OECD average. This may partly reflect the fact that Korea has a somewhat higher proportion of college students compared to university students, and spending per student in colleges is roughly half of what it is in universities (US\$4 295 in colleges versus US\$8 236 in universities). However, Section 26 reveals that expenditures per students relative to GDP are much higher than the OECD average, and indeed Korea is first among these countries in total spending on tertiary education as a fraction of GDP.

50. Section 27 clarifies an unusual feature of Korean expenditure patterns: governmental spending for tertiary education is quite low, while private spending is relatively high, nearly four times the OECD average. This reflects the pattern of growth since 1980 where tertiary education has expanded by allowing new institutions to open and parents (and other private sources, like churches and corporations) to fund the enormous increase in enrolments without any substantial increase in public funding. This pattern in turn reflects the enormous commitment of parents to the education of their children, again a reflection of both Confucian traditions venerating formal schooling and of the more recent pressures to increase schooling as the only route into decent jobs. There is some sense in Korea that the level of governmental funding in tertiary education is “too low”, particularly compared to funding for elementary-secondary education, and that the amounts of private funding are “too high”. However, increasing public spending on tertiary education to the OECD average would require almost five times the amount of government revenues. As we explain later in this chapter, we think it unlikely that such increases in government resources will be available given other pressing demands such as meeting the increased costs associated with an ageing population and improving the social safety net. Rather, Korea should consider itself fortunate that parents and other private groups are willing to support tertiary education at such high levels.

51. Finally, Section 31 reveals another distinctive feature of the Korean system: a strong preference for loans over grants. Grants to households — that is, to students and parents — are very small, less than one per cent of all public spending, but loans represent nine per cent of public spending, slightly higher than the OECD average. We will further examine the structure of loans and grants in Chapter 8, when we analyze equity in the system; for now it is sufficient to note the general absence of grants, which in other countries are often used to subsidize the tuition costs of low-income students.

52. On several dimensions, then, Korea provides a pronounced contrast with other OECD countries. It is one of the few countries where graduation from secondary school is virtually universal. The rate of progression into tertiary education, 81% overall, is the highest among all countries, and that figure has grown rapidly since 1990 when it was only 33%; the idea of “tertiary education for all”, sometimes articulated as a goal of policy (OECD, 1998), is closer to reality in Korea than in any other country. These increases, all accomplished without substantial increases in public funding, are truly remarkable, and they provide evidence to other countries wanting to expand formal schooling that it can indeed be done, at least in a country with a deep faith in formal schooling. Whether or not it is a desirable objective for other OECD countries to expand their tertiary systems to the same extent as Korea is, of course, a separate issue. Some of the challenges arising from the expansion in Korea are central concerns of this Country Note.

## 2.4 The Issues Created by Expansion

53. The extraordinary growth of tertiary education has created a series of challenges<sup>13</sup> — and there is debate in Korea about which of these are the most important. One way to view the current state of tertiary education in Korea is that the basic building blocks are now in place — the universities, colleges, and other specialized institutions with the capacity to enrol substantial proportions of new generations of students. However, the overall challenge for the next several decades is to take these institutions and form them into a coherent system responsive to the needs of parents and prospective students, to employers, and to the social purposes of education.

54. We have identified nine challenges in particular, and we devote a chapter to each of them in this Country Note:

- **The match with labour markets:** While it is often asserted that more individuals need to be schooled to meet the challenges of competition and growth, there is evidence that the rapid expansion of tertiary education has resulted in over-education. In addition, there are substantial complaints, particularly from employers, that the skills of graduates do not match the skills required in the labour force. In Chapter 3 we examine these various charges, and review the potential ways of strengthening connections of tertiary education to labour market requirements.
- **Quality:** Virtually everyone in Korea agrees that expansion has resulted in lower quality. However, no one agrees how to recognize or measure quality, and therefore there is little agreement what to do about it. Furthermore, the country's Quality Assurance (QA) mechanisms appear relatively weak to us, both at the system level and the institutional level. In Chapter 4 we present a number of alternatives designed to strengthen quality assurance through the use of more flexible and outcome-oriented mechanisms.
- **The quality of teaching and learning:** A somewhat separate dimension of quality involves the nature of teaching. Most of Korean education has been concerned largely with information transfer, and this pedagogical approach is certainly consistent with Confucian thought. But many students appear dissatisfied with the lack of participation and discussion in their classes, and many Koreans have recognized that conventional lecture-dominated teaching is not a good way to prepare entrepreneurs, creative thinkers, or new perspectives on Korea's role in a changing world. The existing efforts to change teaching and learning appear relatively weak and isolated. Chapter 5 examines this particular dimension of quality, and outlines the long-run initiatives that would be necessary to ensure change.
- **Governance and regulation:** The expansion of Korean education occurred largely through expansion of nominally private institutions, but with relatively tight control from MOE that has created institutions that in some cases have less autonomy and flexibility than they might. In addition to the relationship between MOE and educational institutions, both public and private, the relationships *within* MOE and among government ministries more generally need to be examined. We conclude the chapter on governance and regulation by noting that a more developmental conception of regulation — one designed to develop the capacities of tertiary institutions, rather than relying on bureaucratic norms to control their actions — probably requires a different approach, and a different type of government agency.
- **The role of tertiary education in research and development (R&D):** Korea has become concerned with R&D as a way of enhancing technology and competitiveness, and a persistent question is

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<sup>13</sup> Some of these challenges, of course, also arise from other factors in addition to expansion.

what the role of tertiary institutions in R&D should be. In Chapter 7 we examine where R&D of several kinds is now carried out, and identify the unique roles that universities can and should play.

- Equity in tertiary education: The expansion of tertiary education has taken place with little thought for equity issues, understood in Chapter 8 as equity among social classes (or income groups) and equity between men and women. On the one hand expansion may have enhanced equity, by increasing the opportunities in tertiary education. On the other hand, the extreme differentiation of tertiary education in Korea, with intense pressure to get into the best universities, has created new forms of inequality. The existing equity mechanisms, particularly the fragmented system of loans, could be improved, and so we propose some alternatives for Korea to consider.
- Regional equity and the domination of Seoul: Equity in Korea also takes the form of a regional imbalance, where most young Koreans seem to want to migrate to Seoul while the government would like to see the population, and employment, more evenly spread throughout the country. This desire has in turn resulted in some education regulations, particularly quotas on tertiary institutions in Seoul, intended to correct this imbalance. But we suggest these are matters for a coherent regional development policy; educational measures by themselves cannot stop the expansion of Seoul, and we suggest in Chapter 8 what alternative measures might be.
- Globalizing pressures: Particularly for a country like Korea, operating in an open economy, the transformation of a globalizing world and economy have been powerful. However, the implications specifically for tertiary education are not as clear, and we identify a few specific issues in Ch. 9 that might be addressed.
- Creating a *system* of tertiary education: Because the expansion of tertiary education has happened so quickly, there is now a case for paying increased attention to ways of creating a coherent *system* of inter-related institutions, as we argue in Chapter 10. After we describe some of the unresolved problems in the current system, we outline several issues for Korea to consider including clarifying the roles of transfers among institutions; the place of colleges within tertiary education; the potential for expanding choice for students; the role of lifelong learning (LLL); and a potential conception of how market mechanisms and non-market regulation might work. We end the chapter by raising the question of what kind of *system* of tertiary education is desirable for Korea.

55. Throughout these chapters, we present alternatives for Koreans to consider, rather than (in most cases) making specific recommendations. The details of reform must, we think, be left to Korean educators and policy-makers, though we can provide examples to consider, particularly those with some evidence of working in other countries.

56. In outlining these alternatives, we have tried to keep in mind some assumptions about the future, and some constraints that we should respect. One is that the desire for tertiary education among parents and children is unlikely to decrease. If there are too many tertiary institutions, then some should close or consolidate, but any reduction in the absolute number of students must come from the reduction in the size of young cohorts, not in the rates at which they attend schooling. In addition, even while Korea spends relatively little governmental revenue on tertiary education, we think it unrealistic to recommend substantial expansion in government funding. There are too many other requirements for public funds — for health care as the population ages, for early childhood programmes and other efforts to increase the birth rate, for the potential costs if there is reconciliation of North and South Korea — to expect government resources for tertiary education to expand dramatically. Instead the challenge will be to use

existing public resources — including those that are little-recognized, like tax expenditures — to further public purposes. And finally, while the growth rates of Seoul might be moderated relative to other areas of the country, it will continue to be the dominant city in Korea for many decades to come; the desires of both firms and students to locate near Seoul will surely continue.

57. To be sure, policy-makers have already recognized many of these challenges, and legislation before the National Assembly at the time of our visit proposed solutions to several of them. However we suspect that a broader range of changes, within a comprehensive framework of changes, will be necessary to address the issues we raise in this Country Note.

58. Throughout these chapters, a number of challenges emerge repeatedly, and we summarize these common themes in Chapter 11. They include issues like the availability of data and evaluation; the propensity to create many small programmes to respond to problems, rather than engaging in structural change; the culture of status that dominates tertiary education, and what it might take to shift to a culture of quality and performance; the relative roles of market and non-market approaches to tertiary education; the domination of economic concerns related to employment, earnings, status, and competitiveness in the motivation of both parents and students and of policy-makers; and the allocation of scarce governmental resources in the future. Addressing these challenges in consistent ways would also help the resolution of problems we identify in Chapter 3 through 11.

59. Korea has already made the transition from a relatively elite system of higher education to a mass system (Trow, 1973; Trow, 2005). Along the way it has made secondary education almost universal, and created a vast number of tertiary opportunities for its young people — triumphs of which Koreans should be justly proud. But for the next several decades the challenges are to place an increased emphasis upon quality, to strengthen the internal coherence and linkages within the system, and to develop a more flexible system of markets and regulations. This is, of course, a long-run process, one that will take two or three decades to develop. But the first step will be to articulate the long-run goals and the mechanisms for achieving them, and the purpose of this Country Note is to help Korea in this first step.

## CHAPTER 3

### TERTIARY EDUCATION AND THE LABOUR MARKET: OVER-EDUCATION, MISMATCHES, AND NEW CONNECTIONS

60. There's little question that the expansion of tertiary education in Korea has been stimulated by economic concerns. Repeatedly we heard of the need for more education to keep pace with competitors, or to maintain technological development. While Confucian values may explain some of the veneration for education, more practical and economic concerns have come to dominate both private and public decisions.

61. When an education system is converted to economic and employment goals, the conventional assumption is that the dictates of the labour market should guide the development of formal schooling. However, educational institutions, the locus of preparation for occupations, are formally separate from workplaces where employment takes place. Connections between the two must be constructed rather than assumed, and in particular market mechanisms are generally inadequate to create these connections, as we argue in the last section. In addition, educational institutions and faculty have other allegiances — particularly, in Korea, allegiance to the Confucian principles of virtue, civility, and excellence, rather than to “modern” values like developing employment-related skills. And so various kinds of mismatches between the needs of the labour market (or demand) and education within tertiary education (or supply) may develop — particularly, we suspect, during the period of extreme expansion of tertiary education when the need for such connections was generally overlooked.

62. In general there is a sense in Korea that “the linkage between tertiary education and the labour market is weak”, as the Background Report acknowledged. In this chapter we examine several distinct types of mismatches: the pervasive problems of over-education, rather than a shortage of skilled workers; the potential under-supply of trade workers and of individuals prepared to go into so-called “3-D” work (dirty, dangerous, and difficult); the complaints employers have made about the skills of recent graduates; and the overall flexibility of the existing system in responding to changes in employment. The last section clarifies the three generic mechanisms of linking educational institutions and labour markets, suggesting some that have been under-used in Korea.

#### 3.1 The Rhetoric of Under-education and the Reality of Over-education

63. As in many other countries, policy-makers in Korea have called for expanding education (especially tertiary education) as a way of expanding the economy. For example, the Ministry of Finance has developed figures according to standard growth-accounting measures, in which overall growth rates are decomposed into components accounting for the growth in the quantity and quality of capital, and the quantity and the quality of labour measured by years of education<sup>14</sup>. Unfortunately, growth accounting

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<sup>14</sup> While we have been unable to read technical reports in Korean, an individual from the Ministry of Finance cited growth rates due to human capital factors increasing from 0.78% in 1996-2000 to 1.06% in 2001-2003, while the contribution of physical capital declined from 2.26% to 1.56%. These numbers reflect the

models conventionally overstate the role of education since it is one of the few factors contributing to growth that can be measured. Microeconomic approaches (e.g., Harberger, 1998; Topel, 1999; Landau, Taylor and Wright, 1996) clarify that there are many factors influencing the growth of industrialized economies. These include: national governance; overall economic and political stability; macroeconomic policies; financial, legal, and corporate institutions (including the structure of large corporations or chaebol in Korea); regulatory policies; and policies for labour, science and technology, and education. In this complex mix education is only one of many factors; it can certainly hamper economic growth if there are serious shortages of skilled workers — that is, if demand conditions are right — but education is unlikely to stimulate growth on its own.

64. There are many signs that the real problem in Korea is an over-supply of individuals with baccalaureate and possibly associate degrees — indeed, what the Minister of Education and Human Resources Development himself called “a crisis of over-education”<sup>15</sup>. Overall, the employment rate of recent university graduates is cited to be only 56%, lower than the employment rate of college graduates of 77%; while there are serious problems with the way this statistic is calculated,<sup>16</sup> it still indicates a problem with graduates getting the kinds of skilled professional and managerial jobs they expect. In many cases, students have taken “leave of absence” — that is, they take periods off from their studies — rather than enter the labour market as graduates with low probability of success. Furthermore, there is a general consensus that university graduates have taken jobs that were designed for college graduates, sometimes as university graduates simply apply for these lower jobs when they are unable to get better jobs, but sometimes because universities have opened baccalaureate programmes that explicitly compete with college programmes. (For example, we heard of lower-quality universities offering four-year programmes in cosmetology, which are surely jobs that should be filled by college or secondary school graduates.)

65. Similarly, as college graduates have faced competition from university graduates, they have begun to fill jobs that previously were filled by graduates of secondary vocational schools. Thus the employment rates of college graduates are higher than those of university graduates, but their average earnings (1 489 000 won per month are not much higher than those of high school graduates (1 456 000 won per month). In contrast, those with a bachelor’s degree and above earn an average 2 208 000 won per month. (Apparently the earnings of those with post-graduate degrees are not much higher than those with

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decomposition of growth rates according to a growth components model, an approach which ignores the great variety of factors in a micro-economic approach like the one adopted by Landau et al. (1996).

<sup>15</sup> The same is true in many developed countries. See the special issue of the *Economics of Education Review*, Vol. 19 (2000), on over-education in the U.S. and Germany; Grubb and Lazerson (2004, Ch. 7) on the U.S.; Grubb (2004) on England.

<sup>16</sup> The unemployment rate should be expressed as a proportion of those actively looking for work at a given time. The official employment rate is based on a census in March of every year, and asks whether individual have certified employment — that is, employment that has been certified by an employer. Individuals who have gone into military service, or who have continued their schooling, or who have uncertified employment, or who have stayed home to care for children are taken out of the sample. In addition, the largest number of graduates complete their education in February, just one month before the census; since it usually takes individuals longer than a month, particularly to find “adult” employment (Klerman and Karoly, 1994), many of those counted as not employed are probably still looking for acceptable employment. For all these reasons the official employment rate is likely to be an under-estimate of the true rate, though it is widely used in Korea to compare institutions. When we recommend using the employment rate in subsequent sections, we refer to using an employment rate calculated by more accurate methods.

bachelor's degrees.<sup>17)</sup> A common statement, then, is that enrolment in college is a route to more stable and higher status employment, but not to higher earnings.

66. These factors have in turn contributed to intense pressure among students to get into the “best” or highest-status universities — the top eight or so universities out of 171, and certainly not colleges — which they (and corporate representatives) think are more likely to lead to professional and managerial employment. This pressure shows up in private tutoring programmes during secondary schooling to enhance college entrance exam scores, which can take up to five hours of time per day on top of the regular school day, and which can cost parents up to 30% of their earnings. We will return to this topic in Chapter 4, when we examine different conceptions of quality, and distinguish status from quality.

67. The process of over-education, where university graduates have displaced college graduates and college graduates have displaced secondary school graduates, together with the intense pressure to attend tertiary education, has in turn led to apparent shortages of trade-level workers — the electricians, plumbers, mechanics, and secretaries required for construction, assembly lines, and modern corporations. Although these occupations are supposedly prepared for in vocational secondary schools, these institutions now send 62% of their graduates to tertiary education, up from only eight per cent in 1990, so they are no longer predominantly “terminal” institutions providing vocational education for the mid-level workforce. While we were usually unable to get precise information about the educational preparation of trade workers, we think that these shortages are sometimes met by importing workers from other countries, sometimes through labour market programmes for the unemployed, and sometimes by using college graduates (an example of over-education). However, there has been little recognition that over-education in tertiary education has been matched by some under-education for jobs for which secondary schools have traditionally prepared students — for example, construction workers and tradesmen like electricians and plumbers.

68. The process of over-education is caused by at least two different phenomena. One, of course, is the desire of students and their parents for higher levels of schooling, and schooling of the highest possible reputation, in order to get access to the best jobs. But educational institutions themselves have also been responsible for over-education. When the government allowed the founding of more institutions in the 1990s, enormous numbers of universities were founded, as Table 1 shows. And there appears to be pressure by several different education and training institutions to provide higher-level degrees. For example, many non-research universities now provide research-oriented Ph.D.s; universities have been providing programmes that compete directly with vocational programmes in colleges, thereby escalating the degrees for some jobs from an associate degree to a bachelor's degree; a two-year college we visited wants to become a full university, not because there is a shortage of universities but because none of them focus on vocational fields<sup>18</sup> — a statement that trade workers will then have baccalaureate degrees instead of associate degrees or high school diplomas; the Korean University of Technology and Education (KUT), once an institution to train teachers for labour market programmes, has evolved into a full university; and some of the training centres funded by the MOL to provide short-term training have become polytechnics

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<sup>17</sup> The Korean data from the Background Report show no earnings advantage to college graduates, whereas the OECD data show a 13% advantage for younger workers (Annex 4, Section 12). In any event the difference is small, and controlling for other variables — labour market experience, ability, family background, gender — would probably further reduce the differential.

<sup>18</sup> The international comparisons made by this college struck us as inappropriate. They cited the Finnish polytechnics granting baccalaureate degrees, for example, but the magnitude of these institutions is comparatively much smaller, and they exist within a very different degree structure. They also cited the English polytechnics and their conversion to universities, but many observers regard this change as a good example of educational inflation.

providing associate degrees. It appears to us, then, that both excessive demand from students and the excessive supply of places in tertiary institutions are contributing to the “crisis” of over-education.

69. We don’t see any ways for the government to reduce the demand among students and parents for more education, nor would that be desirable. However, there could be a policy that constrains institutions from providing degrees at higher and higher levels<sup>19</sup>. One approach would be to reduce or eliminate the ability of non-research universities to award higher degrees, to prohibit colleges from granting baccalaureate degrees, and to restrict the further development of universities and colleges (including polytechnics). Alternatively, the government could require institutions to prove unmet demand in the labour market (not just demand from students) before they open new programmes. Finally, the government as a whole could examine the policies whereby several ministries — the MOE, the MOL, the Ministry of Science and Technology — create tertiary institutions independently of one another, again contributing to over-education. And the creation of a clear three-part structure for tertiary education, as we suggest in Chapter 10, might be helpful both in creating a more transparent system and in reducing the institutional pressures for over-education.

70. Overall, then, the expansion of tertiary education seems to have outpaced the demand for jobs requiring high levels of schooling. Furthermore, the dominant economic incentives in the current system are to enhance the numbers of those with baccalaureate degrees, while the incentives for completing associate degrees are weak. It seems likely that the Korean system is preparing too few technicians in colleges, while there are too many individuals with baccalaureate degrees who cannot find appropriate employment. And institutional interests contribute to the escalation of degrees and levels of tertiary education.

### **3.2 Under-education and Post-Graduate Education**

71. A different issue involves the numbers of post-graduate students. Currently the numbers of master’s and Ph.D. programmes are severely limited: only 66 049 of all 2004 graduates had earned master’s degrees, and only 7 995 had received doctoral degrees, compared to 552 542, or 88% of the total, who won baccalaureate degrees (see Table 5). In turn, this issue is linked to the role of education in R&D, the subject of Chapter 7, where a larger number of individuals with post-graduate degrees might expand R&D.

72. However, it is not clear that there is a shortage of post-graduate degrees, at least not in the economist’s sense. There doesn’t seem to be any artificial restriction in the number of places for post-graduate education; on the contrary, the dominant complaint is that there are too many places in non-research universities, so that the quality of research training is low even if the quantity is appropriate. Indeed, Kim and Lee (2004) mention a glut of Ph.D.s created by the rapid expansion in the supply of these degrees since the early 1990s. In addition, while the status associated with post-graduate education might be substantial, there are no earnings incentives to extend education past the baccalaureate. If there is any shortage, then, the real solution should come from research-oriented corporations and research institutes increasing salaries to attract more individuals into post-graduate education and research, not to expand

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<sup>19</sup> This policy would be consistent with establishing government regulations to make the quasi-market in tertiary education more efficient. Over-education involves an externality: one student’s decision to get more schooling (or an institution’s effort to lure students into higher degree programs) is likely to affect negatively another student’s ability to get a job. These competitive labour markets are therefore good examples where decisions that are individually and institutionally rational are socially irrational, and improving this quasi-market requires intervention to limit over-education.

supply — a change that would only further depress the earnings associated with post-graduate degrees and make the apparent glut even worse.<sup>20</sup>

73. A comprehensive national framework for R&D of the sort being developed at the time of our visit might clarify the extent of any shortages, and more specifically the potential of shortages to develop in highly specific fields — bio-technology, for example. Then it would be possible to develop a combination of demand-side and supply-side policies appropriate for preventing any shortages from developing. Without such a framework, increasing the numbers of post-graduate degrees might contribute further to over-education.

### 3.3 The Mismatch of Skills

74. A second potential problem with labour market connections is revealed in complaints about inadequate skills, even among those who have graduated from universities and colleges. In addition to general concerns about skill shortages in areas of strategic national importance, employers also complain about the lack of appropriate skills among the young people they hire. When we examine the specific skills that they complain about, some should indeed be learned in schools, colleges, and universities; for example, mathematics, understanding of market principles, mastery of English and (for some companies) Chinese are competencies that can be readily learned in formal schooling. Representatives of the Federation of Korean Industries complained about a lack of abilities that have been called in other countries “higher-order”, like problem-solving and the ability to perform well in groups. If employers truly need these skills, but educational institutions are failing to teach them, then there must be some information problem: either employers have not made their needs known, or educational institutions have failed to respond, or students have remained ignorant of the importance of these competencies in the work world. The alternatives we present in the final section of this chapter could help remedy these potential weaknesses in connections between schooling and employer demand.

75. However, in some cases employers complain about a lack of skills that should not and cannot be effectively taught in formal schooling. Officials of the MOE indicated that industry has complained not about a shortage of post-graduate degrees, but about their quality because students are not well-trained in the specific techniques that each firm uses; the complaint was that professors want to advance academic knowledge, while firms want more practical knowledge and need to engage in on-the-job training as a corrective. The Federation of Korean Industries claims that its members have to spend a great deal to retrain university graduates in corporate culture, the need to follow corporate rules, corporate communications patterns and modes of presentation, and rapidly changing technologies used in business. Similarly, a large employer complained about poor understanding of corporate culture and corporate etiquette among new hires. Some of these “skills” are attitudes and values that are best taught by corporations themselves, both because they are likely to be specific to particular companies,<sup>21</sup> and because tertiary institutions, necessarily removed from the workplace and operating with their own cultures, are not the best places to teach the detailed values and norms of workplaces. In this case, a division of labour is appropriate. Then if employers want to hire graduates with these kinds of specific skills, they should join with educational institutions and provide internships or co-operative education, where students spend some time in structured work activities where they can more readily learn about aspects of corporate culture, appropriate attitudes, and other firm-specific skills. Alternatively, they can teach these competencies in the

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<sup>20</sup> Technically, shifting out the supply function along a stationary demand function increases the numbers of those with post-graduate degrees, but at the cost of lowering salaries. A demand-side strategy is necessary if there are to be conventional economic returns to post-graduate education.

<sup>21</sup> In economics there is a convention that formal schooling should teach relatively general skills, while firms themselves ought to teach firm-specific skills; this usually relies on Becker’s (1974) analysis. Corporate culture and etiquette are good examples of firm-specific skills.

early months of employment, during a trial or introductory period. But we think it is unreasonable and ineffective to expect tertiary institutions to teach such specific skills.

76. Yet a third complaint is that a shortage exists of workers willing to do 3-D (dangerous, dirty, and difficult) jobs, which are then filled by foreign workers. For example, one employer complained that graduates of engineering programmes were unhappy working in factory settings. Presumably this has happened because, with 81% of secondary graduates going on to tertiary education to get professional and managerial jobs — that is, white collar jobs with office-like working conditions — there are fewer individuals wanting 3-D work. A conventional response has been to import workers, or to develop labour market programmes to prepare such workers. However, it isn't clear what the causes of such shortages are, and therefore what the remedies should be. If students in mechanical engineering programmes are unaware that their work will require some time in factories and on the assembly line, then the appropriate response is adequate warning of the conditions of such jobs — perhaps by developing internship programmes. If there are genuine shortages because workers don't like 3-D work, then the conventional market solution would be to raise wages and thereby increase the numbers of workers willing to put up with 3-D conditions. Under these circumstances supply-side policies — increasing enrolments in tertiary education and labour market programmes — are likely only to add to the stock of trained workers unwilling to go into 3-D work, and then they may go into jobs requiring lower levels of skills and thereby contribute to the “crisis” of over-education.

77. A different type of mismatch involves the overall flexibility of tertiary education in response to labour market changes. To the extent that an education system is intended to prepare workers, then enrolment patterns should change as occupational patterns change. This is particularly important in countries like Korea, with open economies subject to variation in international trade, and to countries trying to compete by developing new technologies. However, in Korea the flexibility and responsiveness of tertiary education has been limited by funding allocations based on an extrapolation of historical demand patterns in the context of a quota system, which establishes limits on enrolments in the Seoul area, as well as limiting enrolments in the fields of medicine and teacher education. The most obvious evidence of this is the stability in enrolment patterns in universities over the past ten years, even as demand in certain sectors (like health and engineering) has been increasing.

78. While the MOE claims to be developing a new forecasting system to help higher education institutions develop their student enrolment profiles, we are unsure that this will fix the current problem<sup>22</sup>. Instead, when we return in Chapter 6 to the regulation of tertiary education, we will recommend that Korea consider regulating the scale and shape of the education system (school vs. college vs. university) at which different occupational preparation takes place, in order to reduce over-education.

79. In summary, complaints about the mismatches of skills are quite varied in their origin and in their solutions. Some seem to arise from student misunderstanding of what jobs require, and then the solution is better information to students. Some arise from educational institutions having rigid staffing structures and being resistant to change and, particularly, failing to recognize the competencies required in modern work, and the solution is for employers and education providers to confer about the requirements of modern work. Sometimes the solution should come from employers themselves, developing certain skills on their own, or creating internships and other forms of work-based learning. In some cases, like shortages of workers in unpleasant jobs, the real solution should come from the demand side and increasing wages. And

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As best we could understand, the new approach is a manpower forecasting model, attempting to forecast the demand by fields of study. However, manpower forecasting in developed economies has been widely discredited because of its inaccuracy. This is particularly likely to be true in an open economy like Korea's and during a volatile period of time when the emergence of other economies — China and India in particular — makes forecasting especially risky.

more might be done through financial incentives that encourage responsiveness to changing circumstances on the part of higher education institutions. Like many other issues in Korean education, the problem of mismatches is not a single issue, but a series of somewhat different issues requiring different solutions.

### 3.4 Strengthening Labour Market Connections

80. Once preparation for employment is located in educational institutions, necessarily removed from workplaces, then some mechanisms need to be created to make sure that educational preparation and employment requirements do not diverge too sharply. Korea is now taking several steps to improve the connections of tertiary institutions to labour markets. Short-term measures include more internships, greater participation of industry in organizing educational programmes, enhancing collaboration between universities and industry, and expanding short-term vocational training through the unemployment insurance system and private corporation. Over the long run MOE is apparently developing an index of work performance skills that employers can use. These measures are too recent to understand their effectiveness, though we are doubtful about the usefulness of short-term training because such efforts have been almost universally unsuccessful (Ryan, 1998; Grubb and Ryan, 1996).

81. In general, there are three ways of strengthening connections between education and employment. The first is to inform students about the labour market, the kinds of jobs available, and the forms of educational preparation for all these jobs. Adequate student information might, for example, reduce the problem of students in engineering who don't understand that they will work in factories, or students entering the corporate sector who don't understand the importance of languages. More generally, we understand from tertiary educators that many secondary school students are unprepared to make well-informed decisions about the field of study they want to enter in either college or university. Once enrolled, notwithstanding the promising *hakbu* initiative to enable students to defer study concentration,<sup>23</sup> there can be problems in n changing fields of study<sup>24</sup>, and these students often continue in occupational areas which they dislike, or for which they lack some intrinsic competencies.

82. There is general agreement in Korea that career guidance and labour market information in secondary education is not particularly strong, with weak staffing levels and limited training. In addition, an OECD review of career guidance policies in Korea (OECD, 2002) found that school counsellors, when dealing with university and college entry decisions, concentrate largely upon school marks, and pay little or no attention to students' long-term career aspirations. In addition, there are few opportunities for students to experience the world of work, or to come into contact with tertiary institutions, to help their decision making. One option, therefore, is for Korea to strengthen career guidance in secondary schools, particularly by following the models suggested by the OECD review as being particularly effective. We have been particularly impressed with the former Careers Service in England, and by current arrangements in Scotland and Wales, in which a free-standing service focuses on career-related guidance and counselling, without being distracted by the other types of guidance that also takes place in educational institutions. Germany provides a similar example, with a free-standing careers service located within the public employment service that works closely with schools. This option need not be particularly expensive, and it would fit with an overall goal (articulated in Chapter 6) of making the quasi-markets in tertiary education operate more effectively<sup>25</sup>.

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<sup>23</sup> Within a *hakbu*, students can choose any field of study before they declare their major at the end of second year in Colleges and Universities.

<sup>24</sup> Students normally have to reapply to be admitted into a different field of study. This is an institutional practice, potentially changeable, that contributes to the rigidity of the education system.

<sup>25</sup> Throughout this note, we refer to market-like mechanisms and quasi-markets because tertiary education cannot and should not be allocated through a true market, in our view. Although there are "prices" in the

83. Another option is to make transfers among fields of study, and among universities and colleges, more flexible. This would allow students who realize they are in the wrong field of study to change, both reducing these kinds of mismatches and potentially allow greater responsiveness to changing labour markets patterns. The *Hakbu* system is a promising initiative in this regard.

84. A second generic way of connecting educational institutions to labour markets includes a great variety of co-operative arrangement between universities and corporations. Currently Korea appears to have a large number of such efforts; every college and university we visited mentioned some employer connections, ranging from joint teaching to internships to customized training for company employees; and the MOE has funded an office of university-industry relationships in each university. Some universities have “joint degree programmes”, where professors work in industry research institutes, and professors and students alike can participate in industry research. These are all steps in the right direction.

85. One potentially important connection, given complaints that university graduates lack some skills needed in industry (including some firm-specific skills) is the creation of internships and other formats where students learn partly on the job, with university-based learning and firm-based learning somehow co-ordinated. Many (perhaps most) universities have such programmes, but the numbers of students enrolled in them is unknown. One university complained that MOE restrictions on enrolments made it difficult to increase internships, and also noted that not enough companies were willing to provide internships. Many countries have wanted to emulate the German system of apprenticeships and work-based learning, but have been unable to do so because of a weak willingness to participate among firms, a lack of any tradition of tripartite planning necessary to create high-quality internships, and educational cultures hostile to corporate participation. Such partnerships have the potential for reducing mismatches between universities and corporations, but Korea should recognize the need for systematic and long-run efforts in taking this approach.

86. Overall, then, the large number of efforts at creating university-corporate partnerships has not worked well, for some familiar reasons. Traditional university values are not always consistent with entrepreneurial activities; professors have few incentives to be involved in partnerships, partly because the ownership of innovations is unclear; and large corporations with their own research facilities do not need to participate with universities. In addition, there seems to have been little evaluation of these partnerships, so there is little information about which of them are more likely to succeed. We can only suggest: that greater flexibility and autonomy of universities, reviewed in Chapter 6, might help create better local partnerships; that MOE should evaluate the variety of partnerships more carefully, to determine which of them are likely to be effective and which should be abandoned; and that strengthening the roles of universities in basic (rather than applied) research and preparing future researchers are themselves powerful ways of combining the self-interest of universities and the self-interest of employers.

87. In addition, we detected a kind of stand-off between universities and corporations. The human resource staff of a large corporation complained about the skills of recent graduates, and did note a few corporation-university programmes to provide mentors to students and sessions on subjects like problem-solving, the need for foreign languages and presentation skills (like PowerPoint). But the company was not actively trying to work with universities despite their dissatisfaction with graduates, and there seemed to be no forum in which university and corporate representatives could exchange their views freely. We are

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form of tuition fees, parents in Korea are apparently quite insensitive to variation in prices, and there is quality competition but not price competition; equilibrium via price (tuition fees) mechanisms is undesirable and inequitable. The “products” and their quality are too variable and unpredictable, partly because they manifest themselves in the future and vary with the characteristics of students; and the externalities associated with education are too numerous, including those associated with public purposes and those that lead to over-education.

unclear whether there are issues of protocol that prevent such exchanges, or barriers of custom, or lack of interest on the part of either corporations or universities. It's possible that this is a relationship where MOE could use its convening power — its ability to bring together stakeholders over areas of mutual interest — to start discussions that corporations and universities are unable to begin on their own. But until such discussions become routine, one of the most promising ways of linking universities to labour markets will remain weak.

88. A third way to connect educational institutions and labour markets is through credentials and qualifications, which include not only the degrees awarded by colleges and universities but also the parallel licenses required in Korea to enter certain professions and trades. When qualifications work well, they co-ordinate the demands of employers, the expectations of students, and the offerings of education institutions: employers can specify the competencies they require for employment; educational institutions can prepare students with these competencies (or with the general competencies best taught in formal schooling); and students know what competencies they are expected to master in their schooling in order to become employable. Perhaps the best examples of such qualifications exist in Germany, Austria, and Denmark, where tripartite planning councils — including employer representatives, trade unions and governments — jointly plan licensing exams. But if the interests of any of these three stakeholders are missing from the planning process, then qualifications may not operate to co-ordinate the expectations of all participants, and something is likely to go wrong.<sup>26</sup>

89. From what we can tell, the development of licensing exams in Korea is more likely to adhere to this tripartite model, while the development of education credentials is determined almost entirely by the faculty in universities and colleges — the problem, common in many countries, of supply-driven degrees. The alternative would be to make greater use of tripartite planning mechanisms in setting the standards and the requirements for all college and university degrees. For example, colleges would use local employers and employee or professional associations to help set standards and graduation requirements; regional universities would rely on regional advisory boards, and national universities would use national representatives of employers and professional associations.

90. In the further development of degrees and licensing, a national qualifications framework might be helpful in Korea. These frameworks establish uniform expectations for the duration and content of various degree programmes, and can also specify the process by which degree requirements are developed. Korea also has what is in effect a framework, requiring two to three years for an associate degree, and four to five years for a baccalaureate, though there is some variation among institutions in which fields require a longer period of time. However, degrees can be further distinguished in terms of the knowledge and skills required; for example, in the Australian Qualifications Framework ([www.aqf.wdu.au](http://www.aqf.wdu.au)) an associate degree is expected to include the fundamental underpinnings of one or more disciplines, including understanding and interpretation of key concepts and theories, and the development of skills in comprehending and evaluating information from a range of sources; this operates to prevent the associate degree from being only practice-oriented. A bachelor's degree should lead to the acquisition of a systematic and coherent body of knowledge, and to the skills needed to undertake research, involving studies in a field in which a significant literature is available. A qualifications framework like this might help enhance the quality of some tertiary programmes in Korea. Such a framework could also be useful in avoiding qualifications inflation and over-education; for example, the Australian definitions of degrees would clearly prevent

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<sup>26</sup> For example, England has generated a vast number of qualifications (NVQs, GNVQs, foundation degrees) in an attempt to create order from the chaos of its prior system; but since it has failed to include employers in designing these new qualifications, employers have not used many of them and they lack any labour market return (Grubb, 2004). In effect, England has no theory of qualifications to guide its actions, and the result has been only to add to the chaos.

universities from offering baccalaureate programmes (like cosmetology) that should really be associate degree or high school programmes.

91. A second option is to eliminate the parallel system of licensing exams, or to incorporate such exams into the graduation requirements for degrees. (Indeed, several of the universities that we visited require students to pass licensing exams before they receive a degree, and such universities appear to offer courses specifically designed to facilitate passing licensing exams.) Whether combining the degree and the licensing systems is feasible in all occupational areas is, of course, something for Koreans themselves to explore. But a broad qualifications framework might integrate the current dual system, which strikes us as inefficient in the sense that students need to learn in two different ways (in educational institutions and in tutoring programmes) in order to enter occupations, as well as being potentially inequitable if the costs of tutoring programmes are high. And the effort to bring more stakeholders into the development of qualifications might eliminate some of the mismatches now present in tertiary education.

## CHAPTER 4

### THE ELUSIVENESS OF QUALITY IN TERTIARY EDUCATION

92. There is a general consensus in Korea that the quality of tertiary education has suffered with its substantial expansion during the 1980s and 1990s. However, there is apparently no agreement on the meaning of quality, or how to measure quality, or which dimensions of quality have suffered. There are conceptions seemingly related to quality that have pervasive effects — for example, the status rankings of universities and the frantic efforts to get into the “best” universities — that we suspect are not closely related to other dimensions of quality, such as the richness of learning experiences that develop personal and work-related skills and values. In several other countries, the desired outcomes of higher education are described in national qualifications frameworks, and reference is made to these intentions in the design and evaluation of curricula. Despite the concern about quality, the quality assurance (QA) mechanisms<sup>27</sup> in Korea seem weak — the efforts of the QA agencies are process-oriented, and well-developed QA mechanisms do not seem to function uniformly at the institutional level, in individual colleges and universities. In this chapter, we first clarify the many meanings of quality in the Korea system, then examine what is currently being done to enhance quality, and finally suggest some alternatives for Korea to consider.

#### 4.1 The Varied Conceptions of Quality

93. When educators, policy-makers, and employers complained about low quality, we invariably asked them to be more precise about what they meant by quality. The answers were instructive but extremely varied:

- Many observers have complained about the student-teacher ratio, which has increased substantially as the number of students increased without expanding expenditure or staff numbers to the same extent. Over the 1970 – 2004 period, the student-teacher ratio went from 24 to 76 in colleges, and from 22 to 39 in universities, all compared to the OECD average of 17:1. This measurement of quality is related to conceptions of teaching (in Chapter 5), since many observers think that larger classes reduce the quality of teaching. However, in a system dominated by information transfer and lecture, it probably makes little difference whether there are 30 students in a class or 300. Only when teaching shifts to other forms of pedagogy does the student-teacher ratio matter.
- There’s been an increase in the proportion of part-time faculty, in both colleges and universities. In colleges this proportion has increased from 57% in 1995 to 66% in 2004; in universities the

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We use the European term “quality assurance” to refer to institutionalized efforts to maintain and improve quality; see Kis (2004) for a review of OECD practices. We understand that the term “university evaluation” may be more common in Korea.

increase has been from 47% to 55%. In general this trend has been intended to reduce costs,<sup>28</sup> though the higher proportion in colleges than universities may be due to the tendency to hire part-time individuals from industry with more extensive experience and useful knowledge in vocational programmes. There hasn't been much attention to this trend, but often part-time faculty are less available to students and participate less in the intellectual life of an institution so this — like the declining student-teacher ratio — might be a cause for concern. On the other hand part-time faculty may also be more experienced in the 'real world' and have a more realistic view of useful knowledge.

- With the growth in student enrolments there has been an increasing diversification of the student body, including those drawn from the vocational high school system. Hence, there is wider variation in the readiness of students for academic study and a consequential need for greater variety in ways of teaching in order to promote effective learning. As growth in the size of the student population stabilises, the opportunity arises for giving greater attention to improving the quality of teaching and learning.
- There are general complaints about low levels of academic achievement among students. These complaints (particularly among professors) are both about the quality of entering students and about the accomplishments of students while in university; the latter problem may be linked to a widespread perception that tertiary students do not work particularly hard. There has been some discussion of introducing a SAT-like exam to reduce the problems of under-prepared students, but this seems like a puzzling and ineffective response: the CSAT now is intended to do this, and certainly the amount of tutoring for the CSAT could not possibly be increased because of a different exam.
- The World Competitiveness Yearbook ranked Korea 59th of 60 countries in its tertiary education system, whereas overall Korea ranked 29th of 60 — suggesting that tertiary education is detracting from Korea's competitiveness.
- All universities and colleges have systems where students rate the quality of courses they take, and these are widely mentioned as indicators of quality. Student rating systems, when appropriately constructed, can certainly be useful; however, there are also well-known problems with student ratings, particularly the ways they are influenced by irrelevant factors like the ease of grading, the joviality of the teacher, and sometimes his or her looks (Gray and Bergman, 2003). Therefore using student ratings as the only indicator of teaching quality seems unwise. In addition, we could not determine that these ratings influence anything — neither faculty promotions, nor attempts to improve teaching, nor rankings of universities and colleges. In the absence of any actions taken on the basis of student rankings, we consider these largely symbolic efforts in institutional QA systems. Overall, student feedback measures are not formalized and the results are not systematically built into performance-based funding or other QA mechanisms.
- Most educators in Korea believe that the completion rates of colleges and universities are quite high, close to 100%. But we are not so sure: there are no national figures on completion rates, and the figures on enrolments suggest that completion rate of the class entering universities in 1999 was about 77%, and that this rate has been falling<sup>29</sup>. In addition, stop-out rates, or students

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<sup>28</sup> Part-time teachers are also much more likely to be female than are full-time teachers, and if women are paid less than men this is another way of reducing costs.

<sup>29</sup> For example, there were 244 852 university graduates in 2002, compared to 319 278 new enrolments four years earlier, suggesting a completion rate of 77%; the comparable rate for those entering in 1994 was 83%, suggesting that completion rates fell over this period. Unfortunately, this is an extremely crude way

taking leaves of absence, have been increasing, and some of these students may not return to their studies; this also suggests that completion rates have been falling. It's reasonable to think that completion rates vary among institutions and fields of study, but such information is also unavailable.

- There's a great reliance on the employment rates of college and university graduates. This is an outcome measure, to be sure, connected to employment goals, though we note (footnote 13) that it is inaccurately measured. In former periods, quality might be measured by the expertise of professors, but occupational concerns and employment have become more important.
- As in all countries, measures of research are used to denote quality — both the amount of research grants and the numbers of papers written by faculty, arguably as a measure of scholarly expertise. These measures are surely relevant to post-graduate students engaged in research training, but not necessarily to undergraduate students.
- One government official said simply that “Seoul National University isn't Harvard”, meaning that the reputation of Korea's highest-ranking university is not equivalent to the world's highest-ranking university. This is, of course, an extraordinarily high standard of comparison; but as an indicator of quality it seems to refer to an institution with prominent research, world-class graduate schools, and substantial undergraduate programmes, a comprehensive university that is quite different from the government's suggestions for universities to specialize. This conception of quality is also related to goals of having 15 “world-class” universities within the next decade or two.
- Several students noted that the most important people in Korea have graduated from the top three universities, from which they have inferred that these are the highest-quality institutions. But this is part of the reliance on a system of status that does not necessarily reflect quality. There is, to be sure, a self-justifying cycle at work here: (1) high status institutions attract the top-performing students; (2) top students add to the learning of others via their standards of performance; (3) high-status employers are attracted to the graduates of institutions that admit from the elite applicant pool; (4) more highly talented students express preferences for institutions whose graduates find the best jobs. But the perpetuation of a system of high status universities may mean only that the selection mechanisms work well.
- We are unconvinced that the highest-status universities are the highest-quality universities, thinking of quality in the value-added sense of how much students learn. The amount of work that students do in many universities is quite low, and indeed there is a prevailing complaint that university students, after the pressures of college entrance exams, don't work very hard. Teaching seems to be dominated by information transfer; and in many (but not all) universities learning seems to be limited to classroom teaching, rather than extending to a broader variety of experiences including internships, study terms abroad, and the like. There are no measures of learning we could find, not even at the institutional level, so there is no way for students to judge the quality of institutions except by status rankings. Some education officials acknowledged that there is substantial discontent with the elite universities, a sense that their claims to status may be undeserved because quality of practice is not demonstrable.

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to measure completion rates, and if students take longer to complete university courses than four years it may not be valid. However, in the absence of longitudinal data these are the only estimates available.

- Status rankings seem to apply to entire universities, not to particular departments. It's reasonable to think that departments within universities vary in their quality, but there is no systematic ways for students to learn about such variation.
- As in many countries, there are complaints from industry about the quality of graduates (as we documented in Chapter 3), and complaints among professors about the quality of students entering tertiary education despite the enormous efforts made to score well on the CSAT.
- As is true in most countries, colleges have much lower status than universities. Sometimes students choose to enrol in college because they prefer to go into employment quickly, but to a great extent the students who enrol in colleges are those whose CSAT scores are not high enough for universities. However, in some respects colleges may be of higher quality than universities: some of them have a variety of teaching methods, including team-teaching, project-based learning, and workshops. Again, status is not the same as quality.
- Because most Koreans seem to want to live in Seoul, the status of institutions in Seoul is higher than those in the rest of the country. This is, of course, part of the larger problem of regional differentials, which we examine in Chapter 8. However, a common complaint is that the attractiveness of institutions outside of Seoul is low, and many of them have a hard time filling their quotas of students.

94. It's possible that institutional data is better than national data; for example the employment statistics of Ansan College indicate the number of graduates from each department who are employed in a job related to their major, in an unrelated job, and not employed — though many of the latter group are “preparing for employment”, presumably by studying for licensing exams. The college's employment rates for 2004 graduates range from 94% in nursing — a high-demand field in many countries — to 31% in radiological technology; for those employed, the proportion in related employment ranged from 100% in clinical pathology and radiological technology to nine per cent in internet information systems. These figures provide better information than national averages do on several employment outcomes, not just for the entire institution but for specific departments.

95. Overall, then, there are many different conceptions of quality. Some of them refer to input measures, like staff-student ratios and the quality of incoming students; some refer to outputs, like employment rates (properly calculated, one hopes) and the skills of recent graduates; others are related to research; many statements reflect a conventional status ranking, though its relationship to any other measures of quality is unknown. There's every reason to be concerned that the expansion of tertiary education, as well as other recent changes, taken together have caused a drop in quality, but exactly what quality means remains unclear. Certainly, in considering quality there needs to be greater attention given to quality in teaching and learning and research outcomes, as well as to inputs and to output indicators.

## **4.2 National Mechanisms of Quality Assurance**

96. At the national level, quality assurance in Korea relies largely on accrediting mechanisms, where different institutions are accredited or evaluated by one of several agencies: the Korean Council for University Education (KCUE), the Korean Council for College Education (KCCE), the Korean Education Development Institute (KEDI), the Accreditation Board for Medical Education in Korea (ABMEK), the Accreditation Board for Engineering Education in Korea (ABEEK), and the Accreditation Board for Nursing Education in Korea (ABNEK). Accreditation procedures vary among these different agencies. For example, university accreditation by KCUE is voluntary, and it is unclear what advantage there is (if any) to being accredited. Institutions wanting to have their academic programmes accredited go through a self-evaluation; then there is a peer review based on site visits of two to three days, with a point system used for

various criteria (e.g., management and finance, vision and strategy, research and industry-academic cooperation, and the like). Then a programme is judged to be accredited or not accredited, though the results of more detailed judgements are given to university administrators rather than being made public. In this process, there are minimal roles for students and external stakeholders. A uniform standard is applied to all institutions, regardless of their mission or institutional type (criticised as “one size fits all”).

97. There have been many criticisms of the existing “system” of QA. One is simply that a large number of agencies are involved in accreditation, without a coherent framework. Another is that accreditation, which is largely voluntary, lacks any legal status, and is often seen as a compliance exercise rather than a crucial method of improving quality — a problem with all forms of QA (Kis, 2004). A third is that the results are not particularly transparent, and provide the public — especially prospective students and employers — with no real information about the quality of institutions or of the individual departments in them. As part of this critique, employers noted that the process of peer review involves professors judging institutions, and they are unlikely to know much about links to employers and the community. As no institution has ever lost its accreditation, there is no demonstration to the public of the application of quality standards. Finally, as the accreditation agencies are all linked in some way to different sectors of tertiary education — to universities, colleges, medical schools, and so on — there is the risk of compromising the independence of quality evaluation and reporting.

98. In addition, there is one private and unofficial form of “quality assurance”: the JoongAng Daily publishes an annual ranking of universities and colleges, following the kinds of procedures developed by U.S. News and World Report for American universities. These procedures have been widely criticized in the U.S. for their lack of both validity and reliability, and they have enabled universities to “game” the system by exaggerating the numbers that affect the final rankings. On the whole, we think that the idea of allowing quality to be measured and publicized by a private newspaper is not a sound approach to QA.

99. In response to various criticisms, legislation that would authorize an independent accrediting body has been proposed, though this failed to pass in November 2005. The failure may stem from several kinds of opposition: doubt that a government agency could be truly independent; a sense that QA would not be necessary if the market were allowed to work; and the perception that the alternative proposed in legislation would not have any clear advantages over existing arrangements. The National Assembly asked MOE to refine the bill, so the idea of revising current accreditation procedures was still alive at the time of writing. In the concluding section of this chapter we will offer some alternatives to consider.

### **4.3 Institutional Mechanisms of Quality Assurance**

100. An alternative to national accreditation is for individual institutions to develop their own QA mechanisms. Indeed, there is an enormous variety of institution-specific efforts to enhance quality. The top research institutions we visited tend to hire professors with foreign (especially U.S. and British) Ph.D.s, and require publication for promotion, in order to enhance the research they undertake. Individual institutions have undertaken many small efforts to improve quality, though these seem uneven and idiosyncratic. Some universities have developed their own systems of what are in effect department-specific standards; for example, Korea University has developed a system where individual departments specify a range of courses that students should take before graduation, along with internships and other experiences appropriate to different departments. Ansan College and several other colleges have used a form of job analysis to create their curricula with the help of industry representatives; job analysis involves specifying the various skills required in particular jobs, and then making sure they are taught

appropriately<sup>30</sup>. And a number of institutions have developed teaching and learning centres to help staff to improve the quality of their teaching, as we note in the next chapter.

101. These institutional mechanisms of QA seem highly variable and idiosyncratic. The only mechanism of QA that seems relatively universal is student evaluation of courses and teacher performance. However, students themselves think this is merely a compliance exercise, most institutions do not appear to use the results for any form of improvement, and student evaluations are in any event subject to many different types of misperceptions (Gray and Bergman, 2003). Overall, institutional approaches to QA seem to vary substantially. A major concern is that this variation in method masks variability in Korean standards of performance, and obscures the need to make improvements in particular areas.

#### **4.4 Alternative Approaches to Quality Assurance**

102. The development of QA mechanisms has been a difficult and contentious issue in many countries, even those with longer histories of such efforts (Kis, 2004). However, we think it crucial for Korea to confront the need for QA since we do not think that the quasi-market in tertiary education can take care of quality through student and employer decisions. Basic information about quality is now lacking and the incentives for improvement are therefore weak, especially in a system where the demand for tertiary education is so strong. So market forces are by themselves inadequate to enhance quality, particularly in a system where there is so much variation.

103. Several priorities should govern the establishment of a national QA framework. The first of these is that QA should become a mechanism of enhancing quality, rather than simply forcing compliance with bureaucratic requirements and allowing institutions to “game” the system or misstate their quality. This is consistent with the notion of developmental regulation (see Chapter 6), and requires that a QA agency be able to provide some forms of help — advice and technical assistance certainly, and sometimes short-term funding — for institutions with inadequate levels of quality so that they can improve rather than simply try to avoid punishment. Developing the right culture around QA in turn requires establishing trust between QA institutions and colleges and universities in place of punitive or controlling attitudes on the part of QA mechanisms.

104. A second priority would be to develop a comprehensive framework covering all institutions. The many ministries that now are responsible for colleges and universities — MOE, MOL, the Ministry of Science and Technology — should agree on conceptions and indicators of quality so that the development of tertiary institutions can be co-ordinated and uniform — particularly since the institutions sponsored by different ministries are now competing against one another. A comprehensive framework could then specify some elements — for example, certain data requirements and institutional QA mechanisms — applicable to all institutions, while allowing specialised requirements for certain types of institutions (like engineering schools now accredited by ABEEK and medical schools accredited by AMBEK). Korea, then, along with most other advanced nations, would have in place a national commitment to quality improvement influencing the entire tertiary education system.

105. We think the idea of establishing a single independent QA agency, as in recent legislation, is a good idea, so that QA is not viewed as being subservient to the institutions it regulates. This in turn requires that such an agency receive stable long-term funding and its board of governors or directors include a variety of stakeholders including representatives of faculty, of students, of industry, of

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<sup>30</sup> While job analysis and methods like DACUM may be an advantage over a curriculum developed with no reference to job requirements, task analysis has also been strongly criticized for ignoring the conceptual understanding necessary for expert work, and qualifications based on job analysis have been widely critiqued (as in Australia and England). See Achtenhagen and Grubb (1999) for some of these issues.

professional associations, and of community interests — a broader array than is now represented in accrediting associations. In addition, its staff must be viewed as independent, competent, and experienced in the various aspects of tertiary education, rather than being individuals with general-purpose training in government and public policy like many government staff now are. We do not know quite how to overcome the suspicions that such an agency can never be independent of government, but this should be one of the goals of any legislation, and the suggestions that we have made above on the composition of the board of directors and on funding should help. And establishing a single agency would help correct the current situation in which a variety of unco-ordinated institutions are responsible for QA.

106. A national QA framework and agency could then include at least five elements. One is the specification of accrediting methods, including standards for self-assessment, for different levels of review (self-review, peer review, and external review), for publicizing the results of accreditation so that this mechanism becomes transparent, for specifying issues on which institutions seeking accreditation should improve, and finally for developing a follow-up mechanism to measure progress on enhancing quality<sup>31</sup>. Korea might want to go beyond accreditation — a simple yes/no decision about whether institutions pass certain minimum requirements — to a more complex system of assessment, in which the agency makes graduated judgments (like rankings or groups of institutions of similar quality) about the varying quality of institutions, as JoongAng Daily now does in its rankings. However, such an assessment system is more complex and subject to “gaming” than is simple accreditation, and might be developed over the longer run. It would help for the legal status of accreditation to be clarified; for example, unaccredited institutions might be ineligible to grant degrees or to accept students with loans. Certain other forms of public control could be included in accrediting mechanisms; for example, the criteria necessary for institutions to grant associate, bachelor’s, master’s and doctoral degrees — partly to prevent educational inflation and over-education, as we outlined in Chapter 3 — could be part of accreditation. Finally, in order to promote accreditation as a form of improving educational institutions rather than punishing them, accreditation reports should always include recommendations and options for change.

107. Second, a national QA framework could specify the elements of institutional QA mechanisms. The specific policies would then be developed by individual institutions, but they could be subject to periodic audits by the national agency. This would at a minimum suggest the kinds of activities that all tertiary institutions should undertake, in place of the current situation where institutional practices to improve quality are so varied.

108. Third, the national agency could develop data requirements for measures of quality, in the hope of generating information that would be useful to prospective students, employers, and other stakeholders. These might include both input measures like faculty-student ratios and the proportion of part-time faculty, and outcome measures like completion rates, employment rates (accurately measured), earnings patterns, rates of passing licensing exams, and other measures of learning and employment, specific to fields of study (rather than institution-wide) so that variation within as well as among institutions could be better understood.

109. Fourth, the national agency could develop procedures that, in place of the current “one size fits all” approach, concentrate monitoring and improvement efforts on those institutions most in need of improving their quality. This might mean, for example, a system of priorities where institutions considered to be of lower quality are first in accreditation procedures, or a system where some institutions are monitored more frequently than others.

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<sup>31</sup> Many of the suggestions in this section follow an excellent review of QA practices in OECD countries by Kis (2004). The development of a detailed QA framework would benefit greatly from examining some of the successes and failures in other countries with longer histories of QA.

110. Finally, as education and research become global, quality assurance procedures could be developed so that they can be understood and approved by international partners. There is a great deal of international debate on QA and its procedures, and its emphases change very quickly. It is important for the development of Korean higher education that such international debate and standards be monitored, with increasing interaction with international developments at all levels of QA, in part to be part of discussion about good practice. The inclusion of international experts and international benchmarks might be considered over the long run, particularly if Korea aspires to develop a number of “world-class” universities.

111. If Korea adopted a national framework for quality assurance, including the requirement for colleges and universities to collect appropriate data, that might either eliminate some of the low-quality private institutions or cause them to improve their quality. Similarly, if there are institutions that are inefficient because they are operating below capacity, then widespread understanding of variation in tuition costs might allow students to avoid high-cost, inefficient and ineffective institutions, and might then cause some institutions with excess capacity to consolidate. In essence, an appropriate QA framework would provide the incentives for institutions to behave in optimal ways, and this seems preferable to us — and more consistent with developmental approaches to regulation — than legislation being considered that would require consolidation, a form of regulation that would involve the government in constant battle with private universities.

## CHAPTER 5

### THE QUALITY OF TEACHING AND LEARNING

112. Another dimension of quality in tertiary education is the nature of teaching and learning. As in many countries and especially Asian countries, teaching in Korea is dominated by the pedagogy of information transfer — the transfer of information and procedural knowledge from teacher to student, largely through reading, lecture, drill and practice, and other conventional classroom methods. This approach to teaching and learning is also consistent with the Confucian tradition, of learning from a master. Information transfer is often thought to be an efficient way of mastering a body of knowledge, but it may not foster independent thought, creative and flexible thinking, or critical perspectives.

113. However dominant this approach to teaching may be, especially in tertiary education<sup>32</sup>, there are other approaches that instead stress the student's interpretation (or "construction") of knowledge including the construction of mental models; that recognize the importance of the student participating actively in making sense or meaning of what he or she is learning, and emphasize more conversation and interaction in the classroom rather than one-way lecture; that engage in more experiential learning, from classroom projects, science labs or vocational workshops, out-of-school experiences like internships and other work placements; and that try to build on students' interests, prior experiences, and prior cognitive development in reaching more sophisticated levels of understanding. This approach to teaching is more varied in the techniques it uses, and the teacher must master a range of pedagogical strategies in addition to disciplinary or vocational content — and probably also what has been called "pedagogical content knowledge", the application of different pedagogies to specific areas of study, since constructivist practices in literature and in math, and in history, and in nursing and in business are surely different from one another<sup>33</sup>.

114. In Korea, as in many other countries, the search for alternative ways of teaching and learning have come in part from a recognition that knowledgeable but uncreative individuals — "company men" and docile citizens — are not necessarily the kinds of creative and entrepreneurial people that the country needs. As the president of a prominent university described the problem to us, the world is changing so rapidly that students must be ready for changes and thinking creatively, not merely accumulating knowledge from the past. Sometimes these complaints come from corporations; for example, various representatives of industry stressed the need for problem-solving abilities, the ability to communicate in various forums, and teamwork and co-operative approaches. And so the issue of changing the nature of teaching and learning, in order to foster greater flexibility and creativity, is one of the issues facing Korea, even though it seems to be less widely debated than the concerns about quality raised in Chapter 4.

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<sup>32</sup> In many countries early childhood programs, and sometimes early elementary programs, are dominated by conceptions of developing the whole child and of experiential education, some coming from Swiss educators like Froebel and Pestalozzi. The upper levels of tertiary education are less likely to be influenced by these early childhood traditions.

<sup>33</sup> See, for example, Shulman (1987), on the need for teachers to have content knowledge, general pedagogical knowledge, and pedagogical content knowledge.

## 5.1 The Current Efforts to Improve Teaching and Learning

115. There's widespread agreement that secondary schools teach largely through information transfer. One student expressed disappointed when he did not find more discussion in his university classrooms, and papers in which students are allowed to develop their own perspectives, since he had expected that the university would be less rigid than his tightly-controlled secondary classes. (It's unclear to us where these expectations came; they might be more accurately described as hopes without foundation.) The system of private tutoring reinforces the method of information transfer since tutoring is largely confined to memorizing the facts and the procedures that are on the CSAT exam.

116. When students have been taught predominantly in ways related to simple information transfer, then they themselves can become obstacles to different approaches to teaching. Several professors said that many students coming to the university seem "shy", intimidated, fearful of being thought dumb, unwilling to participate in class discussions<sup>34</sup>; but our interpretation is that they have not been "taught" or socialized to participate in their elementary and second classrooms. Indeed, under these conditions students may come to interpret learning as mastery of facts and procedures, and may resist or fail to participate in forms of learning — based on discussion, interpretation, articulating and defending individual viewpoints — that don't appear to be "learning" as they understand it. If students see their education in instrumental and vocational terms — simply as routes into the best jobs they can get — then they are also likely to focus on narrow and expeditious forms of learning; several students noted that after the fiscal crisis of 1997, when unemployment rates more than tripled, students cared more about going to university to get jobs, rather than about the content and challenge<sup>35</sup>. Such passive roles for students are also consistent with the much older Confucian tradition, as well as with information transfer. While we did not hear much from policy-makers and administrators about the ways students participate in the continuation of passive learning — we suspect that this part of the problem merits further examination.

117. With some important exceptions, universities also appear to be dominated by information transfer. Faculty are generally experts in their disciplines; unlike elementary and secondary teachers, they have no preparation in pedagogical approaches. The students we interviewed confirmed the domination of lecture and the lack of student participation, including discussion. The increase in the student-teacher ratio means that many more classes are likely to be large lecture classes.

118. The dominant way of evaluating the quality of teaching in Korea is the system of student evaluation of courses and performance evaluation of teaching staff. Repeatedly, in response to questions about quality assurance mechanisms, we were told about this method of judging teaching quality. However, we were also told that, while students' evaluations might affect the status of part-time teachers, they do not affect the hiring or promotion of full-time professors, because the student evaluations are not part of what is primarily a quantitative approach to the performance evaluation of teachers; indeed, several professors said that they were never given their student evaluations. Notwithstanding the inherent limitations of student feedback, we think that the evaluation of teaching performance in Korea needs to be improved; the focus of the current approach is on how much teaching gets done rather than how good the teaching is and how well the students are learning. Some indicators of teaching quality, including student feedback, ought to be included in future performance appraisal.

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<sup>34</sup> Similarly, the rapporteur gave a lecture at Korean University, and was unable to get any students to ask questions and make comments despite inviting them to do so persistently.

<sup>35</sup> There's evidence in other countries of students, and especially working-class students, with overly instrumental, vocationalist, and passive approaches to learning. See Cox (2004) for the U.S. and the many comments in England about "new students" with practical and utilitarian attitudes.

119. To be sure, there are centres for teaching and learning on many campuses, though we were unable to determine how prevalent these are. Those that we saw seemed to consist of one or two people who help professors with such issues as using multi-media and other technology (particularly for older professors unfamiliar with such technology), and delivering effective lectures; for example they may videotape professors in their classes to give them feedback. However, the subjects covered in these centres seem to have little to do with pedagogical alternatives like the greater use of discussion and seminar formats, questioning techniques (even in large lectures), the potential of problem- and project-based learning, the roles of labs and workshops (for sciences, social sciences, and occupational subjects in particular). No doubt the topics incorporated into these teaching centres vary substantially, but we suspect that most of them are related to different forms of information transfer, rather than providing university teachers with a broader range of pedagogies.

120. In some universities faculty senates have asserted that faculty should move away from lecture-intensive methods, and indeed some universities have created seminars to do just that. By and large, however, faculty groups are concerned more with budget and salary issues, buildings and facilities, and governance issues including university autonomy, so their attention to pedagogical issues is limited.

121. In addition, the university system in Korea is large enough so that there are some powerful exceptions. Handong University in Pohang is funded by a number of Christian churches, and it has adopted a form of teaching that is quite different from information transfer, with team teaching, project-based learning, and students working in groups. However, while Handong Universities has tried to promote its methods in other universities, it seems to be an exception to general patterns.

122. It is possible that colleges are more successful in their teaching approaches than are universities. In general, colleges place greater emphasis on teaching rather than research. The one two-year college we visited, Ansan College, stresses a series of vocational programmes including health programmes, business, IT fields, design and animation, and family-related programmes (like early childhood education, food and nutrition, and family welfare). All of these have labs or workshops or “hands-on” or project-based learning, in addition to classroom teaching. Many of them use team teaching, where a teacher from the college and one from workplaces teach together. Many students take some kind of internships or work placement; some departments like nursing and health care require internships for graduation, and in business about 80% of students get them. Employment in the summer between the first and second years also seems common. The administrators in this college were also more comfortable discussing a range of teaching methods. In several ways, then, this college provides a greater variety of educational experiences, compared to universities dominated by classroom learning.

123. However, there is substantial variation among colleges in the nature of teaching and the connections to the local community, so it is possible that the teaching approaches at Ansan College are unusual (just as teaching methods at Handong University are quite different from most universities). Only much more detailed research, including direct observation of teaching, could provide enough information about teaching practices throughout Korea to know whether the interesting approaches we saw at Ansan are typical or not.

## **5.2 The Challenges in Changing Approaches to Teaching**

124. From the experiences of other countries, changing teaching methods is quite challenging, especially at the university level where professors are committed to their disciplines and the challenge of “coverage” — or covering all the material thought important to their discipline — leads to a search for efficient techniques. Short and infrequent efforts to change teaching — for example, the kinds of short demonstrations that centres for teaching and learning may develop — are unlikely to work; sustained efforts, with constant feedback to teachers trying to change their teaching, are necessary (Little, 2005).

Changes are certainly possible, but they would require that centres for teaching and learning on all campuses emphasize different approaches to teaching — rather than topics like how to organize lectures, worthwhile as those might be — and work with all faculty (particularly new faculty and part-time faculty) in sustained ways. Other approaches — for example, national discussions among universities and colleges about teaching methods, and more research on the effects of different pedagogies as part of a greater attention to evaluation in general (raised in Chapter 11) — would help make the issue of teaching methods more familiar than it now is.

125. However, it might be difficult to change teaching methods only in universities. If elementary and secondary schools teach predominantly in conventional ways, then students entering university will not be prepared to be taught in quite different ways. If tertiary entrance requirements, as expressed in the CSAT, emphasize factual recall and simple mathematical or scientific procedures, then students will assume that this is what universities want, and tutorial sessions will reinforce this perspective. (Similarly, since the CSAT seems to stress a narrow set of subjects, changing secondary teaching may require changing the structure of the CSAT.) Changing teaching methods in tertiary education would be much easier, then, if there were simultaneous steps to modify elementary and secondary education. This in turn might change the approaches of teaching universities, as well, so that elementary and secondary teachers are prepared to teach in a greater variety of ways. But conversely, it might be difficult to change teaching, at least at the secondary level, if university entrance standards continue to be dominated by factual recall and procedural knowledge. This is an area where practices in parts of the entire education system reinforce practices in other parts, and it may therefore be necessary to change all institutions in the system at roughly the same time.

126. However, we stress that — difficult through changing teaching may seem — there are already practices in Korea to build upon. There are already universities and colleges that use more varied, more conceptual, and more experiential methods, and can help spread these practices to other institutions. There is already a network of centres to improve teaching and learning, and they can be used to focus more explicitly on methods of teaching than is now the case. And, above all, there has been an articulation, from corporations and educators alike, of the need for individuals who are more flexible, more creative, more innovative and adventuresome in their thinking than Korea's system now encourages. Changes in approaches to teaching and learning are one powerful way to accomplish this national goal.

## CHAPTER 6

### GOVERNANCE AND REGULATION

127. As the tertiary education system in Korea has expanded, largely in private universities and colleges, the issues of governance and regulation have become more complex. This is, more than any other area, the issue that involves the balance of public and private control, the extent of government influence versus market mechanisms. The issues of governance and regulation take several specific forms, which we address in subsections of this chapter. It seemed to us that Korea has developed a top-down system of control of universities and colleges, and that, despite efforts to accommodate differences among institutions, this tends on the whole to limit opportunities for flexibility and innovation in private and national/public institutions. There are alternative forms of regulation that we suggest might do more to develop the capacities of tertiary institutions; we favour a developmental approach to regulation rather than a compliance approach, one that can steer market-like mechanisms in tertiary education to work well rather than constraining them.

128. In addition to examining the relationship between government and tertiary institutions in this chapter, we raise issues about the structure of the national government itself and the various ministries that influence tertiary education. Many of the reforms that policy-makers want to pursue would be, we suspect, more effective if there were different structures within the MOE and more co-ordination and communication among ministries.

129. Market-like mechanisms inevitably dominate tertiary education in Korea. The great majority of institutions are private; students choose institutions and institutions choose students in a market-like system where supply and demand are powerful forces; and many funding policies that exist — for example, the relatively small amount of governmental revenue in the system, the dominance of loans that enhance student/consumer choice — also enhance a market-like system rather than replacing it with a more fully public system, as exists in some European countries (the Scandinavian countries, Germany and Austria, for example). There is, then, no choice in the near future about having a tertiary education system dominated by market-like forces; the only question is whether government works to enhance the positive elements of markets, or whether it limits the operation of markets in detrimental ways.

#### 6.1 The Current Forms of Governmental Control

130. As we documented in Chapter 2, the current tertiary system is dominated by private universities and colleges, which were allowed to expand substantially during the 1980s and 1990s. However, the MOE has regulated private institutions in a variety of ways. One form includes the “three nots” policy, designed to promote equity and fairness: universities cannot give their own entrance exams; they cannot prefer some high schools over others, even though there are substantial differences; and they cannot admit students on the basis of their parents’ monetary contributions to the institution. In practice, these policies limit institutions in developing their own admissions procedures, and we heard several complaints from private universities about the restrictive impact of the “three nots”. A number of institutions indicated that they wish to be more able to differentiate their offerings and attract the best students from the talent pools that are most suited to those offerings. Some were concerned that student choice is being overly distorted by

the pressures to get into the highest-status universities. Over-reliance on a single, national admissions test, in a status-driven culture, not only places disproportionate burdens on the lives of young people during their formative years, but it also distorts the distribution of talent within the society and across the labour market. Some students end up taking courses for which they have little interest or aptitude, while others who have the potential to excel in their careers start off too often, regrettably, with a sense of failure. If instead universities and colleges could control their own admissions policies, then they might develop specialties that would give prospective students more options from which to choose. However, we caution against eliminating the “three nots” and other forms of regulation too quickly, without putting in place other mechanisms to enhance transparency and improve the governance of higher education.

131. In addition, the MOE has a system of quotas on enrolments for those universities and colleges within the Seoul area. This is intended to redistribute the student population to outlying areas, but what it has done in practice is to make enrolments sticky — rather than responsive to changing labour market conditions<sup>36</sup> — and it has intensified the competition for places in Seoul. As we argue more fully in Chapter 8, education policy by itself is unlikely to contribute much to the distribution of employment and population within Korea, so these quotas may cause more problems than they are worth. There are other problems that enrolment quotas might help solve, like the pressures for over-education and institutional “poaching” that we identified in Chapter 3, but we are unsure that the goal of balancing Seoul with other regions is now being well-served through quotas that restrict the supply of places artificially.

132. Many other regulations still existing, even after an easing of regulations after the 1990s. The government has introduced limits on student-teacher ratios, with different ratios by field of study. Brain Korea 21 (BK21), a national programme to enhance research universities and support post-baccalaureate students, required participating institutions to reduce the number of students in order to focus their efforts on research. Institutions are also concerned that they will lose research support from government if their tuition fee increases exceed ten per cent per year. Other regulations govern the length and terms of educational programmes, the types of studies offered, the conditions for re-admission, limitations on the ratio of day and night students, regulations for transfer programmes and the conferring of degrees, restricting research funds to experimental fields, the procedures for appointing professors and visiting professors, and reporting requirements. While the most persistent complaints are reserved for the “three nots”, other restrictions exist as well.

133. We believe that more needs to be done to ensure the conditions necessary for market-like mechanisms to operate effectively. For example, information about prices are crucial for students/consumers to make rational decisions in markets; yet information about the level of tuition fees in universities is not publicly disseminated by the public agencies that collect the information. Since the JoongAng Daily has collected this information and publishes it annually, this restriction is now irrelevant, and MOE should now publish accurate information about tuition fees and other costs regularly. In addition, there are many other kinds of information that students could use to make rational decisions; information requirements like accurate employment rates by field, earnings of graduates, rates of completion, and the results of institutional quality assurance mechanisms would help the market work as it should. Such information by field would also allow students to judge the quality of specific departments, rather than assuming that all departments within a high-status university are of high quality. This might in turn cause

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<sup>36</sup> For example, 40% of university enrolments in 1990 were in natural science and engineering, and 42% in 2004; in medical fields the proportions were 4% and 4%, despite increasing needs for health care in an ageing population; the fraction in the social sciences stayed constant at 28% in 1990 and 27% in 2004. Enrolments in colleges over this period show a decrease in natural science and engineering, from 54% to 46%, and a corresponding increase in arts and athletics, from 9% to 16%. These patterns do not follow either labour market demand or national priorities.

students to prefer departments in a wider variety of institutions, and in both colleges and universities, rather than concentrating them in the highest-status universities.

134. To be sure, certain problems in the private sector require regulation. In particular, there seem to have been cases of fraud and embezzlement, for example in institutions founded by individuals whose boards were composed largely of family members, who then extracted revenues from the institutions in illegal ways. However, the need to monitor some institutions carefully should not become a rationale for regulating all institutions uniformly. Instead a system of more flexible and developmental regulation (or “soft-touch” regulation<sup>37</sup>) might rely on institutional self-assessments and QA mechanisms, with the goal of enhancing the quality of educational institutions. The MOE would then establish criteria for these assessments and for data to be collected and disseminated, but it would confine its regulatory efforts to those institutions and issues that are particularly troubling.

135. In effect, we are proposing a multi-stage conception of regulation, operating more as developmental regulation than as conventional control. The stages can be seen as the following sequence:

- An initial stage would foster improved quality by requiring that institutions develop their own quality assurance mechanisms, subject only to auditing by the government to be sure that institutions are transparent.
- Another stage would enhance the transparency of tertiary institutions by developing and publicizing information about tuition fees, performance, outcomes, and the like, enabling students to make better decisions among the many institutions and their departments.
- In place of the current quota system, which limits flexibility and responsiveness, a different quota system is necessary to limit institutional over-education, by allowing different types of institutions — research universities, educational universities, colleges, and other training programmes — to give only certain degrees. For example, some degrees might be limited only to institutions that undertake related research, and some vocational subjects might be limited to either secondary schools or colleges. Such practices need to be tied to the introduction of a qualifications framework, so that the institutions are required to demonstrate that the degrees of different types that they offer – master’s, bachelor’s, associate degrees – meet certain objective criteria..
- Other controls would be imposed only when these other kinds of regulations have failed. For example, tuition fee constraints might be imposed only with evidence of unwarranted tuition fee levels; consolidation of institutions would be required only with better evidence of institutional over-capacity harming student interests. These controls would then be applied by exception — that is, to specific institutions that appear to be violating acceptable practice — in place of the current “one size fits all” approach that restricts both high-quality and low-quality institutions alike.

136. This kind of developmental regulation would require the MOE to engage in certain kinds of new activities — specifying the data that would be truly useful to inform students and to monitor (but not

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An earlier OECD report on early childhood programmes (OECD, 2001) referred to a Finnish “soft touch” approach to regulation, and this proved to be an accurate description of its regulation of all education (OECD, 2005). Finland relies on the competence of municipalities and educational institutions to respond to educational challenges, rather than imposing requirements to make sure that institutions do what they should. Policy, including governmental expenditures for facilities and technical assistance, are then designed to enhance this competence.

control) quality, specifying the procedures for self-assessment and then discussing potential problems with individual institutions, and creating a qualifications framework to outline requirements for different levels of qualifications — and therefore would require a transformation of how the MOE operates, as we conclude in the last section of this chapter. But it would enable institutions to operate more flexibly and cause the market-like choices of students to regulate the quasi-market in tertiary education, rather than assuming that the MOE can or should regulate institutions directly.

## **6.2 The Issues of Institutional Governance**

137. At the same time that private institutions have been regulated, national universities have been controlled in other ways. In particular, these public institutions are part of the Ministry of Education and Human Resources Development, which means that the head of a national university's administration is an employee of the Ministry rather than the university. In effect there are divided lines of responsibility. In contrast private universities and colleges have their own boards, which determine the overall priorities of the institutions and choose their presidents. In addition, both KAIST (funded by the Ministry of Science and Technology) and the Korea University of Technology and Education (75% funded by the MOL) have their own boards and greater institutional autonomy than the national universities that are controlled by the MOE. These are good examples showing that a publicly-funded university need not be publicly-operated, and can develop innovative approaches to teaching and learning under self-governance.

138. There has been a movement toward institutional autonomy for national universities. We think this is the right direction to take, and the benefits to public universities should be substantial including the BK21 initiatives, the R&D budget, greater responsiveness to industry and the community, and the possibility of greater differentiation and specialization of institutions. We should note that the transition to greater institutional autonomy will probably take a good deal of time, and the MOE may need to provide transitional support in the process. But the results should be stronger institutions able to pursue distinctive strategic directions and collaborate more fully on the international stage, and a more diverse and responsive higher education system for Korea.

139. Under a developmental or 'soft touch' approach to regulation we have outlined, tertiary institutions would be responsible for developing better data systems, for developing their own quality assurance mechanisms, and for carrying out the institutional self-assessments to report developments to prospective students, the public, and the MOE. In some ways these are more demanding than the reporting requirements universities and colleges now face. But they would be oriented more toward improving quality than to constraining behaviour, more to informing the market than to following MOE rules.

## **6.3 The Internal Governance of the Ministry of Education and Human Resources Development**

140. While the country visit did not spend a great deal of time examining the structure of the MOE, there appears to be a great deal of fragmentation within the Ministry and its policies:

- There are eight different student loan programmes, varying in which government agency sponsors them, who is eligible, and what the repayment conditions and interest rates are;
- There are many sources of research funds;
- A number of small projects have tried to link both colleges and universities with local communities;
- A large number of efforts have tried to strengthen regional universities and make them the centres of regional innovation;

- There have been many education reforms started by the MOE, at least one in most years and two in some year; we do not, however, have any information about how well these reforms worked;
- There appear to be many separate divisions within MOE — the Background Report describes 12 major divisions for tertiary education alone. This sometimes works to limit possibilities; for example, the divisions concerned with tertiary education are separate from the Lifelong Education Policy Division, and the use of tertiary institutions for LLL — for example, by opening up colleges to older students and encouraging more flexible schedules — may therefore be more difficult; and
- There is a committee that tries to co-ordinate the activities of various divisions, but often such committees are relatively weak because the divisions they are supposed to co-ordinate have more power and resist co-ordination.

141. Overall, we suspect that consolidation in several forms might be appropriate: consolidation of loan programmes, consolidation of grant programmes, and consolidation of divisions within MOE.

#### **6.4 Consistency and Communication Among Ministries**

142. In addition to problems in communication within MOE, we suspect that there are similar problems among different Ministries with interests in common. For example, the MOL has supported the Korean University of Technology and Education, initially to provide teachers for labour market programmes but increasingly to provide conventional baccalaureate degrees. KUT has developed some interesting approaches to teaching, particularly project-based approaches to supplement textbook training, team teaching, well-equipped labs where students conduct experiments, simulations, a six-week senior project to invent a creative object, that might also be marketable, a requirement to take at least six (of 150) credits in on-the-job training, and another to take courses in teaching methods — a remnant of the days when most students went to teach in training centres. In addition, students are able to change their direction within KUT, particularly away from preparation for teacher training (since demand is dwindling due to the demographic decline) toward corporate work, a good example of such flexibility. Other universities might benefit from understanding these teaching approaches — but there currently seem to be no mechanisms for exchanging information among MOE universities and the MOL university.

143. At the same time, the development of a new university at public expense, with three quarters of its revenues from MOL, seems unwarranted when many people think there are too many universities in Korea. There's another curious development illustrated by KUT: Originally it was intended to provide teachers for short-term labour market programmes located in 50 training centres, but some of these are being converted to 23 polytechnic universities granting associate degrees, and competing directly with colleges operated under the MOE. Because of MOL subsidy, the tuition fees in the polytechnics are roughly half of those in private colleges, providing them with a competitive advantage. The rationale for the polytechnics is that there is need for more vocational education to combat a shortage of craft skills; in addition, the polytechnics reportedly provide more experience-based teaching methods while colleges are more focused on theory — replicating the familiar divide between theory and practice (rather than trying to bridge this divide by co-operation between MOE and MOL). But vocational education is currently being provided by colleges as well as some universities that have “invaded” the vocational territory of colleges. The lack of a substantial earnings advantage for associate degrees suggest that there isn't a shortage of vocational education. Instead, we interpret the expansion of polytechnics, as well as the development of KUT itself, as examples of “institutional drift”, where institutions with a clear but limited purpose become general-purpose educational institutions in order to enhance their own stature. Again, in a country where there are too many tertiary institutions, it seems perverse for new government-sponsored institutions to be developed and then compete with existing institutions.

144. Similarly, the Ministry of Science and Technology has supported KAIST, which is one of the best-regarded universities in the country, and which might be able to inform other universities about best practices in technological education; joint action between MOE and the Ministry of Science and Technology could achieve this. One factor contributing to the proliferation of tertiary education and the “crisis” of over-education, then, is that individual ministries seem to be able to develop their own education systems, rather than having an overall national plan for tertiary education.

145. In some cases the lack of communication among ministries may hamper the ability to develop coherent policies. One clear example is the effort to redistribute population and employment away from Seoul. This is an effort that can only be successful by first enhancing economic development in regions outside of Seoul, for example by inducing firms to locate in other regions, or building on natural advantages of areas outside Seoul. In the first instance this requires policies from the Ministry of Industry and others with responsibility for regional development; if employment in a region accelerates, then there may be a role for MOE to expand tertiary education in that region so skill shortages do not develop. This kind of policy requires ministries responsible for economic development to co-ordinate their policies and their efforts to target particular regions for development, and then to alert the MOE to potential emerging demand. The Ministry of Industry chairs the President’s Commission on Balanced Economic Development, which is intended to co-ordinate all ministries related to regional development. However, we did not get the sense that this co-ordination effort has been successful as it might have in clarifying the roles of different ministries (including Education) in such a policy. On the contrary, the MOE began the New University Regional Innovation (NURI) project in 2003, to promote innovation in local regions through regional universities; but although this effort could have included representatives from other ministries, apparently it did not. There have been only a few examples around the world where universities on their own stimulated regional growth<sup>38</sup>, and in the case of Korea — where an enormous amount of population and employment are already located in and near Seoul — we doubt that efforts by MOE alone can accomplish this.

146. Similarly, as we argue in greater detail in Chapter 7, the role of universities in research and development cannot be carefully planned without considering the much greater amount of research that takes place in corporations and research institutes, which are funded by other Ministries. Similarly, MOE cannot say how much is being spent in total on tertiary education since it doesn’t know the magnitude of tax expenditures, which presumably should be calculated by the Ministry of Finance; determining the resources available for tertiary education therefore requires co-operation among Ministries. In general, then, there are many issues that might require special co-ordination councils such as that developed for regional development. The government might consider establishing regular procedures for identifying the issues that require such efforts so that they can take place quickly and effortlessly.

## **6.5 Developmental Conceptions of Regulation**

147. In this chapter we have advocated a “soft touch” and developmental approach to regulation. The developmental approach is intended to help develop the capacities of colleges and universities to enhance quality, to respond to the demands of students and labour markets, to enhance flexibility and variety rather than uniformity, and to rely more on efforts to improve the quasi-market in tertiary education. It operates more by setting certain requirements intended to generate institutional improvements — for data collection, for quality assurance mechanisms, for institutional self-assessments, for a qualifications framework — rather than controls that limit what tertiary institutions can do. It would rely on much more extensive discussion and consultation between MOE and tertiary institutions, rather than top-down

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<sup>38</sup> One of the most spectacular examples was the development of Silicon Valley near Stanford University, in California. This single example then created a rush for other universities to establish research centres, but most of these have not been successful.

regulation. In the same ways, it would encourage more communication and consultation among agencies within MOE, and between MOE and other government ministries, particularly where there are issues that are larger than tertiary education.

148. A more developmental conception of regulation implies more technical assistance to universities and colleges, helping them (particularly in the initial stages) comply with new information and quality requirements. This in turn requires that the individuals who carry out this policy have real expertise and experience in tertiary education, rather than backgrounds in general governance and policy that now dominates hiring within government.

149. One option would be for MOE to hire different kinds of individuals, particularly those with distinguished records in governance, research, and teaching within colleges and universities. Another would be to institute a set of annual review meetings with each institution, as occurs in Norway, in which performance goals and targets are set, and progress towards these is reviewed. Another option would be to develop a new administrative structure, called something like the Korean Council for Tertiary Education, to carry out the advisory and consultative roles of government. The Council itself would, for example, include more stakeholders — representatives of colleges and universities, representatives of students, employers both large and small, representatives of other ministries and other social goals (like R&D and regional diversification). Its staff would include individuals with substantive expertise in different aspect of tertiary education, able to consult with institutions, to amass information about practices in different institutions, to identify innovative and effective practices and then to provide technical assistance to other institutions. The staff would also include data and evaluation specialists, to enhance the information available about quality and effectiveness (a point to which we return in Chapter 11). This Council would among other functions, assume responsibility for the annual performance reviews that we have proposed.

150. A new administrative structure would replace several functions of the MOE, rather than adding administrative units. What we think it might promote is (1) a clearer vision for the development of tertiary education that promotes diversification, requiring reduced micro-regulation by Government); (2) improved co-ordination across government ministries; (3) stronger connections with the labour market, in turn requiring better information for students; and (4) improved quality of education, this including clear expectations of degree standards. A broad advisory council could help advance all four of these. So the Council could develop the framework for a social compact that defines the mission of different institutions and sets their performance expectations. MOE would have financing and accountability reporting roles (including reporting on measures to reduce regulatory impediments). The quid pro quo is that MOE would relax its regulatory requirements, except for institutions that are of concern. These kinds of administrative and cultural changes, are, we believe, important as part of a new developmental approach to regulating the system.

## CHAPTER 7

### THE ROLES OF TERTIARY EDUCATION IN RESEARCH AND DEVELOPMENT

151. Korea faces the need to enhance its research and development (R&D) activities. Its current economic positions have been created in part through the export of goods relying on technological innovation, in consumer goods, electronics, and automobiles, and it needs to maintain its competitive advantage; it wants to develop its expertise in emerging technologies. In this effort, it faces competitions from other fast-developing countries, especially China and India, as well as from other developed countries trying to maintain their own advantages through R&D.

152. The question we address in this chapter is what role universities in particular should serve in advancing R&D in Korea. After briefly summarizing the current state of R&D and the production of post-graduate degrees in the first section, we outline some potential directions in the second section.

153. R&D in Korea is usually conceived as science-based or technologically-oriented; these are the examples that are most frequently mentioned, and only 12% of university research funding is in the humanities and social sciences. However, we will note in the conclusion that Korea lacks comprehensive research about tertiary education, and the evaluation of existing programmes is quite limited. We have, of course, no idea about the extent to which the lack of research is true in other areas of social policy or economic development. However, it's possible that Korean growth in the future will take place not only because of technological advancements, but also because of advancements in other areas of national policy including education policy, through reorganization of firms and other social institutions, and through other innovations that have little to do with technology. From the broad perspective of micro growth theories like that of Landau, Taylor, and Wright (1996), there are many areas other than technological innovation responsible for growth; and from the more specific perspective of the policies that have generated growth in Japan and the Asian Tigers, government management of the economy has been as important as technological advancement. In this chapter, therefore, we use "R&D" in a broad sense of the term, including not only science-based R&D but also other forms based more on social sciences.

#### 7.1 The Current State of R&D in Korea

154. In terms of the volume of overall R&D, Korean universities play a relatively small role. About 76% of overall spending on R&D is carried out by corporations; 14% is carried out by research institutes; and only ten per cent is done in universities, a proportion that has increased only slightly over the past decade, from about seven per cent in 1993. Given the prominent role of firms in R&D in Korea, it is unlikely in the foreseeable future that universities will become the major players — particularly since a great deal of current R&D funded by firms is intended to develop new products, a kind of firm-specific and market-driven form of R&D that is less appropriate for universities.

155. Virtually all corporate research funding (95%) goes to corporate R&D, not surprisingly. Of government funding, the majority (52%) goes to research institutes, 19% to corporate efforts, and 29% to universities — largely (67%) to research universities rather than teaching-oriented universities (30%). Most of the research funding to teaching-oriented universities (70%) go to institutions located outside of

Seoul, suggesting that these funds are being used to strengthen these institutions; in contrast, most of the funds to research universities (66%) goes to institutions within Seoul. Overall, 67% of government research funds go to the top 20 universities, including a couple of institutions located outside of Seoul (particularly KAIST and POSTECH), so that only a very few universities have meaningful amounts of research funding.

156. Overall, then, the role of universities in national R&D is quite small. However, there are two roles in which universities are particularly important. One is the support of basic research, as distinct from commercial research. While universities carried out only ten per cent of overall R&D, university faculty contributed 76% of the scientific papers written in Korea — and these papers, if peer-reviewed for publication in quality international journals, are good indicators of basic research work.

157. A second role is the preparation of individuals with master's and doctorate degrees, some of whom will become the next generation of researchers. Indeed, the role of universities in preparing researchers is probably the best example where the teaching function of the university and its research function are aligned with one another: faculty conducting research (largely basic research) work with graduate students and thereby both introduce them to novel concepts and prepare them for their future roles. The Brain Korea 21 (BK21) programme of 1999 – 2005 is an example of government efforts to increase and support this role, with 50% – 70% of funds going to support post-graduate and post-doctoral students to provide a stable research environment for university-based researchers. There have been some complaints that the numbers of master's and Ph.D.s are too low, perhaps because their earnings are only 70% of comparable social scientists (like lawyers and bankers); if so, the only real solution is not to increase the supply of such individuals but to increase salary levels (OECD 2005d, p. 18).

158. In addition, there are 16 technoparks throughout the country, which are industry-university centres to provide assistance in transferring new technologies to companies (particular small and medium-size) that have trouble finding expertise. The universities and some colleges associated with the technoparks can also provide short- or long-term training programmes for these firms, providing a supply of skilled workers to meet increased demand<sup>39</sup>. The technopark we visited seemed well-equipped, clear about its purposes, and comprehensive in the services it provides to firms, so this appears to be an excellent model for university-industry linkages related to the transfer of R&D.

159. However, several factors have made the linkages between research and education problematic. One is that the most prestigious universities tend to hire their faculty from other countries, especially the United States; this helps enhance their status, and perhaps the basic research they do, but it does not contribute to the preparation of post-graduate education. Second, while 67% of research funding goes to the top 20 universities, large numbers of post-graduate students prepared in Korea are trained in second-tier universities where the faculty is not engaged extensively in research, meaning that the close connection between research and education is broken. In effect, non-research institutions are preparing the next generation of researchers, and this is surely not the optimal form of training. One solution, mentioned in Chapter 6, would be to limit PhD training to institutions, or departments within institutions, that have demonstrated research strengths. This could be linked to earlier comments on regulation of the system.

160. A third possibility was raised by several institutions we visited: the role of university-based research in generating patents and inventions that might generate revenues for the university. However, we are quite sceptical about this possibility. In the first place, there have been very few universities worldwide

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<sup>39</sup> In economic terms, SMEs lack expertise, and the transactions costs of getting together into consortia in order to obtain both expertise and a supply of skilled workers may be too high, causing this market to fail. Under these conditions government is justified in intervening as a way of providing services to firms that cannot otherwise express their demand.

that have been successful in doing this, partly because a very small proportion of research results are commercially patentable. As Bok (2003, p. 101) reported, “Of an estimated 200 or more patent licensing offices on American campuses, only a small fraction received more than \$10 million in 2000 and a large majority failed to earn any appreciable profit.” In addition, the commercial exploitation of inventions and patents is itself a complex process requiring expertise that universities researchers seldom have, and that universities can themselves develop only by spending large sums to develop research offices. The result is that the economic benefits of university-based research are quite uncertain, and many universities that have tried to take this route have lost money. The prominent international examples where universities have contributed to commercially-valuable research have been cases where the direct economic benefits have been captured by spin-off firms (as in Silicon Valley and biotechnology firms near Stanford university in the U.S.), or where university faculty have been hired to perform basic research by individual firms (like Novartis at U.C. Berkeley) or by a consortium of firms (like Sematech in Austin, Texas). But these examples have all been initiated by private corporations, not by universities themselves. In addition, many of these examples have been quite controversial, given the non-economic roles that universities in many countries perform, again limiting the roles of universities in commercial R&D. We will not therefore include this role among the potential contributions of universities to R&D. Indeed, we think that the lesson in other countries is that universities need to affiliate with corporations and groups of corporations, particularly when the two useful roles we have identified for universities — basic research, and the training of researchers — can be clarified as part of a larger effort.

## **7.2 Enhancing the Roles of Universities**

161. We conclude, therefore, that the two most useful roles of universities in R&D are to engage in basic research, some of which may be motivated by potential (but uncertain) commercial applications; and to prepare the next generation of researchers. In terms of basic research, its connection to commercial applications is enhanced when universities maintain ties with corporations. Currently there appear to be many such ties; every university has a university-industry liaison office supported by government funds; and the co-worker system promotes joint research between university and corporation researchers. In addition, there is some joint support among the Ministry of Education and Human Resources Development, the Ministry of Commerce, Industry, and Energy, the Ministry of Science and Technology, and the Ministry of Information and Communications — though apparently this collaboration has achieved only limited results. These ties should surely be continued and strengthened, and we noted in the prior chapter that relationships among Ministries could be improved.

162. In addition, there are widespread proposals in Korea to create up to 15 “world-class” universities (eight in Seoul and seven in regional areas) — presumably a response to the kind of comment cited above, that “Seoul National University is not Harvard”. But we note several practical difficulties in creating 15 universities like “Harvard”, presumably referring to that university’s position at the top of the world rankings of universities. One is that universities like Harvard and Cambridge and Tokyo have taken many centuries to evolve a culture of high-quality research with high-quality graduate and undergraduate education. This is difficult to do quickly, and the rankings of universities both within countries and across countries have been remarkably stable over time. In addition, we note that all but one of the top-20 universities (Tokyo University) and all but three of the top 40 are in English-speaking countries; their domination has as much to do with the emergence of English as the world-wide language of science and commerce as it does with their intrinsic excellence, and of course Korea cannot compete in terms of language.

163. Second, it would cost a great deal of money to catch up to the current world-class universities, with their enormous endowments and substantial research facilities. We are unsure that the funds to create even one world-class university (never mind 15) are available, given the current demands on government funding. We suspect that the funds necessary to create such a large number of “world-class” universities

might instead be better spent on targeted efforts to improve specific areas of research and particular programmes to train researchers, as we outline below. Furthermore, additional research funds will not by themselves create “world class” universities. Additional funds for infrastructure and facilities, the capacity to offer competitive and differentiated salaries, an entrepreneurial culture reinforced by institutional autonomy and clear leadership with strong external support will all be needed as well. This raises issues of institutional governance and autonomy that will need to be addressed. It will also generate conflict about government policies for the funding of private institutions, given that many of the front-runners will not be national universities.

164. Third, the process of developing support for a small number of “world-class” institutions would itself be difficult, politically and technically. It would be necessary to choose the universities for such favoured treatment carefully, since not all universities have the capacity to develop in such ways; other political criteria — favouritism by powerful politicians, the competing demands of developing universities outside Seoul — would no doubt intervene. The selection of specific fields of study to support would be similarly difficult. And above all, the culture of world-class universities is difficult for government to foster, particularly simply by making available research funds; this generally requires a great deal of autonomy — now often restricted by government in ways we outlined in the previous chapter — as well as visions of excellence equally motivated by research and teaching. Overall, then, we suggest that Korea should be extremely careful about its dream of 15 “world-class” universities, particularly because the goal of enhancing R&D might be achieved through different mechanisms.

165. In terms of strengthening the role of universities in educating future researchers, the greatest need we see is the effort to be sure that researchers are prepared in research universities, not in second-tier universities that conduct little research. This is also important to the international credibility of a Korean Ph.D. This can be accomplished in several ways. One is to be sure that the research funding that now goes predominantly to a small number of research universities always includes support for post-graduate education, so as to consistently integrate education and research. A second and more controlling (rather than developmental) form of regulation would be simply to ban post-graduate degrees in universities without a certain level of research funding. There could be a programme of affiliation of faculty from non-research to research universities (along US lines): this would help build staff expertise in research and broaden the base of the research talent pool. We are not particularly in favour of this approach, since our preference is for developmental regulation rather than constraining regulation, and forbidding certain universities from participating in post-graduate education would stifle some ambitions. However, we do think that the problem of over-education needs to be confronted, and limits on which institutions provide post-graduate education might be part of the efforts to do this, outlined in Chapter 3.

166. Another way of thinking about the roles of universities in R&D is to think not about the 171 universities in Korea as autonomous institutions, each striving to be the highest-status, but rather to think of networks of universities linked to one another for both research and post-graduate education. For example, the top research universities — including some specialized universities like POSTEC and KAIST — might be considered research centres, with linkages to other less research-oriented universities and regional universities. These linkages could include research, for example, as second-tier universities carry out supportive research, or more applied research, or regional applications, under the direction of central research universities. They should also include educational efforts, for example as second-tier universities offer undergraduates and perhaps master’s degree programmes in specific fields, linked to Ph.D. programmes in the central research universities. And such a model of networked institutions also gives a role to colleges, for example to prepare the technicians required in certain fields, or in some cases to prepare individuals with Associate’s degrees who are then well-prepared to transfer into baccalaureate and master’s programmes.

167. To be sure, this kind of networked approach would institutionalize a two-tiered structure of research universities and second-tier universities concerned with more applied research and educational preparation, and might generate considerable opposition. However, we think that Korea now has such a two-tiered structure since so few universities engage in research. It would be better to recognize this division and use it to enhance national goals—including the development of R&D—rather than to continue this division without recognizing it fully. In the process, it might also be possible to enhance the role of second-tier universities and regional universities in targeted research and in certain types of research-oriented training, so most of these institutions would be better off than they are now.

## CHAPTER 8

### EQUITY IN TERTIARY EDUCATION: THE ISSUES OF CLASS, GENDER, AND REGION

168. The issues of equity in tertiary education have not been quite as prominent in recent national debates on tertiary education in Korea as those related to quality, growth, and R&D. Nevertheless they have been important determinants of key policies such as the “three nots”, and there has been some concern about a decline of interest in equity as the growth of tertiary education has dominated the past two decades. As one professor expressed this concern, the earlier possibilities of “dragons rising from streams” — of prominent individuals rising from humble origins — have been replaced by a more competitive education system. This now includes widespread private tutoring to prepare for the college entrance exam, providing a greater role for family income to shape access to tertiary education.

169. In addition, there are concerns about the ability of women to progress to tertiary education. In many OECD countries the educational attainments of women now exceed those of men, but they are still behind in Korea: only 20% of Korean women aged 25-64 have a tertiary qualification, compared to 32% of men of the same age. This is the second largest such gap in the OECD, exceeded only by Switzerland. We note a number of programmes to promote the education of young women, though we suspect that attainments will continue to lag as long as the roles of women in the Korean economy and society lag behind those of men.

170. The rapid expansion of tertiary education leads to contrary possibilities related to equity. On the one hand, the expansion has opened up more places in colleges and universities, and these should have enhanced the ability of lower-income students and women to attend. On the other hand, the expansion of tertiary education in Korea has been accomplished largely by expanding places in new and therefore lower-status universities, and in colleges; this means that lower-income students and women might have gained access to lower-status institutions, including those that do not lead to post-graduate education. Which of these two possibilities has dominated is a question we try to resolve in this chapter.

171. There are several mechanisms in Korea designed to enhance equity, including a system of fee waivers, loans, and special programmes. We suspect that these could be better used to improve the consistency of equity policy, and to create a more systematic system intended to enhance equity.

172. Finally, we end this chapter with a brief note on regional equity, or the imbalance between Seoul and the rest of the country, and the limited potential role of tertiary education in correcting this imbalance.

#### **8.1 The Effects of Family Background**

173. As in other developed countries, education in Korea shows moderately strong relationships between family background and educational attainment. As Table 7 reveals, the social class of parents — whether measured by rough class groups, by education, or by occupation — strongly affects the level of tertiary institution their children attend, where levels are measured by relative standing in a ranking of institutions. The social standing of the family is particularly important, with education and occupation also contributing to where students go to university.

**Table 7**  
**Level of university based on class level, education level, and occupation of parent<sup>1</sup>**

		Upper level	Upper middle level	Middle level	Middle lower level	Lower level	Total (frequency)
Social standing of family	Upper class	57.1	-	42.9	-	-	7
	Upper middle class	16.9	41.6	32.0	8.4	1.1	178
	Middle class	7.5	32.7	45.1	13.9	0.8	743
	Mid-lower class	8.0	22.8	40.7	26.1	2.4	589
	Lower class	5.8	25.6	30.2	26.7	11.4	86
Subtotal		8.9	29.5	41.2	18.4	2.0	100.0
(Frequency)		(142)	(473)	(661)	(295)	(32)	(1 603)
Education level of parent	Elementary	8.0	30.3	36.8	22.9	2.0	201
	Middle school	6.3	26.8	45.6	19.5	1.7	287
	High school	6.8	28.4	43.3	19.6	1.8	672
	Junior college	7.3	23.6	41.8	23.6	3.6	55
	Four-year university	15.1	35.3	36.3	11.9	1.4	278
	Graduate school +	14.3	30.4	36.6	14.3	4.5	112
Subtotal		8.8	29.5	41.2	18.4	2.0	100.0
(Frequency)		(142)	(474)	(661)	(296)	(32)	(1 605)
Occupation of parent	Government	12.8	26.7	38.8	18.2	3.5	258
	Professional	13.9	29.2	43.1	11.1	2.8	72
	Semi-professional	5.0	36.6	38.6	16.8	3.0	101
	Office worker	6.3	35.4	35.4	22.8	-	79
	Service	11.9	31.0	40.5	15.9	0.8	126
	Sales/Vendor	7.3	32.6	41.0	16.9	2.2	178
	Fishing/farming/forestry/livestock	4.7	21.5	47.7	24.8	1.3	149
	skilled workers/ drivers	7.6	28.0	47.0	15.6	1.7	353
	simple labourer	6.8	31.1	34.1	25.8	2.3	132
	student	11.1	33.3	44.4	11.1	-	9
	housewife	8.8	28.1	40.4	22.8	-	57
	unemployed/retired	14.4	32.2	33.3	18.9	1.1	90
Subtotal		8.9	29.4	41.2	18.5	1.9	100.0
(Frequency)		(143)	(472)	(661)	(297)	(31)	(1 604)

1. The figures in each row sum to 100%. The raw frequencies upon which the percentages are based are shown in the far right column.

Source: Background Report

174. Korea has apparently made substantial efforts to make sure that its public secondary system of education creates equitable conditions for all students. An equalization policy effective in 23 cities including Seoul, and covering about half the population, allocates middle school students randomly to academic high schools, and the high schools have to some extent been equalized in terms of their facilities and teaching quality. (The existence of vocational high schools is another issue, and probably contributes to inequality as it does in other countries.) The PISA data, based on tests administered to 15-year-olds, confirm that inequality among these students is the lowest in the OECD countries, as is the effect of family background on PISA literacy scores (Kuczera, undated, Tables 2.3.2 and 3.2.2). However, a student's high school record generally accounts for only ten per cent of rankings in admissions to tertiary education, and the CSAT generally contributes 70% (the proportion can vary across and within institutions); therefore the system of tutoring for the CSAT, for which parents must pay substantial amounts, undermines a great deal of the equity established in secondary schools

175. It's difficult to know how to counter the inequities associated with the private tutoring system. One proposal has been to provide tutoring for students whose parents can't afford it; but this would be prohibitively expensive, and it might not work if high-income parents found even more extensive tutoring for their children. A ban on tutoring would also be unworkable, since families would always find a way around that.

176. The MOE is now encouraging colleges and universities to base their admissions on a wider variety of entrance criteria, rather than relying so heavily on the CSAT. This is a positive move. Gradually, the value of tutoring may fall, and the inequalities associated with extensive tutoring may also be reduced. For example, admissions might be decided more by the variety of experiences of students during secondary schools, including their extra-curricular activities; by several exams measuring different aspects of competence in place of a single exam score — consistent with the idea that multiple exams would be more reliable than a single exam; or by a variety of factors like essays and recommendations. This would look more like the U.S. system of admissions based on a wide variety of criteria, rather than the European tradition of heavy reliance on a single exam. While the details of an alternative admission mechanism would require extensive discussions among universities and government policy-makers<sup>40</sup>, there might be several different advantages including greater validity<sup>41</sup> and reliability of entrance decisions as well as greater equity if tutoring for the single admissions exam became less prevalent. But without addressing the inequities inherent in the tutoring system, one dimension of inequality will persist.

177. Finally, there is no information about inequalities in completion rates related to family background. As we mentioned in Chapter 4, the convention in Korea is that virtually all students complete college and university programmes once they enter. However, the data available lead us to suspect that this is not true, and that completion rates may be as low as 77%; if so it seems likely that lower-income students are more likely to drop out, or to transfer from universities to colleges with their lower tuition and greater prospects for immediate employment. While neither we nor Korean policy-makers know whether this is the case, the development of a more comprehensive equity system might first investigate this possibility and then devise mechanisms to reduce inequality in dropout rates.

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<sup>40</sup> There is already a clearinghouse for students applying to the university, allowing both universities and applicants to rank their preferences, and then matching these preferences as closely as possible. This might be the appropriate group to deliberate about alternative criteria for admissions.

<sup>41</sup> It would be worth examining the validity of the CSAT — that is, its power in predicting how well students do during tertiary education and thereafter. In California, admission to the university is usually based on a wide variety of criteria, but in the past students could also be admitted based on a set of test scores alone. Those admitted through tests tended to do worse than other students, perhaps because tests by themselves do not measure diligence and persistence.

## 8.2 Gender Inequalities

178. The gender ratios of high school graduates are roughly even. However, the rates of progression to tertiary education are not equal. Annex 4, Section 17 shows that the proportion of women in both universities and colleges is low, and particularly low compared to OECD countries as a whole. The result, as we pointed out above is that the proportion of women with degrees is substantially lower than the proportion of men. And of course there are generational differences between younger cohorts, who have attended tertiary education after the great increase of the 1980s and 1990s, and older cohorts who matured when Korea did not have a large system of tertiary education.

179. The causes of these gender imbalances appear rooted in traditional views of women. In general, participation of Korean women outside the home has been lower than in other OECD countries: the labour force participation rate of women is about 49%, much lower than the OECD average of 65%, and the employment rate of women with tertiary education is 57%, among the lowest levels in OECD countries. Women constitute only 34% of individuals in highly skilled positions compared to about 50% in Australia, Germany and Sweden, and 54% in the U.S.; men are dominant in senior corporate positions (94% of all individuals), senior civil service positions (90%), and in university faculty positions (86%) (OECD, 2005d). We heard (though there is little data to confirm this) that parents are less willing to spend money on private tutoring for their daughters than for their sons — again a problem that might be corrected by changing admissions policies. In addition, it may be that parents are less likely to take out loans for daughters, who are less likely to work — or will work at lower wages — than sons, making repayment more difficult.

180. The government has been taking a series of steps to promote gender equity: intensive career counselling and information sessions in elementary schools and middle schools, and a developing plan to support female scientists and engineers. It has introduced targets that engineering programmes try to have at least 30% of their students be female, and that science and technology institutes employ at least 30% women. These seem like steps in the right direction, and they should be continued and expanded where appropriate. And, consistent with our concern with effectiveness, we think that evaluating the effectiveness of such programmes would help not only identify whether they are succeeding in attracting women into tertiary education, but also why or why not, and such evaluation could then lead to improvements in such programmes.

181. Overall, however, we suspect that the ability of education to promote the education of women is limited as long as the roles of women in the labour market and society are limited, and as long as family-friendly policies like day care are underdeveloped. The efforts to improve gender parity in colleges and universities should surely continue, though they should be matched with efforts to develop family-friendly policies and shifts in cultural norms about the roles of women.

## 8.3 Equity Mechanisms: Fee Waivers, Loans, and Special Programmes

182. In order to enhance equity, Korea has a numbers of grants, loans, and other outreach programmes intended to enhance the access of low-income students and women. In addition, the MOE uses its control over the admissions process to try to influence equity, though whether this approach is successful is unclear.

183. Many universities and colleges use fee waivers to attract students that they want to admit, waiving some or all of the tuition fees they normally charge. (Fee waivers would be called grants in other OECD countries — that is, funds that need not be repaid to support the tuition and living costs associated with tertiary education.) We understand that some universities, including a few of the highest-status

universities, use tuition waivers and special admissions procedures to allow low-income students to enter<sup>42</sup>, but most fee waivers appear to be merit-based — that is, they are efforts by universities to attract the “best” (or highest-scoring) students. If so, these almost surely work against equity. Because fee waivers are set by universities individually, there is no central data on the extent of fee waivers, or whether they are need-based versus merit-based.

184. In addition, Korea has an extensive system of loans: there are eight major loan programmes, administered by MOE, the MOL, the Korea Labour Welfare Corporation, the Government Employees Pension Cooperative, and the Korea Teachers Pension, aimed at different groups of students (with some limited to science and engineering majors, or victims of work-related accidents, or workers), with different interest rates and repayment schedules. These are available to students in universities and post-graduate schools, but not to college students; about 25% of students in universities and 22% of students in universities and postgraduate education receive loans. These must be repaid when a student completes university, with repayment periods varying among types of loans; some include deferral periods when students need not start repayments, while for others repayment begins right away. Given the low employment rate of recent university graduates, loans may constitute a severe burden for recent graduates without substantial incomes. There appears to be no information about whether some students decide not to enrol in tertiary education, or enrol in lower-cost colleges rather than more expensive universities, because of their reluctance to take on loans, though it might be economically rational for such students to avoid loans.

185. In addition, a number of special programmes exist to admit students with certain kinds of social disadvantage. Again, there is a large number of small programmes, for groups like housewives, children of sailors and accident victims, and students from farming and fishing communities, but overall these apply to about 50 000 students while close to 400 000 students are accepted each year.

186. Finally, the MOE has some influence over admissions policy, particularly through the “three nots” and measures for helping universities to develop their own admissions systems. We note the direction of current reforms to admissions process, giving universities and colleges more discretion to differentiate, and broadening the range of criteria that they can use in selecting students. We encourage more vigorous action in this direction, as it should stimulate diversification and innovation and reduce pressures on high school students and their families.

187. Overall, however, the equity mechanisms that exist in Korea have been created haphazardly, by different institutions with different goals. Fee waivers are created by universities for their own purposes, and there’s virtually no information about them. There are too many loan programmes, unco-ordinated and with different repayment options, to understand easily; the resulting effects on discouraging attendance are unknown. There are funds intended to enhance the equity of attending universities and colleges, but nothing to enhance equity of access, which is seriously influenced by private tutoring in high school.

188. A more coherent and systematic approach to equity would in the first instance determine where equity problems arise: whether they are linked to admissions issues and the need for private tutoring; whether they are related more to income constraints and difficulties associated with the loan system, or to other barriers related to knowledge about tertiary education and the options open.

189. Then an obvious step would be to consolidate the existing loan programmes, which seem too numerous and varied in their conditions for students to easily understand. We doubt that an extensive

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<sup>42</sup> Note that a fee waiver might correct the income-related inequalities in attending a high-status university, but it can not correct the income-related inequalities in accessing the tutoring system that seems necessary to gain admission.

system of grants can be created without increasing government spending substantially, which we think is unlikely. However, some grants could be developed for special equity problems, or to entice students into low-demand but socially important fields of study; for example, under current conditions where college graduates do not have higher earnings, a loan mechanism makes little sense, so grants for some college students might be appropriate. In addition, an expansion of a loan system where students can repay loans from future earnings, like Australia's HECS system<sup>43</sup>, might be a self-supporting option for Korea to pursue. Such loans could be expanded to cover living costs as well as tuition costs (as the government is apparently planning to do), potentially expanding the options of low-income students. HECS-type systems are highly flexible, and provide options for explicit policy decisions about the proportion of costs that should be paid by government, by students, and by other beneficiaries; the deliberations about such funding options would, we suspect, help develop more transparent policies both about equity and about the division of costs for tertiary education.

#### **8.4 A Note on Regional Inequities**

190. A different issue, sometimes mentioned as an aspect of equity, involves the relationship between Seoul and the rest of the country. Currently there is a strong preference among many Koreans for living in Seoul, with its variety of employment and cultural options. This has created a kind of vicious circle in which the most of the highest-reputation universities are located in Seoul; the best students want to go to these universities; and there is an over-supply of universities and colleges outside of Seoul, which struggle to fill their places while universities in Seoul are over-enrolled. Graduates from regional universities also have a harder time finding employment than do those from Seoul universities; many students graduating from regional universities or colleges therefore want to move to Seoul, depriving regional areas of skilled labour.

191. The major policy to deter the movement of students to universities in Seoul has been the quota system on enrolments in Seoul universities. As we noted in Chapter 3, the quota system has created rigidities of its own, since it seems to be based on historical patterns rather than keeping up with occupational changes. But in addition, its effect on the balance between Seoul and the rest of the country is unclear. While some students may be forced to attend regional universities, they may still decide to move to Seoul when they graduate, particularly if they are trying to work for the highest-status companies located in and around Seoul. We suspect, then, that the main effect of the quota system is to make universities within Seoul even more competitive, if anything enhancing the desirability of these universities, and exacerbating the pressure to do well on the CSAT — and all at the cost of making enrolment patterns less responsive to social and economic changes. A system of quotas aligned with changes in labour markets might correct the rigidity of enrolments, but it cannot do anything to change the imbalance between Seoul and the rest of the country. Instead, as we argued in Chapter 3, the system of quotas should be redirected to correct the problems of over-education.

192. In addition, MOE has developed a large number of smaller programmes to assist regional universities including specialisation, programmes to enhance co-operation with industry, customized education to meet the needs of specific employers, and programmes of technological assistance; the NURI programme was also developed to make regional universities the centre of regional innovation.

193. We see no way for the education system, a supply-side policy, to play much role in the allocation of employment and population across the country. If Seoul is so attractive to so many companies and

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<sup>43</sup> In HECS-type systems, students repay loans through a tax on income above a threshold. Therefore students who do not find employment right after graduation are not burdened with loan payments that they cannot afford, and the period of repayment stretches into those periods of their working lives when their earnings are higher. See Gallagher (2003) for more information.

people, then the only real solution is to make other regions more attractive — for example, by luring employment to other regions with subsidies, by increasing the cultural amenities in other regions, and by capitalizing on any special conditions (natural beauty, supplies of water, access to the coast and shipping) that may exist in areas away from Seoul. In addition, there are non-governmental and market forces that might correct the imbalance between Seoul and the rest of the country by making Seoul less attractive: if Seoul becomes too expensive, or too crowded, or too polluted, or transportation becomes too slow, then Seoul should lose some of its appeal, and other regional population centres might emerge. Perhaps the most effect policy might be for government policy and market mechanisms to reinforce one another, with government policies strengthening the economic development of regions that have become attractive to employers and population.

194. Within government, the Ministry of Industry chairs the President's Commission on Balanced National Development, which is a coordinating committee involving several ministries. The MOE is included, presumably to provide sufficient skilled workers for any local expansion of employment, so that education does not serve as a constraint on local growth. The PCBND offers a framework for improving the articulation of educational supply with the Korea strategy for regional development. Without such a framework, and without a commitment to consistent implementation using the variety of instruments that government has, we do not see how the enormous market forces causing a concentration in Seoul can be countered.

195. Indeed, it would be counter-productive to try to correct the imbalance between Seoul and the rest of the country through college and university quotas. Such an approach would likely be ineffective in limiting the movement toward Seoul, inefficient, in introducing rigidity into the system of tertiary education, and inequitable, in enhancing the competition for entry into the favoured universities that in turn exacerbates the need for inequitable tutoring.

## CHAPTER 9

### INTERNATIONALIZATION AND GLOBALIZATION

196. The patterns of globalization, extending to economic life, to consumption patterns, and to many aspects of culture, have become truisms. This is particularly so for Korea with its open economy and reliance on exports, its physical proximity to such economic giants as Japan and China, and its easy interchanges with the U.S. (and American universities). The question for this Country Note is what the implications are for tertiary education. In this chapter we concentrate on two issues: the curriculum implications of globalization; and the issue of foreign universities' participation in Korea's tertiary system.

#### 9.1 The Curriculum Implications of Globalization

197. Even in a country like Korea that is well-integrated into international commerce, many individual can live their lives — going about their daily work, buying *kim chi* and other necessities, celebrating with friends and *soju* — without thinking much about global patterns. But there are two limits to such a life. One, which we heard repeatedly, is that the lack of command of foreign languages, and more generally of knowledge of international conditions, creates a glass ceiling in employment, even for engineers and technical workers who may think that science-based competencies are all that matters. Certain college and university programmes have therefore created language requirements, not only in English but also in Asian languages like Chinese or Japanese, the languages of competitors, the languages of neighbours. From both a personal standpoint, of individual mobility in the labour market, and from a national standpoint, of having large numbers of citizens who can understand other countries, such educational programmes make a great deal of sense.

198. Second, Korea now faces, and will surely continue to face, a series of national questions about its role in the world, in economic, political, and cultural senses. Relationships with North Korea, with competitors like China and Japan (and potentially India), its role as a leader among Asian countries, the future of technological developments, its stand on international debates about free markets and the “Washington consensus” versus economic systems with more governmental participation, its response to culture and values from other countries — all these and many more issues require that Korean citizens understand the distant origins of many issues that affect their daily lives.

199. These arguments suggests that students in tertiary institutions — and, by extension, in some parts of elementary and secondary education as well — should have appropriate preparation in foreign languages, and also in international developments and their consequences. Because we have argued for the greater autonomy of colleges and universities, in Chapter 6, we don't think it appropriate for the national government to legislate such requirements, as it might at the elementary and secondary levels. Rather, these kinds of curriculum offerings should be developed in individual universities and departments, probably tailored to the futures and interests of students. Indeed, we were told in several universities that their language programmes provide a competitive advantage in the market for students; and international education is already the top priority of universities, ahead of student exchanges and attracting foreign students. There might be a role for MOE or for the Korea Institute of Curriculum and Evaluation in creating examples of global education, providing models and technical assistance to colleges and universities trying to create their own programmes. But, as important as they may be for the citizenry's understanding of global developments, the decisions about what to offer and to require should be institutional rather than governmental decisions.

## 9.2 The Roles of Foreign Universities in Korea

200. As part of globalization, tertiary education seems to have become more globalized as well. Some of this trend is related to the movement among countries in students. Currently, extremely small numbers of foreign students enrol in Korean universities. In 2003 only 0.2% of all Korean students were from other countries, the smallest proportion in the OECD, and well below even the quite small 2.2% in Japan, as well as well below the OECD average of 6.4%. Larger numbers of students go abroad (and especially to the U.S.) for undergraduate or post-graduate education, partly because some foreign degrees have substantial status. However, we did not hear about any serious problems with the international flows of students, even though the development of an international outlook among Korean youth would be helped if more foreign students came there to study. Although it seems unlikely that Korea can attract very large numbers of foreign students, partly because of language issues, the experience of countries such as Japan, where the level of foreign students is ten times that in Korea, suggests that far more can be done, despite the language issue. It's also possible that upgrading the quality of Korea universities, in ways we suggest in Chapter 4, might reduce the number of Korean students earning degrees abroad, and this might benefit Korean universities.

201. A different issue involves the attempts of foreign universities to provide programmes within Korea. Currently, MOE requires that the number of foreign directors of a foreign university be no more than two thirds of the board. This restriction, alongside other requirements that are placed on domestic and foreign private providers alike, has meant that; no foreign programme had been established in Korea as of 2004, and only a few online programmes. However, as several institutions we visited complained, another consequence has been to limit the ability of Korean universities to create partnerships with foreign universities. There is a need, therefore, to create a policy that can respond to a number of potential issues.

202. We suspect that continued regulation of foreign universities into Korea, including the presence of online universities, is justified. The demand for tertiary education is so great, and the respect for status is so powerful, that without regulation we fear that any number of fraudulent and semi-fraudulent universities would try to sell their diplomas in Korea. These would include universities with names that sound like famous universities (Berkeley University, for example, or Buckingham University) — a specialty of British and American organizations that are little more than diploma mills. If MOE adopts a strong qualifications framework and requires institutions to have robust quality assurance mechanisms, as we suggested in Chapters 3 and 4, then applying these regulations uniformly to international universities as well as Korean universities should eliminate the fraudulent institutions while allowing legitimate universities to develop.

203. Similarly, if Korean universities want to establish partnerships with foreign universities — especially in areas like business and public policy where other countries have more experience — then such partnerships should be allowed as long as they are under the direction of Korean universities with appropriate quality assurance mechanisms and adherence to qualifications frameworks. Again, this would establish standards of quality that all universities have to meet, whether Korean or foreign<sup>44</sup>, and would prevent fraudulent institutions from practicing in Korea while permitting legitimate partnerships to develop. Such an approach assumes a coherent system of quality assurance and qualifications, underlining the importance of developing such approaches.

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<sup>44</sup> Such an approach has the advantage of abiding by World Trade Organization (WTO) regulations on unfair trade practices, which require countries to treat all foreign universities like the universities from the Most Favoured Nation. While countries are sometimes concerned about WTO regulations, there is currently no regulation specific to education, and the WTO staff do not monitor educational developments.

## CHAPTER 10

### IMPROVING THE COHERENCE OF THE SYSTEM

204. The expansion of tertiary education in Korea over the past two decades has been incredibly rapid, and astonishingly impressive in many ways. More than any other country, Korea has assured that virtually all students complete secondary education, and has moved toward universal tertiary education. Nevertheless, there are opportunities to weave the complex of institutions that have been created, including the many new private institutions, into a more coherent system of tertiary education.

205. By a system, we mean a structure that links individual colleges, universities, and other tertiary institutions, rather than simply a group of unrelated institutions; a structure where the roles of different institutions are clearly articulated and transparent; one where the movements among institutions are rational and articulated; one where there is enough information about institutions so that students can make informed choices, policy-makers can identify impending problems and resolve them, and employers can hire graduates with clear understanding of what competencies they are likely to possess. In a country like Korea, as in most developed countries, an education system also should have sufficient choice to satisfy the demands of “consumers”, both students and employers; it should be flexible rather than rigid, able to respond to changing demands and external conditions. If tertiary education is to operate according to the mechanisms of quasi-markets (as is appropriate for a country dominated by private colleges and universities) then the conditions for optimality in markets need to be enhanced. And, following arguments in Chapter 8, there should be some equity in the system as a whole.

206. The tertiary education system in Korea is certainly large, and it is relatively well-funded overall. Improving the ways in which it is regulated and strengthening its internal connections to create a more coherent system would help to improve its efficiency, whilst also increasing its equity, flexibility and responsiveness. It would help to address the issues of quality, over-education and mismatches to the labour market that were brought to our attention, and strengthen the position of colleges within the system. These are objectives that are worth pursuing.

207. There are many potential dimensions of an improved tertiary system, and we will address five of them in this chapter: the effects on secondary schools; transfer rates among institutions; the role of colleges; enhancing choice; and expanding lifelong learning. In the final section we pose some issues about what kind of system Korea wants to develop. We stress that developing a coherent system from the many institutions that now exists is surely a long-run process, and Korea might want to develop a long-run plan to guide changes over time.

#### 10.1 Effects on Secondary Education

208. Almost universally, tertiary education systems shape secondary education, since secondary students are likely to be concerned, or obsessed, with the requirements for gaining entry into tertiary education. This obsession is particularly strong in Korea, partly because such a large fraction of the cohort enters tertiary education, and partly because the pressure to get into the “best” universities is so strong. The

time and money spent on private tutoring is the best indicator of this, but in addition the curriculum of secondary schools is constrained by the need to prepare for the CSAT.

209. One question, then, is whether there are changes in tertiary education that could reduce the pressures on secondary education, like changes in admissions procedures. If, as the government currently believes, there were more varied ways to gain admissions to universities and colleges, and the influence of the CSAT were reduced from its current 70% to a modest number of 33% or less, then the CSAT would not be as crucial. For example, colleges might create co-operative relationships with secondary schools, so that students completing certain courses and internships successfully might enter without taking the CSAT. It might be possible for certain colleges to eliminate admissions requirements altogether; certainly in countries like the U.S. and England, open-admissions policies for community colleges and further education colleges reduces a great deal of the stress about enrolling in tertiary education<sup>45</sup>. Universities might add additional criteria to their admissions procedures including various kinds of experiences during secondary education, accomplishments other than academic accomplishments, and extra-curricular activities, so that the CSAT would not be so dominant. We support increased co-operation within the MOE — between divisions responsible for tertiary education and for secondary education — in order to generate other ideas for moderating the pressure on secondary school students.

210. In addition, we did not hear much about any mechanisms for helping students to make the transition from secondary school to tertiary education. There are several possibilities, including organized visits by university students to secondary schools, like a programme in Austria run by the national students' organization; better information from universities and colleges to secondary schools; and sometimes co-enrolment of secondary students in college and university courses.

## **10.2 Student Transfer Among Tertiary Institutions**

211. There are no data we could find on the extent of transfers among tertiary institutions — from colleges to universities (although we told that about 20% of college students transfer to universities), or among colleges and among universities. The most common assertion is that virtually all students who enrol in a college or university complete a degree there — though we are uncertain that this is true, for reasons we reviewed in Chapter 4. But this pattern includes students who may decide that their initial choice of field of study was the wrong one, students who may want to change as labour market conditions change, and students who may want to move to another part of Korea. We suspect, then, that the system of tertiary education could be made more flexible, and more responsive both to students and to labour market conditions, if more transfer among institutions were facilitated.

212. The first step in doing this would be to collect the kind of data necessary to trace students over time — longitudinal data or tracer studies. These would permit policy-makers to see what current patterns of mobility are, and what causes them. This is part of a larger process, reviewed in the final chapter, of improving the data and evaluation in tertiary education.

213. A second step would be to formulate institutional policies facilitating transfer. Again, we suspect that “light touch” regulation by MOE would be appropriate. The MOE could serve a convening role, bringing colleges and universities together to formulate the conditions under which transfer is appropriate — for example, desires to change fields of study, to move to different regions, to enter an institutions with a programme unavailable elsewhere — and the requirements for transfer, related to courses already taken, credits already accumulated, grades achieved, and the like. In some cases articulation or transfer

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<sup>45</sup> In the U.S. and England, one could argue that secondary students require more stress, and that secondary schools might improve if there were more pressure to get into tertiary education. The situation in Korea is quite the reverse, however, since the stress in secondary schooling seems extreme.

agreements among institutions might be appropriate if, for example, some colleges appear to transfer large numbers of students to specific nearby universities, or if certain research universities receive large numbers of students from particular regional universities. Then mechanisms of informing students about the possibilities for transfer would be appropriate. The result would be more of a real system of tertiary education, with increasing relationships among institutions, rather than the current patterns where most colleges and universities are relatively independent of one another.

214. One particular kind of transfer might also enhance equity in the system: transfer from colleges to universities. Low-income students are more likely to attend vocational high schools, and only 62% of these students enter tertiary education, compared to 90% of students from academic high schools; most students from vocational high schools enter colleges rather than universities. If transfer were enhanced, then these students might have a better chance of earning a baccalaureate degree, which provides access to better and higher-earning occupations. In addition, low-income students are more likely to enter lower-status universities compared to those from higher-income families, and increased options for transfer would help them move to higher-status institutions.

215. The development of more fluid transfer among institutions does have the possibility of making tertiary education in Korea more flexible and responsive, but it does have potential drawbacks too. In the U.S., where public systems of education allow substantial or even excessive amounts of transfer, a pattern of moving among institutions known as “swirling” has developed, where students earn credits from a random collection of colleges and universities. In these cases the idea of a coherent programme of studies, with courses carefully related to one another, is undermined. Some limitations on transfer might therefore be appropriate. Alternatively, a qualifications framework might limit the ways credits for a degree could be earned, for example by limiting credits to two institutions, or to institutions that have transfer agreements so that the coherence of programmes is maintained. The key principle is the avoidance of duplication of study by students. Overall, the goal is greater flexibility, but not so much flexibility that the learning necessary for earning a degree is compromised.

### **10.3 The Roles of Colleges**

216. As is true in many countries (OECD, 2005e), universities tend to receive greater attention than colleges in Korea. Policy-makers in tertiary education rarely referred to them, and many of the country’s concerns — for example, about research, and about creating “world-class” universities — are by definition related only to universities. Most students would prefer to attend universities, except for those students with clear interests in vocational fields and those who want to enter employment quickly, so colleges commonly are second-class choices among students<sup>46</sup>. One employer mentioned that he would never hire from colleges, preferring only graduates from the highest-status universities, so again colleges become sources of last resort for employers. Universities have been “poaching” on the turf of colleges, by creating programmes that compete directly; this kind of pattern seems to be squeezing colleges out of certain labour markets, and may contribute to the low earnings benefits associated with completing college.

217. However, we think that colleges merit a stronger role in a system of tertiary education. For one thing, they account for 25% of all enrolments in tertiary education; they are numerically too large to ignore. For another, they prepare for a range of vocational fields, from health to business to engineering,

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<sup>46</sup> However, see Kim and Lee (2004, Table 1), which ranks all universities and colleges according to criteria not mentioned in the article. The top three deciles are dominated by universities, but starting at the fourth decile a number of colleges (largely in Seoul) compete favourably with universities, most of which are located outside of Seoul. Evidently, the top preferences among students are for universities based in Seoul, plus POSTECH and KAIST; but colleges in Seoul may be preferred to universities outside Seoul. The bottom-ranked institutions dominating the 8th – 10th deciles are colleges outside of Seoul.

that are crucial to the Korean economy. And they provide access to tertiary education for lower-income students and those who have attended vocational high schools.

218. Strengthening the roles of colleges will, we suspect, require several different kinds of actions. One would be to improve transfer from colleges to universities, so that potential applicants would recognize the possible route to the baccalaureate degree, if that is their ultimate ambition; this would also enhance the equity of tertiary education. Another would be to create a qualifications framework, as we suggested in Chapter 3, partly to reduce the amount of over-education and partly to clarify the roles of colleges in their particular part of the labour market. A third would be to develop indicators of quality; if there were real measures of competence in the system, then employers might shift from status-based hiring to hiring on the basis of quality, and this might strengthen the role of associate degrees in the labour market.

219. In addition, we are somewhat puzzled about the low earnings benefits of completing associate degrees, since these benefits are substantially higher in other countries (see Sections 11 and 12 of Annex 4). We suspect that one of the reasons may be variation in economic returns by field of study, and it's certainly worth knowing about such variation. It is also possible that differences between Seoul earnings and earnings outside of Seoul are partly responsible. Other characteristics of the middle-level labour market for which colleges prepare students might be responsible<sup>47</sup>. But if it were possible to determine why these economic benefits are relatively low, and then to correct any obvious problems, then colleges might become more attractive to students.

220. In addition, the quality of colleges varies substantially, as the quality of universities does. A better system of quality assurance might therefore enhance the stature of colleges. There are some "natural" teaching advantages of colleges: because they are largely focused on occupational preparation, there is ample opportunity for "hands-on" and more active form of teaching in workshops and labs; the possibilities for internships and other employment-related experiences can be expanded, particularly as some colleges already have good relationships with local employers.

221. A number of policy-makers noted that colleges have great potential for providing lifelong learning, a subject we take up in a section below. Such programmes might not only give colleges another important social role, but might also help colleges to keep up with the changing demands of employers.

222. There are, then, a number of ways of clarifying and strengthening the roles of colleges. We will return to this briefly in the concluding section of this chapter, where we outline several different conceptions of a tertiary system.

#### **10.4 Expanding Choice**

223. Tertiary education in Korea has expanded rapidly, largely by increasing the numbers of institutions, but the variety and choice among institutions has not increased correspondingly. While there are a few distinctive institutions — a few universities focused on science and technology, a few universities with a distinctive approach to teaching like Handong University, and of course the specialized teacher training institutions and the one corporate university — by and large all universities aspire to be comprehensive research universities. They are arrayed on a single dimension of status, rather than having several distinctive types of universities and several ranking systems. And colleges are often comprehensive institutions, though many of them specialize to some extent, for example in health, commercial occupations, rehabilitation training, the arts or tourism.

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<sup>47</sup> See, for example, Grubb (1996, Ch. 1) on the distinctive characteristics of the mid-skilled labour market in the U.S., some of which help explain the uneven and uncertain returns to community college degrees.

224. Expanding the variety of institutions would, we think, enhance the choice among students, the choice among employers, and the overall flexibility of the system as a whole. Indeed, the idea of specialized institutions, and therefore greater variety, is one that several policy-makers mentioned. One rationale for shifting to a more “developmental” conception of regulation, is precisely to expand the variety of institutions.

225. However, a corollary of expanding choice is that students and employers must be prepared to exercise choice in informed and responsible ways. This means that information to secondary school students will need to be improved. In addition, information about quality, and about dimensions of quality in addition to more accurate employment figures, needs to be expanded, as we stressed in Chapter 4. A number of ways of improving the overall system of tertiary education therefore come back to issues we have already examined.

### **10.5 Expanding Lifelong Learning**

226. For recent cohorts of high school students, among whom 81% attend some form of tertiary education, Korea surely has a large enough base of formal schooling for both social purposes and for economic reasons. However, there are not that many opportunities for older individuals to receive additional education, whether for employment reasons or for broader social purposes; the OECD (2005c) review of adult learning found a low rate of adult participation in learning, despite low skills level among some of the population (especially the older population). We suspect that there are many older workers who could benefit from upgrade training and retraining. In the future, the changing needs of dynamic economies are often cited as reasons for needing more lifelong learning (LLL) than was true in the past.

227. The kinds of institutions that provide lifelong learning vary among countries, depending on historical and institutional developments. In Korea, however, demographic trends will increasingly lead to excess capacity in both colleges and in regional universities, so we see no reason for new institutions to be created in the foreseeable future. The extension of colleges and some universities to providing more lifelong learning would require some modifications, of course. The current predominant focus upon full degree programmes, lasting a minimum of two years, would have to be broadened to include more flexible approaches, allowing shorter-term and more specific programmes to develop. These might be subject to the requirements of a qualifications framework, to create coherent certificates or other credentials certifying what an individual has learned. These should presumably be created in the same way that other qualifications are created, with the participation of employers (for employment-oriented LLL), tertiary institutions themselves, and representatives of an occupational association or students. However, such certificates might be specific to particular employers, colleges, regions of the country, and fields of study, so the procedures for creating such qualification should be shorter and more flexible.

228. In addition, LLL requires flexible hours of operation, particularly in the evenings and weekends. Again, this means that classroom and workshop facilities in colleges and universities could be more fully used when “regular” students are not attending.

229. There remain issues of who would pay for LLL. Costs might be shared between employers, especially for relatively specific training, and individuals, especially for more general education, particularly when earnings increase after additional training. Governmental subsidies might be reserved for specific purposes: to enhance equity, particularly for older workers with lower earnings; to facilitate the transition among occupations or among business sectors, as the economy changes; to relieve temporary

shortages of certain kinds of workers<sup>48</sup>, or workers in particular regions of the country; or to promote certain newly-developing occupations or sectors, for example high speed rail or advanced gas turbines.

## 10.6 Alternative Models for a Tertiary Education System

230. Overall, Korea might consider what kind of system of tertiary education it wants to develop over the next decade or two. Some approaches are unlikely to develop; for example, the German model of public universities, carefully controlled so that variation in quality and offerings is minimized, is not possible in Korea since it already has so many private institutions. Nor is the Danish, Swedish and Australian model, in which tertiary education is almost entirely dominated by universities, with few other types of institutions. A fully unregulated, market-driven model is also unlikely because it would fail to serve important public purposes, would surely exacerbate social inequality, and would jeopardize quality. We favour a model of institutional autonomy with certain limits and with specific supports: mission boundaries for different institutions (comprehensive research universities; niche research institutes with some graduate training; comprehensive teaching institutions; polytechnics; niche training institutions; community college/TAFE institutions); clear pathways for learners, aided by a national qualifications framework; and better information.

231. For this reason, many of our suggestions have outlined alternatives that might improve the operation of these market-like mechanisms — improvements in information and quality, a form of regulation that enhances flexibility and responsiveness, and an improved qualifications framework to certify the outcomes. We have also stressed in this chapter the advantages of transfers among institutions. In effect we have suggested a system of networked universities and colleges operating in a quasi-market, regulated to assure that market failures related to information, transparency, quality, and over-education are controlled.

232. We wonder whether Korea should also consider formalizing distinctions that have already emerged in practice. As in many other countries, there are in effect three segments of tertiary education: colleges; universities with little or no research, which should not (as we argued in Chapter 7) provide research-oriented postgraduate degrees; and research universities, most of them comprehensive. (There are also specialized universities, like education universities.) Recognizing these distinctions formally would have some advantages, particularly in enhancing the transparency of the system. It might also reduce the pressures for institutional drift and over-education, and enhance the quality of teaching by clarifying that colleges and non-research universities (or teaching- or education-focused universities) should try to compete on the quality of undergraduate teaching rather than research reputations. It would allow for both excellence in teaching and in research, for variety in types of institutions within each of the three segments, for mobility among institutions in the three segments, and for different types of regulation appropriate to each type of institution.

233. Like the other suggestions we have pose in this chapter, the creation of a formal tripartite system of tertiary education would require substantial discussion and planning, and the time required to make the transition to it might be substantial. But in the end the benefits of aligning current institutions in a more coherent system might be worth the effort needed to create it.

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<sup>48</sup> We are sceptical of most employer claims about shortages of particular skilled workers, like the complaints in Korea about shortages of individuals willing to do 3D work. In most cases, raising wages is the appropriate strategy, and pressures on government to expand supply are simply ways to avoid increasing wages. However, in cases where there are market constraints and imperfections, including problems in specific local labour markets, then some government subsidy might be appropriate.

## CHAPTER 11

### GENERAL PATTERNS AND FINAL OBSERVATIONS

234. The previous chapters have reviewed both the triumphs of education in Korea — particularly the completion of secondary education by almost everyone, the high proportion of secondary students who enter tertiary education, the high overall achievement levels and low inequality as measured by PISA data — as well as a number of concerns. We have suggested ways for Korea to respond to issues — quality, responsiveness to labour market needs, the regulation of a complex and largely private sector, equity, research and development, and the overall shape of the system of tertiary education — that all developed countries face, particularly as they try to use education to enhance their competitiveness and economic standing. We won't review those alternatives here, but we will note a number of issues that have emerged in several different chapters.

#### 11.1 The Transition from Quantity to Quality

235. Korea is consciously in the process of making a transition from a focus on quantity to a greater emphasis on the quality, coherence, and equity of tertiary education, and we agree with the need for such a transition. Indeed, this a particularly favourable time for such changes since the decline in the size of young cohorts mean that there will be fewer individuals to educate; improvements in quality are surely easier to achieve when pressures to expand the system have abated.

236. Enhancing quality can take many forms that we have reviewed in previous chapters, including the development of standards, better indicators of quality, quality assurance mechanisms, a qualifications framework, and different approaches to teaching and learning. Many of these specific mechanisms are difficult and time-consuming to develop, to be sure, and need to be guided by long-run plans. But they also require a significant shift in focus. In the first place, it will be necessary to think more insistently about outcomes, learning, competencies, and achievement, and less about inputs and measures of size like enrolments and funding patterns. The efforts to discuss and develop standards by field of study and to calculate better measures of outcomes including completion and employment rates are part of this. This does not mean that measures of the educational process itself are worthless: many such measures, including the quality of teaching, the preparation of teachers, and the variety of educational experiences, will still be necessary, particularly as part of quality assurance mechanisms. But these aspects of the educational process are valuable because of evidence that they cause students to learn more, in more sophisticated ways. Connections to the community and to employers are valuable because they can help place learning in an appropriate context. And there are good reasons to think that contextualized learning is more powerful than abstract or “academic” approaches. Such dimensions of the educational process are resources that Koreans can be relatively confident make some difference to outcomes, rather than those (like status) that do not.

237. Part of this change would also be a shift from the culture of status and prestige that governs the rankings of universities, and perceptions of colleges — to a culture of merit and achievement. In the end the two ways of thinking might arrive at the same outcomes — for example, it is possible that the small number of universities that now dominate everyone's status rankings would still be at the upper end of

quality rankings. However it seems more important for particular universities to be valued because of progress in learning among their students, not because they are well-regarded or place their graduates in high positions. And we also think that a focus on learning and competence rather than status would help enhance the perceptions of both colleges and regional universities, which cannot compete fairly in the quest for higher status but certainly can compete in efforts to enhance learning and outcomes.

238. The real problem in Korea is no longer under-education, as it was perhaps as recently as twenty years ago, but over-education; by any measures comparing it with other countries, Korea has enough individuals in younger cohorts with sufficient years of formal education for the “workforce of the 21st century”. Of course, it may be difficult to dampen the pressures for more and more schooling, particularly since parents and students understand this as the way to get ahead. Emphasizing quality therefore means redirecting the incentives of parents and students (by providing them better information about dimensions of quality, for example) as well as the incentives of tertiary institutions (by limiting their expansion in certain fields, for example), and finally the incentives of employers — for example, by including them in efforts to develop a qualifications framework emphasizing competence and quality rather than years of schooling and quantity. So a consistent policy will have many elements, but they should all be linked by a change in thinking about tertiary education, from emphasizing quantity to focusing on quality.

239. A shift to emphasizing quality might also effect the mechanisms that government has used to further its goals. We note that there are many small programmes in tertiary education — many small efforts to improve connections between employers and universities, many special loan programmes to enhance equity. These small programmes have developed, as we understand them, in response to specific problems that arise — the distance between formal schooling and employers, for example, or gender inequity. But the outcome-oriented solution in such cases is not to develop many small programmes, which are difficult to understand and to evaluate, and which are likely to be uneven in different areas of Korea. The alternative solution is the developmental process of improving the ability of colleges and universities to address these problems on their own, and to be flexible enough to respond to labour market conditions or community needs. This would eliminate the need for many small corrective programmes.

## **11.2 The Divide between Practice and Theory**

240. In preparation within educational institutions for occupations, at all levels of the labour market, an inevitable tension develops between theory — symbolized by “textbook” approaches, lecture and information transfer, research-oriented professors, and sometimes the values of older universities (in Korea, Confucian values) — and practice, represented by more learning in labs and workshops, on-the-job or in consultation with potential employers, with teachers more likely to come from practice than from research. This divide is virtually inevitable since the values of educational institutions and the values of workplaces are necessarily — and thankfully — different from one another. The tension is well-represented in Korea, where some institutions pride themselves on being more practice-oriented and “relevant” while criticizing other institutions. Thus corporations often criticize universities because their graduates lack practical skills related to how corporations work; colleges claim to be more experience- and job-oriented than universities; those in polytechnics criticize colleges for being too textbook-driven, and pride themselves on their connections to employers. There’s a constant process of blaming others for being excessively theoretical and impractical, while some institutions — particularly universities — criticize other institutions for being overly practice-oriented and too dominated by specific corporate demands. And, from experiences in other countries, we suspect that claims of being more practice-oriented sometimes hide an anti-intellectualism that cannot possibly be helpful in a knowledge economy.

241. Even while the divide between theory and practice is inevitable, there are ways of moderating the tension, particularly through institutional collaboration. For example, some universities and colleges have developed forms of teaching and co-operation with industry that seem quite beneficial to both sides,

without abandoning the kind of theory that is necessary over the long run; they could provide models and information to other educational institutions. The Korean University of Education and Technology, with its roots in labour market programmes, has developed a wide variety of interesting and “active” teaching practices; it could work with colleges to share some of these practices. If corporations are critical of the competencies of students, then ways need to be found to encourage them to become involved in correcting these problems — and at least in figuring out which competencies (like basic math, languages, and economic understanding) educational institutions ought to teach and which (like corporate culture and etiquette) are best left to corporations themselves. The establishment of internships and other work experience programmes are other methods for combining “practice” and knowledge of specific work conditions with the “theory” that is best taught in classrooms — and the establishment of meaningful amounts of such cooperative education would require long periods of co-operation.

242. It is, of course, difficult to develop such forms of co-operation in an intensely competitive environment; the rapid expansion of tertiary institutions after 1990 and the emergence of a “crisis” of over-education may have made such co-operation more difficult. This is, of course, another cost of the rapid expansion, and suggests again that restricting expansion and over-education and creating a networked system of institutions would be important roles for government to play. But even under current conditions, we suspect that Korea could make substantial progress in bridging the theory-practice divide by paying more attention to this teaching problem.

### **11.3 Market and Non-market Mechanisms**

243. As is obvious from simple data like that in Table 2, tertiary education in Korea is dominated by private institutions. The period of expansion has sometimes been described as “letting the market rip”, or allowing market incentives — and particularly the demand for more education among parents and students, generated both by economic concerns as well as older Confucian values — to cause the expansion of institutions. While we think that private institutions and market-like mechanisms will continue to dominate, allowing unbridled competition is less appropriate as Korea shifts from a focus on quantity to quality. Quality in education is much more difficult to define, to measure, and to publicize than is quality in conventional consumer goods, and all the mechanisms of improving quality we have mentioned require public intervention to some extent. Sometimes this is intervention just to create information, or to create more transparent degrees and other qualifications; in other cases, government intervention may be necessary to force institutions to adopt practices — like quality assurance mechanisms — that they would not undertake on their own, just as conventional corporations have to be forced to reveal their financial positions truthfully or to limit pollution. The irony has always been that the optimal characteristics of markets have always required non-market and government interventions to work well, and this is even more true for education than for conventional consumer goods.

244. At the same time, we have outlined some possibilities for shifting to what we have called developmental regulation — what others might call “light-touch regulation” — relying on competent institutions. This would encourage a trusting relationship between MOE and tertiary institutions, as well as enhancing the flexibility of institutions. Of course, the government must still be willing to step in if there are signs of fraud or dishonesty, as is true for corporations, but the nature of the relationship changes to one of consultation and assistance. And we note again, as we stressed in Chapter 6, that this requires different competencies within the MOE — more expertise and experience with tertiary education, more familiarity with what local institutions are doing.

### **11.4 The Allocation of Scarce Resources**

245. Korea has expanded its tertiary system without enormous expenditures of governmental funds, and we suspect that such funding will continue to be relatively limited. We therefore think that the

potential elements of policy we have outlined must confront the issues of cost; we are, for example, sceptical that Korea will have enough public funding to establish 15 world-class universities, and we have avoided recommending an enormous system of grants to enhance equity because we suspect that such increases in funding are politically impossible.

246. At the same time, there are sources of public funds that could be reallocated to enhance public purposes. One is the “demographic dividend”: if there are absolutely fewer students to educate in the coming decades, but governmental funds as a proportion of GDP stay constant, then the amount of public funds per student will increase. This “dividend” could be spent in various ways: on enhancing quality; on increasing the amount of lifelong learning; on enhancing equity mechanisms including more grant funds; on investing in targeted forms of R&D related to based research and post-graduate education.

247. In addition, we have identified tax expenditures as a current source of government subsidy — largely to middle- and upper-income families, we suspect — that is both inefficient and inequitable. These could be eliminated or reduced by changing the tax structure, and the resulting revenues used for pay for some of the purposes we have outlined in this Country Note. This would be a recognition and reallocation of what are effectively government funds, even though tax expenditures are rarely identified in the same ways that direct expenditures are.

## **11.5 Data and Evaluation**

248. We have identified many areas where data about tertiary education are either inaccurate — for example, the calculation of employment rates that are widely used to judge quality — or simply missing — for example, information about the magnitude of tax expenditures, about expenditures by Ministries other than MOE, about transfers among institutions, about completion rates, and about detailed employment effects. Similarly, we found little evaluation evidence — that is, information about which of the many small programmes Korea has initiated actually work.

249. We suspect, then, that in order to improve the data needed to steer the system, Korea — like many other countries — needs to develop a culture of evidence and evaluation as it starts a new stage in the development of tertiary education. In addition, the quality agenda and regulatory changes we have suggested will require additional data to be collected, including data that needs to be carefully defined and measured to capture dimensions of quality. A culture of evidence and evaluation, like the development of a quality focus, is not simply a set of procedures to collect additional information; it is instead a change in perspective, one that seeks out better information as the basis for decision-making.

250. Of course more data and evaluation are useless if they are not incorporated into decision-making — the decisions of colleges and universities about how to improve their offerings; the decisions of potential students and employers; the decisions of policy-makers about how to improve the system. Part of a culture of data and evaluation, then, is moving towards new ways of making decisions.

## **11.6 The Emphasis on Economic Purposes**

251. We started this Country Note by pointing out the faith among Koreans in the value of education in a knowledge-based economy. Our visits to universities and colleges confirmed this emphasis: routinely, policy-makers, administrators, and students spoke about education in terms of its economic value, and complaints about quality were very often complaints about the mismatch between education and labour market demands. We looked for remnants of older Confucian traditions of formal schooling, and an emphasis on learning related to moral virtue, governance, and household management, but we found little evidence that these are important to most participants in tertiary education. And when academics and

professors are criticized for failing to change, it is sometimes because they have held on to older conceptions about the purposes of education, rather than embracing the Education Gospel enthusiastically.

252. The emphasis on the economic value of formal schooling is, we think, limited in several ways. Even in attaining economic goals, it creates certain problems — particularly over-education, but also the stress and expenditure that entry into tertiary education and private tutoring programmes create, the emphasis on attaining degrees and qualifications instead of the learning that these degrees are supposed to represent. But it also narrows the purposes of colleges and universities, displacing other goals including the development of an active sense of citizenship, an appreciation of the long tradition of Korean culture, the moral and personal values embedded in Confucian philosophy. And there are other forms of learning that are surely valuable in the modern world, even though their economic value is quite indirect; for example, knowing more about international developments in a country like Korea is surely exciting as well as necessary, since global influence may be shifting from Europe and the U.S. to Asia, where Korea is a leader in many ways.

253. We are unsure how tertiary education in Korea can assert, or reassert, a broader set of purposes in tertiary education; this is a task for individuals more familiar with the history of educational institutions and the motivations of parents and students to contemplate. Our role is limited simply to pointing out how focused Koreans seem to be on the economic purposes of tertiary education, and what the consequence might be in both economic and non-economic terms. Over the long run, we think that universities and colleges can be even richer institutions if they integrate a variety of purposes. As Korea shifts to a greater concern with quality, this too could be a dimension of what quality means.

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## **ANNEX 2: AUTHORS OF THE NATIONAL BACKGROUND REPORT AND NATIONAL CO-ORDINATORS**

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### **ANNEX 3: PROGRAMME FOR THE NATIONAL VISIT**

#### **Monday, 17 October**

- 10:20 – 10:30 Welcome by Dr Hyung-Yeel Koh, President of the Korean Educational Development Institute (KEDI)
- 10:30 – 11:30 Meeting with writers of the country background report
- 12:00 – 13:40 Lunch meeting with Dr Suk-Min Chang, President of Korea National College of Rehabilitation and Welfare
- 15:00 – 15:30 Meeting with the Dr Jin Pyo Kim, Minister of Education and Human Resource development and Deputy prime Minister
- 15:30 – 18.30 Meeting with senior officials for higher education, MOE and Human Resource Development

#### **Tuesday, 18 October**

- 10.30 – 12.30 Korea Advanced Institute of Science and Technology, Daejeon. Dr Robert B. Laughlin, President and senior administrators
- 14.00 – 17.00 Meeting with senior officials of the Ministries of Finance, Planning and Budget, Labour, Commerce and Science and Technology

#### **Wednesday, 19 October**

- 10:00 – 13:00 Meetings with various stakeholders at Handong Global University, Pohang
- 14.30 – 15.30 Meeting with various stakeholders at Pohang University of Science and Technology (POSTECH)

#### **Thursday, 20 October**

- 09:30 – 12:00 Meeting with various stakeholders at Yonsei University (including senior administrators, faculty senator, director of staff labour union, student representatives)
- 13:30 – 14:00 Meeting with Hwang Woo Yea, Chair of the Education Committee of the National Assembly
- 14.30 – 16.00 Federation of Korean Industries

**Friday, 21 October**

- 10:00 – 12:00 Seoul National University. Meeting with senior administrators, staff and student representatives
- 12:00 – 14:00 Lunch meeting with members of the faculty council, Seoul national University
- 15.00 – 17.00 Human Resource Department, Hyosung Group
- 18.00 – 20.00 Welcome dinner hosted by the President of KEDI

**Monday, 24 October**

- 10:30 – 13:30 Korea University of Technology and Education, Choen-An. Meeting with various stakeholdersmeetings with school administrators and HE researchers (economists)

**Tuesday, 25 October**

- 10:00 – 12:00 Ansan College, Ansan. Meeting with key stakeholders
- 12.00 – 13.30 Lunch with senior administrators
- 14.00 – 16.00 Ansan Techno Park
- 17.00 – 18.00 Meeting with Bong Ju Chung, Member of the Education Committee of the National Assembly

**Wednesday, 26 October**

- 11:00 – 12:00 Debriefing meeting with senior officials of the Ministry of Education and Human Resource Development
- 12.00 – 13.00 Farewell lunch hosted by Dr Gwang-Jo Kim, Deputy Minister for Education and Human Resource Development

## ANNEX 4

### COMPARATIVE INDICATORS ON TERTIARY EDUCATION

	Korea	OECD mean	Korea's rank <sup>1</sup>	Korea as % of OECD mean <sup>2</sup>
<b>OUTCOMES</b>				
<b>1. % of the population aged 25-64 with tertiary qualifications (2002)</b>				
Tertiary-type 5B - Total	8	8	15/25	100
Males	8	7	15/25	114
Females	7	9	15/25	78
Tertiary-type 5A and advanced research programmes - Total	18	15	10/30	120
Males	24	16	5/30	150
Females	13	14	16/30	93
<b>2. % of the population aged 25-34 with tertiary qualifications (2002)</b>				
Tertiary-type 5B	15	9	7/25	167
Tertiary-type 5A and advanced research programmes	26	19	4/30	137
<b>3. % of the population aged 25-64 with tertiary qualifications – time trends</b>				
1991	14	18	16/21	78
2002	26	23	13/30	113
<b>4. % of the population aged 25-34 with tertiary qualifications – time trends</b>				
1991	21	20	12/21	105
2002	41	28	3/30	146
<b>5. Survival rates in tertiary education (2002)</b>				
Number of graduates divided by the number of new entrants in the typical year of entrance				
Tertiary-type 5A education	79	70	5/20	113
Tertiary-type 5B education	74	73	11/17	101
<b>6. Average duration of tertiary studies (in years) (1995)</b>				
All tertiary education	3.4	4.2	15/19	81
Tertiary-type 5B education	2.1	2.2	=9/15	95
Tertiary-type 5A and advanced research programmes	4.2	4.7	12/18	89
<b>7. Tertiary graduates by field of study, First and Second degree<sup>3</sup> (2002)</b>				
Tertiary-type 5A				
Education	5.2	--	26/26	--
Humanities and arts	21.4	--	1/26	--
Social sciences, business and law	22.3	--	24/26	--
Services	2.9	--	11/26	--
Engineering, manufacturing and construction	27.4	--	1/26	--
Agriculture	2.6	--	8/26	--
Health and welfare	7.1	--	23/26	--
Life sciences	2.1	--	17/25	--
Physical sciences	3.5	--	6/25	--
Mathematics and statistics	1.9	--	4/25	--
Computing	3.5	--	12/25	--
Not known or unspecified	--	--	--	--
All fields	100.0	--	--	--

	Korea	OECD mean	Korea's rank <sup>1</sup>	Korea as % of OECD mean <sup>2</sup>
<b>Tertiary-type 5Bs</b>				
Education	9.0	--	8/19	--
Humanities and arts	14.8	--	3/22	--
Social sciences, business and law	15.9	--	19/23	--
Services	8.1	--	15/22	--
Engineering, manufacturing and construction	32.4	--	4/22	--
Agriculture	1.0	--	14/19	--
Health and welfare	9.6	--	15/21	--
Life sciences	0.0	--	8/9	--
Physical sciences	0.2	--	5/11	--
Mathematics and statistics	--	--	--	--
Computing	8.8	--	10/21	--
Not known or unspecified	--	--	--	--
All fields	100.0	--	--	--
<b>Advanced research programmes</b>				
Education	4.4	--	10/22	--
Humanities and arts	9.9	--	19/26	--
Social sciences, business and law	12.6	--	19/25	--
Services	2.9	--	3/19	--
Engineering, manufacturing and construction	28.4	--	1/25	--
Agriculture	4.7	--	16/25	--
Health and welfare	24.4	--	8/26	--
Life sciences	3.4	--	21/22	--
Physical sciences	5.4	--	20/21	--
Mathematics and statistics	1.5	--	18/19	--
Computing	2.3	--	10/19	--
Not known or unspecified	a	--	--	--
All fields	100.0	--	--	--
<b>8. Tertiary graduates by field of study<sup>3</sup> per 10,000 population, First and Second degree (2002)</b>				
<b>Tertiary-type 5A</b>				
Education	3.72	--	20/25	--
Humanities and arts	15.38	--	1/25	--
Social sciences, business and law	16.04	--	17/25	--
Services	2.10	--	10/25	--
Engineering, manufacturing and construction	19.74	--	1/25	--
Agriculture	1.90	--	5/25	--
Health and welfare	5.10	--	17/25	--
Life sciences	1.53	--	10/24	--
Physical sciences	2.50	--	4/24	--
Mathematics and statistics	1.40	--	2/24	--
Computing	2.54	--	11/24	--
Not known or unspecified	--	--	--	--
All fields	71.95	--	11/25	--
<b>Tertiary-type 5B</b>				
Education	7.15	--	4/19	--
Humanities and arts	11.67	--	1/20	--
Social sciences, business and law	12.56	--	3/22	--
Services	6.43	--	2/21	--
Engineering, manufacturing and construction	25.63	--	1/21	--
Agriculture	0.79	--	5/18	--
Health and welfare	7.62	--	4/20	--
Life sciences	0.03	--	5/9	--
Physical sciences	0.19	--	4/10	--
Mathematics and statistics	--	--	--	--
Computing	7.00	--	2/20	--
Not known or unspecified	--	--	--	--
All fields	79.06	--	1/24	--

	Korea	OECD mean	Korea's rank <sup>1</sup>	Korea as % of OECD mean <sup>2</sup>
Advanced research programmes				
Education	0.08	--	10/21	--
Humanities and arts	0.17	--	19/25	--
Social sciences, business and law	0.22	--	16/24	--
Services	0.05	--	5/18	--
Engineering, manufacturing and construction	0.50	--	5/24	--
Agriculture	0.08	--	15/24	--
Health and welfare	0.43	--	8/25	--
Life sciences	0.06	--	18/21	--
Physical sciences	0.10	--	18/20	--
Mathematics and statistics	0.03	--	16/18	--
Computing	0.04	--	14/18	--
Not known or unspecified	a	--	--	--
All fields	1.77	--	13/25	--
<b>9. Employment ratio and educational attainment<sup>4</sup> (2002)</b>				
Number of 30 to 34-year-olds in employment as a percentage of the population aged 30 to 34				
Lower secondary education				
Males	86	80	12/29	108
Females	55	52	13/29	106
Tertiary education, type B (Tertiary-type 5Bs)				
Males	92	93	17/25	99
Females	43	81	25/25	53
Tertiary education, type A (Tertiary-type 5A) and advanced research programmes				
Males	93	94	20/29	99
Females	51	81	29/29	63
<b>10. Unemployment ratio and educational attainment<sup>5</sup> (2002)</b>				
Number of 30 to 34-year-olds who are unemployed as a percentage of the population aged 30 to 34				
Tertiary education, type B (Tertiary-type 5B)				
Males	4.4	3.4	6/25	129
Females	2.2	3.1	14/25	71
Tertiary education, type A (Tertiary-type 5A) and advanced research programmes				
Males	2.6	3.1	19/29	84
Females	1.0	3.5	29/29	29
<b>11. Earnings of tertiary graduates aged 25-64 relative to upper secondary graduates aged 25-64 (1998) (upper secondary = 100)</b>				
Tertiary-type 5B	106	--	17/19	--
Tertiary-type 5A	147	--	15/21	--
<b>12. Earnings of tertiary graduates aged 30-44 relative to upper secondary graduates aged 30-44 (1998)(upper secondary = 100)</b>				
Tertiary-type 5B	113	--	15/19	--
Tertiary-type 5A	142	--	15/21	--
<b>PATTERNS OF PARTICIPATION</b>				
<b>13. Participation rates of all persons aged 15 and over by programme (2001)</b>				
Per cent of all persons aged 15 and over in tertiary type-5B programmes	3.48	0.66	1/23	527
Per cent of all persons aged 15 and over in tertiary type-5A programmes	4.91	3.99	6/24	123
Per cent of all persons aged 15 and over in tertiary type-6 programmes	0.09	0.16	16/21	56
Per cent of all persons aged 15 and over in all tertiary programmes	8.48	4.58	1/25	185
<b>14. Index of change in total tertiary enrolment (2002) (1995 = 100)</b>				
Total				
Attributable to change in population <sup>6</sup>	84	95	18/19	88
Attributable to change in enrolment rates <sup>7</sup>	175	137	3/19	128

	Korea	OECD mean	Korea's rank <sup>1</sup>	Korea as % of OECD mean <sup>2</sup>
<b>15. Enrolment rates (2002)</b>				
Full-time and part-time students in public and private institutions, by age				
Students aged 15-19 as a percentage of the population aged 15-19	79.9	79.4	18/27	101
Students aged 20-29 as a percentage of the population aged 20-29	26.5	22.7	9/27	117
Students aged 30-39 as a percentage of the population aged 30-39	1.7	5.4	23/27	31
Students aged 40 and over as a percentage of the population aged 40 and over	0.4	1.5	16/23	27
<b>16. Age distribution of enrolments (2002)</b>				
Persons aged 35 and over as a per cent of all enrolments in tertiary type-5B programmes	6.6	16.2	13/18	41
Persons aged 35 and over as a per cent of all enrolments in tertiary type-5A programmes	1.1	9.7	22/24	11
Persons aged 35 and over as a per cent of all enrolments in tertiary type-5A +5B programmes	3.4	10.2	19/24	33
Persons aged 35 and over as a per cent of all enrolments in tertiary type-6 programmes	39.7	32.5	7/21	122
Persons aged less than 25 as a per cent of all enrolments in tertiary type-5B programmes	79.6	60.8	8/25	131
Persons aged less than 25 as a per cent of all enrolments in tertiary type-5A programmes	85.4	64.7	1/26	132
Persons aged less than 25 as a per cent of all enrolments in tertiary type-5A +5B programmes	83.0	63.8	3/26	130
Persons aged less than 25 as a per cent of all enrolments in tertiary type-6 programmes	2.0	10.0	17/21	20
<b>17. Gender distribution of enrolments (2002)</b>				
Females as a per cent of enrolments in tertiary type-5B programmes	36.3	55.1	28/28	66
Females as a per cent of enrolments in tertiary type-5A programmes	36.6	52.9	28/28	69
Females as a per cent of enrolments in tertiary type-5A+B programmes	36.5	53.3	28/28	68
Females as a per cent of enrolments in tertiary type-6 programmes	27.7	43.3	26/27	64
Females as a per cent of total tertiary enrolments	36.4	53.0	28/28	69
<b>18. Net entry rates into tertiary education<sup>8,1</sup> (2002)</b>				
Tertiary-type 5B				
Total	58	16	1/20	363
Males	57	14	1/19	407
Females	59	18	1/20	328
Tertiary-type 5A				
Total	52	51	10/24	102
Males	55	45	5/23	122
Females	49	55	13/23	89
<b>19. Distribution of students in tertiary education by type of institution<sup>9</sup> (2002)</b>				
Tertiary-type 5B education, public	14.1	68.6	26/28	21
Tertiary-type 5B education, independent private	85.9	13.7	2/14	627
Tertiary-type 5A and advanced research programmes, public	22.7	79.0	28/28	29
Tertiary-type 5A and advanced research programmes, independent private	77.3	11.4	1/14	678
<b>20. Distribution of students in tertiary education by mode of study (2002)</b>				
Tertiary-type 5B education				
Full-time	100.0	78.9	=1/29	127
Part-time	a	21.8	--	--
Tertiary-type 5A and advanced research programmes				
Full-time	100.0	83.9	=1/29	119
Part-time	a	16.7	--	--
<b>Foreign students as a percentage of all students (2002) (foreign and domestic students)<sup>10</sup></b>				
	0.2	5.7	26/27	4
<b>National students enrolled abroad in other reporting countries relative to total tertiary enrolment<sup>11</sup> (2002)</b>				
	2.6	4.1	17/29	63
<b>Index of change in foreign students as a percentage of all students (2002) (foreign and domestic students) (1998 = 100)</b>				
	160	--	5/22	--
<b>21. Expected changes of the 20-29 age group by 2012 relative to 2002 (2002 = 100)<sup>12</sup></b>				
	81	96	23/30	84

	Korea	OECD mean	Korea's rank <sup>1</sup>	Korea as % of OECD mean <sup>2</sup>
<b>22. Upper secondary attainment rates</b>				
% of persons aged 25-34 with at least upper secondary education	95	75	1/30	127
<b>23. Expected years of tertiary education under current conditions (2001)</b>				
Full time and part-time <sup>13</sup>	4.0	2.7	3/27	148
<b>EXPENDITURE</b>				
<b>24. Annual expenditure on tertiary education institutions per student, public and private institutions</b>				
In equivalent US dollars converted using PPPs, based on full-time equivalents				
All tertiary education (including R&D activities)	6618	10 052	20/26	66
Tertiary-type 5B education (including R&D activities)	4295	--	12/16	--
Tertiary-type 5A and advanced research programmes (including R&D activities)	8236	--	10/17	--
<b>Annual expenditure on tertiary education institutions per student relative to GDP per capita, public and private institutions (2001)</b>				
Based on full-time equivalents				
All tertiary education (including R&D activities)	42	42	13/26	100
Tertiary-type 5B education (including R&D activities)	27	28	8/15	96
Tertiary-type 5A and advanced research programmes (including R&D activities)	52	43	3/16	121
<b>25. Cumulative expenditure on educational institutions per student over the average duration of tertiary studies<sup>14</sup> (2001)</b>				
In equivalent US dollars converted using PPPs				
All tertiary education	22 701	42 906	17/19	53
Tertiary-type 5B education	8 890	--	10/12	--
Tertiary-type 5A and advanced research programmes	34 756	--	11/14	--
<b>26. Expenditure on tertiary education institutions as a percentage of GDP, from public and private sources</b>				
Tertiary-type 5B education, 2001	0.7	0.2	2/18	350
Tertiary-type 5A education, 2001	2.0	1.1	1/19	182
All tertiary education, 2001	2.7	1.3	1/29	208
<b>27. Relative proportions of public and private expenditure on educational institutions, for tertiary education</b>				
Distribution of public and private sources of funds for educational institutions after transfers from public sources				
Public sources, 2001	15.9	78.2	26/26	20
Private sources, household expenditure, 2001	58.1	17.1	1/21	340
Private sources, expenditure of other private entities, 2001	26.0	9.7	2/17	268
Private sources, all private sources, 2001	84.1	21.8	1/26	386
<b>28. Distribution of total public expenditure on tertiary education (2001)</b>				
Public expenditure on tertiary education transferred to educational institutions and public transfers to the private sector, as a percentage of total public expenditure on tertiary education				
Direct public expenditure on public institutions	70.2	69.8	17/25	101
Direct public expenditure on private institutions	23.1	11.6	4/21	199
Indirect public transfers and payments to the private sector	6.7	18.2	22/27	37
<b>29. Expenditure on tertiary education institutions as a proportion of total expenditure on all educational institutions (2001) Public and private institutions</b>				
	32	24	3/26	133
<b>30. Total public expenditure on tertiary education (2001)</b>				
Direct public expenditure on tertiary institutions plus public subsidies to households (which include subsidies for living costs, and other private entities)				
As a percentage of total public expenditure	1.7	2.8	19/22	61
As a percentage of GDP	0.5	1.3	29/29	38
<b>31. Subsidies for financial aid to students as a percentage of total public expenditure on tertiary education (2001)</b>				
Scholarships / other grants to households	0.8	9.7	25/27	8
Student loans	8.7	7.8	9/16	112
Scholarships / other grants to households attributable for educational institutions	0.8	1.3	9/9	62

	Korea	OECD mean	Korea's rank <sup>1</sup>	Korea as % of OECD mean <sup>2</sup>
<b>32. Expenditure on tertiary education institutions by resource category (2001)</b>				
Distribution of total and current expenditure on tertiary education institutions from public and private sources				
Percentage of total expenditure				
Current	79.5	88.5	26/27	90
Capital	20.5	11.5	2/27	178
Percentage of current expenditure				
Compensation of teachers	34.2	42.4	10/15	81
Compensation of other staff	11.1	22.7	15/15	49
Compensation of all staff	45.2	67.1	28/28	67
Other current	54.8	32.9	1/28	167
<b>RESEARCH AND DEVELOPMENT</b>				
<b>33. Gross domestic expenditure on Research and Development (R&amp;D) as a percentage of GDP (2002) Source: OECD (2005)</b>				
2002	2.53	2.26	6/20	112
1991	1.82	2.21	11/24	82
<b>34. Higher education<sup>15</sup> expenditure on R&amp;D as a percentage of GDP Source: OECD (2005)</b>				
2002	0.26	0.41	17/21	63
1995	0.19	0.36	22/27	53
<b>35. Percentage of gross domestic expenditure on R&amp;D by sector of performance (2002) Source: OECD (2005)</b>				
higher education <sup>15</sup>	10.4	18.2	18/19	57
(higher education in 1995)	8.2	17.5	25/26	47
business enterprise	74.9	67.9	1/19	110
government	13.4	11.0	11/19	122
private non-profit sector	1.3	2.9	7/15	45
<b>36. Percentage of higher education<sup>15</sup> expenditure on R&amp;D financed by industry Source: OECD (2005)</b>				
2002	13.9	5.9	2/17	236
1995	22.4	5.8	1/27	386
<b>37. Total researchers per thousand total employment Source: OECD (2005)</b>				
2001	6.3	--	10/21	--
1995	4.9	5.8	12/25	84
<b>38. Researchers as a percentage of national total (full time equivalent) (2001) Source: OECD (2005)</b>				
higher education <sup>15</sup>	16.9	--	22/22	--
(higher education in 1995)	19.3	27.0	25/26	71
business enterprise	73.5	--	1/22	--
government	8.8	--	18/22	--
<b>39. Share in OECD total "triadic" patent families<sup>16</sup> (%) (2001) Source: OECD (2005)</b>				
2001	1.17	--	11/30	--
1995	0.93	--	12/30	--
<b>40. Foreign PhD students as a per cent of total PhD enrolments (2002)</b>				
	1.9	13.2	15/18	14

#### NOTES FOR THE TABLES

##### Sources:

All data are from OECD (2004), *Education at a Glance*, OECD Indicators 2004, Paris, unless indicated otherwise in the table.

##### Other sources:

Eurydice (2003), *Key data on education in Europe - 2002 edition*, Brussels, [http://www.eurydice.org/Doc\\_intermediaires/indicators/en/frameset\\_key\\_data.html](http://www.eurydice.org/Doc_intermediaires/indicators/en/frameset_key_data.html)  
IALS, *International adult literacy survey database*

OECD (2004), *Learning for Tomorrow's World, First Results from PISA 2003*, OECD, Paris  
OECD (2005), *Main Science and Technology Indicators, volume 2004/2*, OECD, Paris

*Missing data:*

- a: Data not applicable because the category does not apply.
- x: Data included in another category or column.
- n: Magnitude is either negligible or zero.

*General notes:*

1. "Korea's rank" indicates the position of Korea when countries are ranked in descending order from the highest to lowest value on the indicator concerned. For example, on the first indicator "*% of the population aged 25-64 with tertiary qualifications, College - Total*", the rank "*x/x*" indicates that Korea recorded the *xx*<sup>st</sup> highest value of the *xx* OECD countries that reported relevant data. The symbol "=" means that at least one other country has the same rank.
2. "% of OECD mean" indicates Korea's value as a per cent of the OECD value. For example, on the first indicator "*% of the population aged 25-64 with tertiary qualifications, College - Total*", the percentage "*xx*" indicates that Korea's value is equivalent to *xx*% of the OECD mean.
3. These indicators show the ratio of graduates as a proportion to all fields of studies. The fields of education used follow the revised ISCED classification by field of education.
4. The employed are defined as those who during the survey reference week: *i*) work for pay (employees) or profit (self-employed and unpaid family workers) for at least one hour, or *ii*) have a job but are temporarily not at work (through injury, illness, holiday, strike or lockout, educational or training leave, maternity or parental leave, etc.) and have a formal attachment to their job.
5. The unemployed are defined as individuals who are without work, actively seeking employment and currently available to start work.
6. The impact of demographic change on total enrolment is calculated by applying the enrolment rates measured in 1995 to the population data for 2002: population change was taken into account while enrolment rates by single year of age were kept constant at the 1995 level.
7. The impact of changing enrolment rates is calculated by applying the enrolment rates measured in 2002 to the population data for 1995: the enrolment rates by single year of age for 2002 are multiplied by the population by single year of age for 1995 to obtain the total number of students that could be expected if the population had been constant since 1995.
8. The net entry rates represent the proportion of persons of a synthetic age cohort who enter a certain level of tertiary education at one point during their lives.
9. Educational institutions are classified as either *public* or *private* according to whether a public agency or a private entity has the ultimate power to make decisions concerning the institution's affairs. An institution is classified as *private* if it is controlled and managed by a non-governmental organisation (e.g., a Church, a Trade Union or a business enterprise), or if its Governing Board consists mostly of members not selected by a public agency. The terms "*government-dependent*" and "*independent*" refer only to the degree of a private institution's dependence on funding from government sources. A *government-dependent private institution* is one that receives more than 50% of its core funding from government agencies. An *independent private institution* is one that receives less than 50% of its core funding from government agencies.
10. Students are classified as foreign students if they are not citizens of the country for which the data are collected. Countries unable to provide data or estimates for non-nationals on the basis of their passports were requested to substitute data according to a related alternative criterion, e.g., the country of residence, the non-national mother tongue or non-national parentage.
11. The number of students studying abroad is obtained from the report of the countries of destination. Students studying in countries which did not report to the OECD are not included in this indicator.
12. This indicator covers residents in the country, regardless of citizenship and of educational or labour market status.
13. School expectancy (in years) under current conditions excludes all education for children younger than five years. It includes adult persons of all ages who are enrolled in formal education. School expectancy is calculated by adding the net enrolment rates for each single year of age.
14. Country mean for countries with 1995 and 2001 data.
15. "Higher Education" includes all universities, colleges of technology and other institutions of post-secondary education, whatever their source of finance or legal status. It also includes all research institutes, experimental stations and clinics operating under the direct control of or administered by or associated with higher education institutions. For detail, see OECD (2002), *Frascati Manual 2002: Proposed Standard Practice for Surveys on Research and Experimental Development*.
16. "Triadic patent" means patents filed all together to the European Patent Office (EPO), the US Patent and Trademark Office (USPTO) and the Japanese Patent Office (JPO). This indicator shows each country's share in total triadic patents filed by OECD countries. Reference year is when the priority patent is filed. Data is estimated by the OECD Secretariat and provisional. Because a few countries share large proportion of triadic patents, other countries have small share.

*Country specific note:*

- i. Net entry rate is calculated as gross entry rate.