Programme of Dialogue and Co-operation with China

THEMATIC REVIEW OF THE FIRST YEARS OF TERTIARY EDUCATION

COUNTRY NOTE: PEOPLE'S REPUBLIC OF CHINA
FOREWORD

Large volume participation in tertiary education is a common feature in the OECD area. To acknowledge this is not to say that there are settled views on policy directions to meet the new challenges raised of quality, relevance, effectiveness and cost in programmes, teaching and learning at this level of education.

Australia, France, Germany, Japan, New Zealand and the United Kingdom, Belgium (Flemish Community), Denmark, Norway, Portugal, Sweden and the United States participated in the OECD Education Committee’s “thematic review” of the first years of tertiary education, the findings and conclusions of which were published in Redefining Tertiary Education in 1998.

The timeliness and relevance of the issues and conclusions of this work led the People’s Republic of China (PRC) to request a similar exercise within the framework of the Centre for Co-operation with Non-Members (CCNM). This Country Note was discussed at a joint OECD/PRC seminar in Beijing in November 2000 when officials from the participating countries, colleagues from other OECD Member countries and observers reviewed findings and suggested directions for policy. The views presented and discussed revealed the depth of concern, scope of policy action and general agreement that the nature and extent of the national policy debates now underway throughout the OECD area may signal nothing less than a fundamental shift in thinking about the context for tertiary education and its aims.

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The PRC team was headed by Ms. Yu Wei, Vice Minister of Education; Mr. Zhang Li, Director of the National Centre for Education Development Research; Mr. Zheng Fuzhi, Deputy Director General, Department of Development Planning; Mr. Fan Wenyao, Deputy Director of the National Centre for Education Development Research; and Ms. Yang Xiuwen, research specialist of the National Centre for Education Development Research

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Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>4</td>
</tr>
<tr>
<td>The Context</td>
<td>5</td>
</tr>
<tr>
<td>Expansion and Access</td>
<td>6</td>
</tr>
<tr>
<td>A vision for the future</td>
<td>10</td>
</tr>
<tr>
<td>Restructuring</td>
<td>11</td>
</tr>
<tr>
<td>Distance Education and Other Technology Initiatives</td>
<td>13</td>
</tr>
<tr>
<td>Financing</td>
<td>15</td>
</tr>
<tr>
<td>Private Universities</td>
<td>18</td>
</tr>
<tr>
<td>Labour Market Linkages</td>
<td>19</td>
</tr>
<tr>
<td>Conclusion: Steering and the expansion of tertiary education</td>
<td>21</td>
</tr>
<tr>
<td>Strategic instruments for steering</td>
<td>22</td>
</tr>
<tr>
<td>Formulating goals</td>
<td>22</td>
</tr>
<tr>
<td>A legal framework</td>
<td>23</td>
</tr>
<tr>
<td>Programmes addressing national goals</td>
<td>23</td>
</tr>
<tr>
<td>Equality of access</td>
<td>24</td>
</tr>
<tr>
<td>Supply and demand information</td>
<td>25</td>
</tr>
<tr>
<td>Research and innovation</td>
<td>25</td>
</tr>
<tr>
<td>Teaching and learning</td>
<td>25</td>
</tr>
<tr>
<td>Reporting</td>
<td>26</td>
</tr>
<tr>
<td>Sharing responsibility for these functions</td>
<td>26</td>
</tr>
</tbody>
</table>
"Following the stepping stones across the river"

Managing rapid expansion of tertiary education provision

Introduction

In 1998 the OECD published a comparative report on the first years of tertiary education. This thematic study, which looked at developments in 12 OECD countries, provides a comprehensive, forward-looking comparative analysis of how systems, institutions and individual learners are responding – and will need to continue to respond – to changing conditions, including how to accommodate large volume participation (now the norm in OECD countries); how to ensure that tertiary-level learning options appropriately and effectively meet the needs and interests of learners as well as the demands of the economy and society; and how to address the competing demands and constraints on public and private budgets in meeting the costs.

In this context the terms “tertiary education” and the “first years” used in the OECD report require explanation. “Tertiary” refers to a stage or level of programmes and learning beyond secondary education that is provided through universities and other types of institutions and arrangements, is undertaken full- or part-time, in residence or at a distance, and is pursued by young and older adults. The “first years” are those leading to an initial qualification recognised to be of value in the labour market. Universities and other tertiary education institutions account for most of the volume and diversity of students in the first years of tertiary education, but now increasingly complemented by new arrangements for tertiary-level learning outside of the sector.

China, too, is in the midst of a major economic reform process in which education, and in particular at the higher levels, has a pivotal role in helping to sustain the growth potential of the country. Grasping the opportunities presented by the knowledge society and the growing impact of technology and the Internet will depend on equipping people, young and old, with the intellectual, technical and interpersonal skills of the 21st century. The Chinese authorities and the OECD agreed it would be valuable to embark on a study of the very extensive developments in tertiary education in China, against the background of the comparative framework established for the OECD study, so that the experience gained both in OECD countries and in China might provide the basis for informing policy reform more generally. The co-operation that already exists between the OECD and China through the World Education Indicators programme and the OECD Programme for International Student Assessment has provided an excellent starting point for this new co-operative venture.

The study team brought together a range of national and international experience in tertiary education, in the same way as the teams that had conducted visits in the other countries participating in the larger OECD comparative activity. The team was very conscious that a visit of less than two weeks to China permitted only a fleeting glimpse of a country of immense size and population, with an unsurpassed richness of history, culture and educational tradition. The team was equally conscious of the risks of generalising conclusions from visits that took them only to Beijing and to Shaanxi Province. However, the extensive briefings provided by the Ministry of Education (MoE), the many Central and Provincial Government officials, as well as the professors and leaders of the institutions themselves and those in the private sector, allowed insights into current developments that have guided the study team in the preparation of this report. The team wishes to recognise the openness and frankness of the discussions and readiness of their interlocutors to answer the unending series of questions posed, which helped with understanding what are very complex and difficult reforms being put in place and provided the necessary confidence to frame this report and the ideas put forward in it.

The team particularly wishes to express its appreciation to Mr. Zheng Fuzhi, Deputy-Director General, Department of Development Planning, in the Ministry of Education, Mr. Fan Wenyao, Deputy Director General, National Center for Education Development Research, Professor Wang Xiaohui, Director of the Centre’s Comparative Education Division, and their colleagues. In meetings and conversations with them over the course of the visit, the team was able to explore a wide range of options for tertiary education. On this, the team also had the benefit of Professor Wang, Beijing Normal University, who accompanied the team on its study visit.

It is not claimed here that there is one single blueprint for successful national education policies – there is not. As described in the Country Notes prepared by OECD study teams for each of the 12 countries that already have participated in this comparative exercise, the distinctiveness of national characteristics is evident from the OECD countries themselves. But this should not stand in the way of greater international exposure of tertiary education systems and reinforced co-operation, especially in the exchange of students and faculty as well as research. It is hoped that the views offered in this document based on the comparative experience of other countries will provide some input into the consideration of future developments in China.

The Context

The importance attached to the place of learning and education in the current reforms in China was evident from the many conversations which took place during the study visit. The fact that a Working Group on Science and Education has been established under the chairmanship of the Premier is clear evidence of the support for the reform effort in education at the highest political level. As China embraces the knowledge-based economy of the 21st century, the emphasis on the development of the human capital that will ensure China’s transition to a middle-income country by 2020 was uppermost in the minds of those met by the team.

China’s open-door policy over the past twenty years has been remarkably successful in achieving high and sustained rates of economic growth. During the period since 1978, GDP growth has averaged 9.8% annually. The proportion of the population in absolute poverty has fallen from more than half in 1978 to 8% (under national definitions) in 1997. By 1997, China had become the world’s fifth largest trader and second largest recipient of foreign direct investment. These aggregate trends, of course, conceal complex patterns of diversity across the Provinces, with the coastal regions continuing to achieve the more dynamic development.

Moving into the learning society poses real challenges for Chinese education, as it does for the education systems of all countries. Learning is no longer the preserve of the young. Education and learning systems must now provide for a spectrum of needs that are not bound by age. Compulsory education, on which there is a particular emphasis in China, has the responsibility to set the foundation for lifelong learning, by creating in each individual the ability and the motivation to continue the process of learning throughout life. As a very perceptive paper prepared by China for the 2000 APEC Education Ministers Meeting in Singapore put it, “the survival and development of each member of human society will increasingly depend on lifelong learning and creative activities”. 2 This is a challenge familiar to policy makers across the world. In the OECD countries it has been recognised that building learning systems that address the needs of the lifelong learner can only be achieved through a strategic and global approach that embraces in the reform process all programmes and institutions.

An initial impression that inevitably strikes an outside observer of Chinese education is of a very fragmented system. Responsibility for managing and funding its various aspects has long been invested in a range of Ministries, and other Central, Provincial and Municipal authorities. Adult tertiary education seems to reside in a separate system, somehow apart from the “main” tasks of tertiary education institutions. This segmentation has not permitted the development of a comprehensive and holistic approach to the reform of the whole system.

The current ambitious reforms in China are aimed not only at addressing these shortcomings but also at introducing, in the words of the APEC discussion paper, “comprehensive innovation in education in order to meet the constantly changing social life and new patterns of economic growth”. This report explores how the reforms seem to be framed and are developing, as seen from the perspective of OECD countries and recent experience in the OECD area.

The concerns that motivated the OECD’s Redefining Tertiary Education are very similar to those that the team was told were driving reform in China. They include:

- extensive and expanding student participation
- greater diversity in those seeking access to tertiary education
- changing needs and expectations of students, families, employers and the community
- growing concerns over quality and purpose
- emerging scenarios for lifelong learning
- competing demands for scarce public resources
- challenges and opportunities offered by information and communication technologies.

Although the reform and restructuring of the universities and other tertiary education institutions in China began some years ago, the process has considerably accelerated especially over the past two years.

**Expansion and Access**

In 1999 long-term aims were set by China for the development of all types of education towards the year 2010. The goal for tertiary education was to achieve an enrolment ratio of 15% of the 18-22 age group. There are fairly clear indications that that target will be achieved ahead of time. The team had the impression from its discussions that there are extensive developments, internal and external to the education system, that will have considerable bearing on how that goal can and indeed should be achieved before 2010.

First there are the pressures of the knowledge society and the prevalence of technology driving radical changes in the labour market, the nature of employment and the new and different skills and qualifications that are now needed. Economic development over the past twenty years has enabled China to become the world’s fifth largest trading partner and the process towards membership of the WTO will offer opportunities and challenges, especially to those sectors of the Chinese economy that will be exposed to greater international competition. All of this, together with the declared intention that China will become a middle-income country by 2020, will call out for more highly skilled people. Add to that the burgeoning social demand for education and the pressures for rapid expansion seem overwhelming.

Second, within the education system itself, although the reform and restructuring of the Universities and other tertiary institutions began some years ago, the process has considerably accelerated
especially over the past two years. In 1999 the gross enrolment rate for tertiary education\(^3\) was 10.5% and 11% in 2000, with 11 million students receiving all types of tertiary education – twice as many as in 1990. This represents a 17% increase over 1999 and illustrates the flexibility and the increased capacity that the restructuring has introduced into the system. According to analyses carried out by the National Center for Education Development Research, the 15% goal could be achieved around 2005-2006 just at the moment when the youth demographic curve reaches its peak. (see Chart 1).

Chart 1. Projections of growth in tertiary education enrolment in China, 2000 to 2010


But entering university is only one part of the story. Successful completion is the other. Typically 20-25% of university entrants in OECD countries do not complete their studies on schedule. University survival rates differ among countries, in ways that are not fully explained by participation rates. For example, the United States has a high access and a high dropout rate, while Finland, New Zealand and the United Kingdom have high participation rates and low dropout rates.\(^4\) Other factors are at work, including in some countries a reinforcement of policies and practices that can work to foster success and completion.

Expansion implies a transition from an elite to a mass system. That transition also implies that tertiary education shifts from being a “public” good to a “semi-public” good. The explosion in participation is a direct response to combined social and economic demand. As economic conditions improve and the Chinese people enjoy more prosperous lifestyles, the demands and expectations of parents

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3. TEIs (tertiary education institutions) consists of universities, 4- and 2-year colleges, 3-year colleges (polytechnics), advanced vocational education institutions (community colleges) and branch schools. Adult TEIs consists of radio/TV universities, workers/peasants' colleges, institutes of administration, educational colleges (in-service training course), independent correspondence colleges, evening schools, short-cycle courses. The enrollment data refer to individuals enrolled in these establishments, at tertiary level. Tertiary level, in this case, means that the programmes are aimed at those who have completed the full cycle of secondary schooling.

for the education of their children grow, especially for university education. It is no longer simply a question of aspiring to attend a university, but, rather, of going to a good one. While in the past families built up savings in order to pass the wealth on to their children, they are now more interested in using these savings (estimated at 60 trillion RMB) to invest in their children’s education. This is a distinctive Chinese cultural feature, which is not found in countries that opt for high levels of public spending. The evolution towards a large-volume system in China may well follow a different path from that taken in some European countries.

Though the numbers of students involved are far smaller, many OECD countries have witnessed very significant increases of the order of 50% and more in tertiary education enrolments between 1990 and 1997. Enrolments more than doubled in Portugal, Poland, Hungary; increased by nearly 90 percent in Turkey and the United Kingdom; grew by around 50 per cent in the Czech Republic, Ireland, Korea, New Zealand and Sweden. The experiences in implementing these increases and in otherwise managing the changing world of tertiary education contain lessons that might be useful to China as she undertakes these ambitious policies.

For example, typical Chinese assumptions about undergraduate education seem to include:

a) eligible students are very recently graduated from secondary schools;

b) students live in residence, on-campus, at the colleges and universities;

c) students attend full-time courses;

d) students graduate in 3 or 4 years depending on the programme; and

e) students learn in settings where there is one full-time faculty person for every 15 or so students.

In fact, every one of these assumptions is being challenged in many OECD countries. The typical student in the United States is 27 years old, lives off-campus, goes to school part-time and is going to a two-year community college. Those who go to four-year colleges average 24 years of age, take 6 years to graduate, live off-campus and work part-time. And the ratio of students to faculty varies greatly across America. To a greater or lesser extent, many of these patterns can be seen in such other OECD countries as Sweden, Australia, the Netherlands, Germany and the United Kingdom; partly as a consequence of growth itself, tendencies in these directions now are evident in nearly all OECD countries.

When the typical assumptions under gird a national policy for expansion of tertiary education, the result is the expansion of existing facilities or the development of new facilities that are expensive, take time to build and that are often at a great distance from the population of students that lack access. One of the interesting characteristics of many OECD national systems of tertiary education is that over 50% of students go to a school located within 25 miles of their home. This is true even within the large nations.

Moreover a rapid expansion of this sort will usually require either a substantial increase in the workload of existing faculty and/or the training and hiring of a large number of new faculty in a very limited time. Although the Ministry of Education plan calls for a dramatic expansion of graduate students, most of these highly talented people will end up in the professions or private industry rather than as members of the professoriate. Therefore, should such massive growth in demand be met in more or less

conventional ways, one result could be a substantial reduction in quality due to the extra workload for existing staff and/or the recruitment of untrained staff.

Finally, two other considerations are important. The first concerns the supply and equality of access, as the number of regular tertiary education students expands in a dramatic fashion over the next decade. Although there are a substantial number of talented students in China who apply and do not now obtain admission as undergraduates, just as many more have not had the opportunity to take the kinds of courses of study that would prepare them to go on to University. These students exist in the provinces of the East as well as the West. Many are in secondary schools that do not have the necessary expertise on the faculty to enable their students to effectively prepare for examinations. By way of comparison, average completion rates at the upper secondary level in China are 48% – though in urban centres such as Beijing rates can reach 92% – against average OECD completion rates of 80% but with some countries exceeding 90%. As access is expanded these students, too, need to be given the opportunity to compete for places.

The second consideration has to do with adult students, particular those who did not pass examinations. In many OECD countries, there are opportunities for these students to try again for entry to all types of tertiary education including university studies. Often the criterion for their admission is a combination of success in life and in courses in tertiary institutions such as community colleges in the United States rather than success on a single university entrance examination (access systems which have often been found to have less than perfect reliability). In countries where the flows between tertiary education institutions are more limited, such as Norway or Denmark, rely on other options to draw in such students. The Mjøes Commission in Norway has proposed open access for any adult who has completed secondary education or its equivalent, a policy of long standing in New Zealand. Sweden’s 25 plus 5 scheme sets aside places for adults who are 25 years old and have five years of relevant work experience.

These policies have had the effect of opening up for adults all forms of tertiary education. Substantial numbers of these students, particularly those who were under-prepared for, or opted out of the initial university examination, go on to graduate and move into important places in society. Further, there are also those students in areas where economic performance is good and jobs available who go into employment directly from school. A second or even a third chance to go to university or other forms of tertiary education is a growing characteristic of learning societies. No country can afford to lose talent.

The solution to the problems posed in the preceding paragraphs, as many countries have discovered, is an approach to expansion that focuses on quality and access together, is nimble and open to innovation, attendant to local needs and resources and varied in strategy. China has a variety of resources and policies already in place that will facilitate expansion. These include Project 211, an aggressive effort to expand and improve the system so that at the beginning of the 21st Century China will have 100 universities and a group of key disciplinary areas of first class quality; decentralisation, leaving to the Provinces responsibility for about 900 tertiary education institutions which should make them more attuned to local needs; a private sector (profit and not-for-profit) that is eagerly looking to expand; and an emerging and enlightened set of projects and policies to expand the use of technology, particularly in the area of distance education.

Perhaps the most critical component will be how the MoE steers rather than controls, and works to ensure the access of the poor and underserved. Each of the efforts already underway needs attention. Project 211 could serve only a narrow proportion of the society, or it could support and help improve universities and other forms of tertiary education across the nation; decentralisation of authority over former national universities to the Provinces will succeed in improving their quality and reach only if they have the necessary resources, including resources to support the retirement and health care systems that they have inherited; the private sector will only expand with quality and speed if MoE regulations support thoughtful accreditation and oversight, reflecting their distinctive profiles and roles, and enable the growth
and continuation of the institutions over time; distance education and related technology initiatives will succeed if the MoE can strike the proper balance between oversight and stimulation and can support a serious programme in applied research and knowledge dissemination.

A vision for the future

Confronted with similar concerns about how to respond to continuing growth and large-volume participation, the OECD comparative study found that an important first step was to establish a coherent and inclusive vision for any future educational reform. As the Secretariat report on the most recent developments in OECD countries observes, authorities have set out and continue to stress a broad vision of education at the tertiary level, encompassing a range of providers including universities and giving particular attention to linkages to the labour market and society more widely. The team considers that developing such a holistic and inclusive vision is a prerequisite for successful educational reform as China builds the human capital needed to move towards becoming a middle-income country by the year 2020. Such a vision would be very much in line with the conclusions of the plenum of the Central Committee on 10 October 2000 that “… a major strategic task for the future is to train, attract and give full play to talented personnel and that efforts should be made to vigorously develop human resources, step up the development of education and build up a huge contingent of quality talents”.

A number of important elements of such a vision are now falling into place. The discussion paper prepared for the recent APEC Education Ministerial meeting laid out clear objectives to guide “a new round of educational reforms and innovations”. The team was also informed that the 10th Five-Year Plan now in preparation would be different from its predecessors in that it would be drafted “according to the market” and would remain at the macro-level, providing directions rather than prescribing detailed implementation of educational programmes. However, one aspect that underpins the approach of most countries is the acceptance that learning should be a lifelong process. This implies that the learning system should be seen as an interlocking whole, offering opportunities to all ages. This does not seem to be the case in China. The team was left with the impression that at present adult education is somehow set apart. Integrating adult learning into the overall approach will be essential if China is to seize the opportunities of the knowledge society.

It should be possible to build upon these and other elements, which will be explored in this report to develop an approach that will allow the education system to be steered at the strategic level by the Ministry of Education, with implementation taking place at local level. The question of steering will be returned to later in this report.

The team agrees with the Ministry of Education vision for the future that combines the idea of a lifelong learning network with the goal of increasing access to tertiary education. There is a lot to learn from the experiences of OECD and non-OECD countries about how these goals can be jointly achieved. From the meeting with officials in Xi’an and Beijing it was clear that two issues in particular will be critical.

Who will be the providers? From discussions with the Ministry, university officials and local and provincial officials, the impression received is that responsibility for tertiary education would be distributed among a variety of providers. The team would like to underline here the importance of the providers being open to the needs of all age groups. The traditional providers (public and private universities) will continue to be the intellectual leaders and will provide most of the instruction, at least for the short run. For the West and other rural areas, there may be a need for new institutions established locally or regionally that would be closely aligned and responsive to local community and Provincial needs and that would not be residential. Public or private, these institutions might also serve as stepping stones to
university and may, or may not, have collaborative relationships with existing universities. Both types of relationships are to be found in OECD countries. In either case, traditional and new institutions would provide on site and distance education. For the entire nation there would be an aggressive and nimble but thoughtfully regulated private sector that would range from providing content and hardware to other providers to providing content to consumers.

How will quality be assured, including in the distance education programs? During discussions, the following approach seemed to evolve as a candidate: the MoE and the Provinces would agree on a guidance and oversight system that would have four parts:

a) regulations and accreditation requirements for private providers that reinforce quality without overly restricting the market or narrowly defining content, context and method of teaching and learning;

b) a strategy for continuously assessing the quality of all (distance and on-site) new providers, consisting of independent expert evaluations of content and pedagogy, continuous and public feedback from users (students), and, when appropriate, exit examinations approved by the state for graduation or certification;

c) high quality research and development sponsored by the MoE that would provide direction and information to providers about how best to implement distance education; and

d) a system to provide all consumers with good information about their choices for tertiary education.

Restructuring

Changes in tertiary education provision are already evident, driven by the shifts in oversight of tertiary education institutions from line Ministries to the MoE and for all but a select group of leading research universities from the Central Government to the Provinces. A key motive for those shifts is to permit a concentration, consolidation and targeting of resources on leading universities in an effort to harness and capitalise on the expertise for teaching and research at the highest level. The team was privileged to visit such universities in Beijing and Xi’an, and to discuss important links with the institutes and programmes of the Academy of Sciences and with the economic sector. The importance of their current and potential contributions is appreciated.

As has been noted, the expansion now anticipated and desired will be responding to demands for tertiary education that are more diverse in terms of student backgrounds and interests and of needs in the labour market. The Ministry implicitly recognises this aspect of demand. In the expanded system, students will be participating in a variety of ways: part-time as well as full-time; at a distance as well as informal, on-site studies; and particularly through IT-based delivery of programmes offered by universities. Further, the Provincial oversight of some 900 institutions along with substantial provision through private providers is expected to bring study programmes more in line with local demands and needs. And, study options for adults remain available through a range of providers.

These elements of diversity in tertiary-level provision – existing, new and in view – are welcome. The OECD team carrying out the study visit of Portugal put such diversity in its wider context: “The country needs a diversity of talent, and a diversified approach to the educating and skilling of that talent.”

As participation increases, it is expected that demand will create further pressures on existing structures and arrangements for provision. First, the experience in OECD countries suggests that growing
demand leads to even greater departures from formerly limited and narrow options and isolated, closed study programmes, i.e. growing diversity whether in the form of expanded options for study in programmes other than regular university degree programmes or diversity within university programmes. Second, diversity appears to lead to a breaching of rigid boundaries. Put another way, categories of students can no longer be so easily distinguished according to programme enrolment: full- and part-time students are less easy to identify clearly, with respect to their backgrounds as well as current activities (concurrent work, for example) and programmes of study; young and mature age, working and ‘inactive’, fee-paying and publicly supported students now are more likely to sit alongside each other in classrooms, laboratories, libraries and computing centres. This point has been made earlier with respect to adults; such a blurring has potential implications for the structure and functioning of the tertiary education system as a whole. Finally, growing and diverse demands combine with constraints on public and family budgets to call for even more creative, innovative thinking about ways to foster diversity in provision. These are matters that continue to occupy policy attention in most OECD countries.

Among the areas for further development in the course of expansion, the following might be noted:

- Further development of tertiary-level institutions and programmes outside of universities. In some OECD countries, these institutions have developed with a strongly vocational orientation from vocational secondary schools (e.g. Denmark and France); in others, as distinct new forms of tertiary education [e.g., IUTs (Institut Universitaire de Technologie), also in France; technological universities in Mexico]. There are also the models of United States and Canadian community colleges and of further education in Australia and the United Kingdom. While each of these institutional sectors reflects their national contexts, they share two key features: a unique blending of vocationally-oriented and general studies and a spread of provision into under-served localities.

- Mergers of institutions, in ways that enable economies of scale and also new profiles, e.g. blending academic with more applied study orientations. The team heard of such aims in the universities visited, and note parallel developments strongly driven by policy in such countries as Belgium (Flemish Community) and Australia.

- Partnerships between institutions, particularly crossing Provincial boundaries to co-operate with institutions in the Western Provinces. Again, the team was told about such arrangements.

- Expanding private higher and tertiary education, including arrangements for overseas providers. OECD countries differ in the extent of private tertiary education provision, but the Portuguese case merits attention as a country that rapidly expanded enrolment through new private tertiary education institutions.

- New forms of co-operation in teaching and learning, with research institutes and with enterprises. In various discussions, these forms were described as already in place.

The variety of options and arrangements imply a diversity of institutions and providers in a framework which allows for a certain flexibility and responsiveness. The policy challenge is how to realise such a restructuring of tertiary education. The most promising policy orientation seems to be one that combines strong measures (e.g. a distinctive and strengthened tertiary education sector, new distance education arrangements) and weak measures (allowing private and overseas providers). Whatever the balance and mix, the Central Government has a key role to play in setting out a broad framework and
putting in place incentives and conditions under which these options can grow in response to demand. This is the approach followed, in different ways, in OECD countries.

Specific policies can encourage, rather than impede, such restructuring. First, quality assurance needs to be adapted in ways that allow for a more diverse set of learning options. Instead of a single “standard”, the challenge will be to arrive at a set of standards that correspond to the distinctive objectives of study programmes available, through universities, public or private, or a range of other providers. This challenge remains on the policy agenda in the OECD area. Second, means are needed to permit and ease movement into and across programmes, institutions, segments and systems. Access routes for adults into regular university and other tertiary education programmes have already been mentioned. Ireland’s new Qualifications Authority has as one of its responsibilities to promote recognition of learning within and between institutions as well as internationally. Third, public funds – whether from the Central Government or Provincial Government – should be provided on the basis of criteria that allow for institutional initiative and encourage varied forms of co-operation. With regard to the national universities, for example, public funds can be earmarked partly in support of new networking arrangements much as the French contracting policy is used to bring together enterprises and universities in a region.

Distance Education and Other Technology Initiatives

Most of the OECD countries and many other nations are entering into uncharted territory as they attempt to fulfill the promise of information technology (IT) to create educational quality and opportunity for millions of students around the world. China, along with a number of other large nations, has the chance to carry out an experiment of incredible magnitude and importance as it figures out how to harness this resource.

The goal set out by the MoE is to establish a comprehensive lifelong learning system with IT as its backbone by 2010. In the meantime, to succeed in reaching its interim goals for expansion of undergraduate and adult education, China will need steady step-by-step progress as it crosses this challenging river. The stepping-stones are there to be placed or discovered and used. The team is aware of some and the following is but an illustration of the sort of developments that are taking place:

− As early as 1995 the MoE, with the help of China’s key universities established the China Education and Research Computer Network (Cernet) which by the beginning of 2000 connected up some 550 universities, middle and primary schools, reaching 2 million users in 80 cities.

− Simultaneously, the nation’s plans include stretching fibre-optic wiring across huge expanses with information carried the “last mile” via wireless technology. Already satellite supported wireless technology provides significant coverage of rural areas. These will eventually be broadband technologies.

− As part of the Cernet the MoE has been working with primary and middle schools to support students and teachers to be competent in using the computer and the Internet. The MoE has also established teaching networks in the Central and Western Provinces to combat illiteracy and foster the training of teachers.

− In August 2000 “thirty-one Chinese universities were approved to run pilot projects for distance learning.” Six Twenty-six of the universities will be allowed to enrol students who

participated in the national higher-education entrance exams and adult higher-education entrance exam. They can also offer their own entrance exams. The other five will only be able to offer courses to students who take the adult higher-education exam.

A number of universities are aggressively moving into the delivery of courses on-line. The Hong Kong Open University makes 85 programmes leading to Bachelors and Graduate degrees and 155 courses available to a current enrolment of 25,000 throughout Hong Kong.\(^7\) A number of the universities in the 31 recently approved as pilot projects for distance learning have been developing their capacity and relationships for a few years.\(^8\) Chinaonline.com recently posted a web site summarising some of these activities.\(^9\)

Finally, the private sector is moving into the distance learning space. According to a report of 4 October 2000, online, long-distance education in China is set to receive a major boost. Citicorp Capital Asia (Taiwan) Ltd. and the Internet Data Group, along with other investors, recently invested a total of USD 5 million in the PRCEDU Co., a Web site providing long-distance education. PRCEDU will use this investment to continue developing its educational software. The company is located in Beijing, has 160 employees, and seeks to become the largest online educational platform service provider in China.\(^10\) The platforms will make it easy for universities and companies to develop and deliver distance education courses. This is a critical software infrastructure development.

This is an excellent start but there are many steps to go to reach the goal of a lifelong learning system based on IT. The remoteness of the Western Provinces, the need to assure quality along with access and equity, the lack of experience with aggressive private and international sectors, the challenge of putting broadband access throughout the nation, the need to design and evaluate courses and programmes that are appropriate for many ages and levels of experience – all of these are challenges for the next decade.

The prize, though, could be extraordinary. The team believes that China is poised to become a significant leader in the new economy. To succeed in that goal the full development of the nation’s human capital is critical. This cannot be accomplished in the near future, in the timeframe of the new economic revolution, unless dramatic steps are taken to modernise the delivery of education. China has the opportunity to carry out in just a few years what it has taken many Western countries decades to accomplish – to leapfrog generations in the development of access for all qualified to a quality experience in tertiary education.

\(^7\) http://www.oli.hk/about.html  
\(^8\) For example, “besides planning and implementing distance learning in Shanghai, the Shanghai Jiao Tong University centre is also in charge of developing distance learning technology – a key task of the 9th 5-year plan. Meanwhile the centre is holding several domestic collaboration exercises on distance learning technology such as the one with Shanghai Jiaotong University, Fudan University, Shanghai medical University, Shanghai University, Shanghai Broadcast & T.V. University. In addition to the domestic projects mentioned above, the centre has also gone international by receiving such aids as the Intel Research Fund, AT&T Research Fund and Yuanzhi Engineering University Research Fund from Taiwan. Presently, the centre has already set up extensive co-operative research relations with numerous universities in Taiwan, Japan, USA and German etc.” http://www.dlc.sjtu.edu.cn/English/lab_Eng.htm  
Both Quinghua and Peking Universities in Beijing have similar efforts underway.  
\(^9\) http://www.chinaonline.com/refer/edu_services/currentnews/secure/B200080305.asp  
\(^10\) http://www.chinaonline.com/issues/econ_news/currentnews/secure/c00092602.asp
A number of mechanisms are already, or could be, in place to support efforts in this area. The 211 project participants (100 well-established universities) might collaborate with new institutions in the West or other rural areas to provide on-site and distance learning. The 31-school distance learning demonstration project could be a garden for an aggressive research effort to study strategies for the effective and efficient delivery of distance learning, adding to the knowledge accumulating from similar advanced-level distance education programmes, such as Open Universities in the U.K., Germany, the Netherlands and Japan and Stanford University’s Masters’ Degree programme in Engineering (see BOX). Private dot-com companies that supply, twenty-four hours a day and seven days a week, tutoring, professional development for teachers and professors, data gathering and organisation strategies, and exemplary courses from around the world, will all spring up and want access to the education market.

<table>
<thead>
<tr>
<th>BOX. Delivering degrees at a distance. Stanford’s Master’s degree in engineering</th>
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<tr>
<td>Stanford University has been providing a master’s degree in engineering through distance learning for over a decade. The basic model is that a private sector firm contracts with the university to provide the course materials (videos or CDs of lectures, reading lists, assignments and so on) for a small group of students. The course materials are on the web and available to the students. The students at the firm are expected to do the same work as students on campus and take the same exams, which are typically graded at the university. The way that the students experience the course and the learning environment are different from the way they would have learned at the university.</td>
</tr>
<tr>
<td>“… The twist, though, is that once the engineers received the video they’d replay it in their own small study group, but in a special way. Every three minutes or so they’d stop the tape and talk about what they’d just seen, ask each other if there were any questions or ambiguities, and resolve them on the spot. Forward they would go, a few minutes at a time, with lots of talk and double-checking, until they were through the tape and everybody understood the whole lesson. What they were doing, in terms we used earlier, was socially constructing their own meaning of the material… The results were that students taking the course this way outperformed the ones actually taking the classes live. Today, the approach has been tried … with college students, even with California prison inmates; most of the students who’ve tried it got half a grade point better grades than the regular students. This account is not meant as a commentary on regular Stanford classes! Rather it is used to describe an elegantly simple idea, low-tech and low-cost, …”</td>
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</table>


Financing

Shortage of resources, both human and financial, is the common currency of all education systems. China is no different in that respect. The team was consistently told of the problems caused by the financial implications of the reforms. China devotes less than 3% of GDP to all levels of education combined. This compares with 4.8% in Brazil, a country at a more or less comparable stage of development. The average expenditure, from all sources, across the OECD countries is 6.1% of GDP, ranging from 7.4% in Korea to 4.2% in Luxembourg. In almost all OECD countries, between 1990 and 1996 expenditure of education grew faster than, or kept pace with, national wealth. It is the MoE’s intention to increase the level of spending to 4% of GDP. This will still leave spending in China behind that of many other countries. The importance attached to education by the Chinese authorities has resulted in the input into education being increased by 1% of the total Government budget each year. The team was
informed that the education sector is benefiting more in terms of financing than other public sectors. The Central authorities have asked the Provincial authorities to match their commitment.

Funding of public programmes is limited by the generalised problem of the low level of government revenues in China. Tax revenues amount to about 12% of GDP, around half that of other countries at a similar stage, e.g. India, Brazil. Broadening the tax base is a general objective but success could boost the resources available to education among other public programmes.

The pattern of education expenditure differs from that of OECD countries. (Table 1) The bulk of expenditure in China, 67.8%, is devoted to compulsory education (primary and lower secondary) which accounts for 77.1% of enrolments. Upper secondary accounts for 8.4% of overall public expenditure on education, and 10.3% of enrolments. Tertiary education receives 21.8% of public expenditure on education, while accounting for 2.4% of total enrolments. In the OECD by contrast the proportions of educational spending are, on average, 43.1% for primary and lower secondary; 22.4% for upper secondary; and 22.4% for all tertiary.

| Table 1. Percentage distribution of enrolment and expenditure by level of education (full- and part-time) |
|--------------------------------------------------|--------------------------------------------------|
| Enrolment | Expenditure | Enrolment | Expenditure |
| Pre-primary | 9.7% | 1.9% | 11.5 | 6.7 |
| Primary and lower secondary | 77.1 | 67.8 | 52.5 | 43.1 |
| Upper secondary | 10.3 | 8.4 | 20.4 | 22.4 |
| Post-secondary, non-tertiary | 1.5 | 1.7 |
| All tertiary | 2.4 | 21.8 | 14.0 | 22.4 |

Notes: OECD data are country averages. Expenditure data for OECD countries are for 1997.

Funding at the institutional level in China comes from a number of sources. While the most successful universities benefit from revenues from the commercialisation of their research efforts, others especially at the Provincial level depend heavily on Central and Provincial Government funding. For leading institutions, such as Quinghua and Peking Universities, approximately one-third of operating costs are financed through funds from the MoE. Tuition fees account for 7-8% of financing at these institutions, although the team was told that at Peking University, for example, student financial support exceeds the amount of fees received. The remainder of expenditures are financed from sales of technology (through university enterprises or science parks), research contracts and donations.

The situation at the Provincial level is particularly precarious, especially after the transfer of some national universities to provincial control and the recent increase in enrolments. The transfers, although welcomed as a means of decentralising the system and strengthening the linkages between these institutions and the local economy and its education system, has brought in its wake funding difficulties. In Shaanxi Province, 17 universities have been transferred to the Provincial Government, making a total of 32 provincial institutions and reducing the number of national universities to 7. Central Government funding to all institutions, however, has been maintained at the same amount as before the expansion in enrolments and this is expected to continue under current policy. The patterns of financing tertiary education in the Province have evolved, as shown in Table 2.
Table 2. **Patterns of financing tertiary education (Shaanxi province)**

<table>
<thead>
<tr>
<th></th>
<th>1996</th>
<th>1999</th>
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<tbody>
<tr>
<td><strong>Tuition fees</strong></td>
<td>5%</td>
<td>15%</td>
</tr>
<tr>
<td><strong>National contribution</strong></td>
<td>85</td>
<td>60-70</td>
</tr>
<tr>
<td><strong>Revenues from technology transfer, etc.</strong></td>
<td>3-4</td>
<td>8-10</td>
</tr>
<tr>
<td><strong>Donations</strong></td>
<td>7</td>
<td>7</td>
</tr>
</tbody>
</table>

The combination of flat rate contribution from Central Government, which will, over time, represent a declining share of funding, and the outstanding question of how the transfer of pension, health and other liabilities to the Provincial Government will be handled, will inevitably restrict Shaanxi Province’s ability to reach the 15% enrolment target by 2005, let alone their self-declared aim of 20% by 2010, notwithstanding the Provincial authorities intention to invest in tertiary education 20% of the increase in local government income. French experience here is instructive. The policy for deconcentration, with an aim to provide for a wider distribution of tertiary education institutions and enrolment outside of Paris, has been successful in achieving a rapid expansion of provision across the country and a certain sharing of costs between regional and national levels. The geographic balance of institutions and programmes proved less easy to realise, as did the control of recurrent costs.

As part of the national policy to serve the West, Shaanxi Province has been host to many national universities. As a result of the concentration of institutions, the Province is rated fourth of all the Chinese Provinces in the provision of tertiary education. Paradoxically, however, in terms of economic development, it ranks twentieth out of the 30 provinces. As a result of this status of provider of education, the Province attracts 40-50% of its students from other provinces, but does not benefit from any financial contribution from the “sending” provinces. No one spoken to questioned this role, but this inherited situation is one that will be difficult to sustain. While the team applauds the aim of extending provision in this way to students from less well-served areas, if quality is to be maintained, careful consideration will have to be given to both expanding provision in the other provinces, including in new and different ways (perhaps, along the lines described in the preceding section). Further, to ensure better cost sharing, by drawing on the resources and experience of the institutions in the Eastern urban areas (e.g. through co-operative ventures, assistance programmes and mentoring) as well as by establishing a system of funding that allows financing to follow the student (a policy practised in many OECD countries).

Sweden, Norway and New Zealand provide three different approaches to such arrangements. In Sweden, university colleges are located within a unified system and, although distinct institutions, draw and benefit from expertise provided by universities. Some college staff hold posts as professors at an associated university. Network Norway has a similar aim: to bring resources and expertise available throughout the country so that individual colleges and universities will collaborate and complement each other. Single institutions are expected to function as “nodes” within the network, with quality assured and programmes strengthened through collaboration with the single institution benefiting from the experience and specialities of other institutions. Research institutions and foundations can participate, and communication links are extended also to private colleges, business and industry and central and regional authorities. In Sweden and Norway, the strategy seeks to support and extend the work of the colleges while allowing and encouraging them to respond to local needs. Following a very different approach, universities in New Zealand have established linkages with polytechnics in other localities. Massey University, a leader in distance education, also moved to establish a branch campus outside its traditional “catchment” area.

Cost-effectiveness remains a major preoccupation. Some 40% of the institutions have less than 3 000 students and the case for reorganisation and restructuring seems strong. Outsourcing the provision of student and faculty accommodation and dining facilities is already taking place to reduce the direct burden
on the institutions’ financial and administrative resources. The Ministry of Finance in Beijing stated its intention to set up a system to evaluate the cost-effectiveness of funding.

Tuition fees are an accepted part of education in China. Fees are normally charged in all post-compulsory institutions. In some cases, private and key schools command substantial fees: USD 4 000 per annum was not considered unusual at leading primary schools. Fees vary according to the institution, the course and the economic status of the student.

OECD countries have a range of approaches to financing via tuition fees. While some have a policy of charging fees for tuition, others maintain their attachment to a publicly funded system. But, even in such “no-fees” countries, the principle of public funding has limits. Denmark expects institutions offering Open Education courses, on a part-time basis and to adults in the evenings, to charge up to 20% of the costs. In Finland and Sweden, students and their families shoulder part of the costs of maintenance. But what is common is the recognition that because of the pressure on public expenditure of all sorts, greater innovation and creativity has to be deployed in funding education and other public programmes. To make expansion possible and effective the resources of the whole community need to be mobilised. Since the benefits of higher levels of education accrue to both society and individuals, both public and private investment is generally recognised to be justified. Equally, it is recognised that tuition fees should not in themselves create barriers to participation and that there should be arrangements in place to ensure that able students from low-income backgrounds are not excluded from pursuing higher levels of learning.

Various possibilities already exist for students to gain support for their studies – including grants; loans of up to 8 000 RMB (approx. USD 966) per annum, with, for the poorest, half the interest rate subsidised by the MoE; fees forgone; scholarships (including from companies); and self-help in the shape of part-time work by the student themselves.

Private Universities

Out of a total of 100 private universities that have been established only 37 have been recognised to offer degree courses. Since there is, as yet, no law on the establishment of private universities (now being discussed), the existing institutions operate under the 1998 Law on Higher Education, which stipulates that all institutions should operate on a not-for-profit basis. This lack of clarity raises some uncertainties about the status of these institutions in terms of ownership of the assets.

Some public funding is provided amounting to about 8% of total costs. The remainder of expenditure is covered by fees which vary according to the category of student:

- Ordinary students 7 000 to 8 000 RMB (approx. USD 845-966) per annum
- Adult students 2 000 RMB (approx. USD 241) per annum
- Self-taught adult students 4 000 RMB (approx. USD 483) per annum (preparing for graduation examinations)

The content of courses is decidedly market-oriented and students are enrolled with no guarantees given on getting a job after graduation. The private university visited by the team had a very good record: with 98.3% of graduates finding employment, its placement rate approaches the essentially universal employment experience of graduates from the most prestigious universities such as Qinghua. As participation increases and restructuring of the economy gathers pace, market responsiveness will be key to the success of the private institutions.
Private universities that respond rapidly and nimbly to the changing demands of the labour market of the new economy could provide some of the diversity and flexibility that the Chinese education system will require. The early enactment of a law on private universities would provide a more solid legal basis and more certainty for the operation of these institutions in future.

Labour Market Linkages

As the Chinese economy has diversified, so, too, has the structure of the labour market. During the past ten years, non-State enterprises have been the main source of new jobs. With employment in the State Owned Enterprises (SOEs) and the urban collectives on the decline, the private enterprise sector now accounts for almost all the net growth in employment in the urban economy. In rural areas, where 80% of the population lives, the Township and Village Enterprises (TVEs), together with the private enterprises, are the main sources of employment growth.\(^{11}\) (See also Table 3)

<table>
<thead>
<tr>
<th>Table 3. Number of enterprises and employment by type, 1990 and 1998</th>
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<tbody>
<tr>
<td><strong>1990</strong></td>
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<td>----------</td>
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<tr>
<td></td>
</tr>
<tr>
<td>State-owned</td>
</tr>
<tr>
<td>Private</td>
</tr>
<tr>
<td>TVE</td>
</tr>
<tr>
<td>Foreign</td>
</tr>
<tr>
<td>Collective</td>
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</table>

Notes: “Private” include individual-owned, shareholding, limited liability corporations and others; “foreign” also include investment from Hong Kong, Macao and Taiwan. TVE are not based on ownership, but geographical locations of sponsors. They are founded by towns, villages or individuals in rural areas, and are mostly collective or private.

Sources: World Bank (2000), China’s development strategy: The knowledge and innovation perspective, Washington, D.C.

The share of the labour force in agriculture, which stood at 70% in 1978, is now down to 45%. It is the tertiary sector that has witnessed strongest growth in employment share over this same period, up from 12% to 29% of the labour force. That share is expected to grow to 36 per cent by 2010. The industrial sector, too, has seen its share of employment increase to 26 percent, from 17 per cent in 1978. (Table 4)

<table>
<thead>
<tr>
<th>Table 4. Employment share by sector, 1978 and 2000</th>
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<tr>
<td><strong>1978</strong></td>
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<tr>
<td>Agriculture</td>
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<tr>
<td>Industry</td>
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<tr>
<td>Tertiary</td>
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The team learned in Xi’an that the downsizing of the SOEs has had a significant impact on the local labour market. It was only in 2000, after three lean years, that the demand for graduates showned any upturn. Of the 70 000 graduates – 30 000 from the universities and 40 000 from the vocational schools – some 80% are reported to find their jobs through what is described as “mutual choice” employment. The

remaining 20% were assigned jobs by the Government. However, students tend to avoid seeking
employment in those areas where economic development is low. They prefer the attraction of the
burgeoning labour markets of the Eastern urban centres. In order to encourage graduates to go to the less
developed areas, incentives are on offer. For example, for Government jobs in these regions the
probationary period is waived, salaries can be increased by one or two steps, subsidies are available, and
after an initial contract of 5-8 years the individual has the right to move elsewhere. Some 28% of graduates
in 1999-2000 found employment in the private sector, and efforts are being made to establish favourable
working conditions that would encourage graduates to seek employment on the private and TVE sectors in
the rural areas.

The placement of tertiary education institutions may provide another incentive to retain or attract
graduates to less developed regions. Norway has advanced such a view, seeing programmes offered in its
tertiary education institutions in the less densely populated northern area as part of a strategy to keep
students – and graduates – in those regions. Programme offerings have been expanded through
arrangements with co-operating universities and colleges in other regions, an approach to which attention
has already been drawn.

Job assignment is no longer practised but for those graduates who wish to protect their “cadre
status”, i.e. the right to public employment, all employment contracts are subject to specific durations.
Contracts in the townships of 6 years (in low development areas) of 5-8 years and fixed term contracts in
the private sector negotiated by the employers and the individual, will guarantee continued cadre status.
These arrangements, which undoubtedly provide an element of security for some in a period of transition,
carry with them a clear risk of hindering labour market flexibility and deterring employees and employers
from coming to the sort of arrangements that would suit each of them. The team was pleased to learn later
in Beijing that the concept of “cadre status” is to be abandoned and that everyone will be considered as an
employee. The “right” that cadre status has implied will disappear. This will be important in allowing
everyone to make the most appropriate employment choices in response to the information available on
labour market opportunities.

It has been noted in other countries faced with rapid economic transformation that improving
efficiency and longer-term competitiveness depends on a virtuous circle of mutually reinforcing progress on a
wide range of reforms and on the growth of the economy as a whole. An effective labour market will
contribute to the overall economy as well as benefiting from economic growth. If labour markets are to
function effectively, information about vacancies, skill demands, training opportunities, salaries etc. must
be readily available, to all – students, employed and unemployed – and in as user-friendly and transparent
way as possible. As the private share of jobs expands, so, too, will it be necessary to ensure the availability
of information and guidance to potential job seekers.

Labour market developments have already had an impact upon the educational institutions, their
courses and the way in which they operate. With the abandonment of the job assignment system in 1996,
students now secure their employment through the labour market. As a result, the whole of the tertiary
education sector is being restructured to respond to the needs of what is a rapidly evolving market. This
entails recasting the curriculum to ensure a broader knowledge base and eliminate the over-specialisation
that existed previously. Students in the words of one leading educationalist “are to become flexible and
adaptable to rapidly changing needs”. “Creativity” is now the watchword. These changes are also affecting
the design of school curriculum and examinations. It is widely accepted that the new economy will demand
new skills, rounder individuals with interpersonal skills.

The team has heard of major reorganisation of courses with many areas of study, where
employment prospects are declining or even disappearing, being dropped with the aim of establishing more
broadly-based majors focusing on the “new” areas such as technology and telecommunications (computer
science, bio-technology etc.). The prospect of WTO membership loomed large in the thoughts of many of those with whom discussions were had, as did the need to concentrate on improvements in those areas where the Chinese economy does not come up to international standards.

Conclusion: Steering and the expansion of tertiary education

So far in this report have been reviewed the sorts of issues that appeared to be the main elements of a possible vision for the development of a greatly expanded tertiary education system in China. This concluding section turns to the question of steering that system. One of the first questions facing all partners is where should leadership rest? Responding to that requires answers to related questions. What should be the scope of leadership? What instruments should be used to transmit or mediate that leadership? Which responsibilities should be bundled together to maximise effective leadership? Which responsibilities should be separated to enhance efficiency and reduce friction, ambiguity and duplication?

The OECD countries have answered these questions differently. The federal nations have answered them differently from the nation states, which, in turn, have answered them in differing ways. Those few nations with robust private university sectors have different approaches to questions of regulation and student financing than those who regard university education as essentially a public good. The younger nations have addressed quality assurance issues differently from the nations laying claim to the oldest universities.

Context notwithstanding, a set of key assumptions shapes approaches to governance:

- Tertiary education is a “semi-public” good. By this it has been argued tertiary education contributes to the nation as a whole, to the economy, to the community and to the body of knowledge shared by all. Of course, it also contributes to the capacities and wealth of individuals – giving them a private benefit. This mixture of public and private benefit characterises the current and likely future tertiary system in China, as it does in OECD countries.

- National ministries should be small in size and strategic in focus. The recent reductions in the size of the Ministry of Education and other national agencies in China align with this view. By way of corollary, with a slimmer national government, greater authority is vested in the provinces, municipalities and institutions. The same aims and tendencies are to be found in the OECD area.

- Greater emphasis on individual choice: of institutions, of course of study, of pathways and of occupation. In China, the move away from the assignment system whereby graduates are allocated to a particular employer to one of “mutual choice” with assignment occurring only when no agreement can be reached is an example of increased choice.

This constellation of assumptions and the appreciation of different governance models around the world led the team to frame these questions in terms of steering. In English this is distinct from notions of “controlling”, “governing” and “managing”; all of these words imply a degree of singular authority and system responsiveness. Steering can be imagined as the act of driving a car: sitting behind the engine, the source of power, with a destination in mind and a limited number of gauges and external signposts to guide and inform decisions. You have the capacity to speed up, slow down, turn and reverse.

With this metaphor and the three assumptions in mind the team offers the following comments as the basis for a broader discussion about the appropriate mix of steering mechanisms for China’s tertiary
education system in the next twenty years, as it moves towards large-volume participation with greater equality of access and higher quality.

**Strategic instruments for steering**

The experience of OECD countries and transition economies shows that essential functions for governing a growing, large-volume tertiary education system providing a range of learning options to a diverse student population may be identified as follows:

- Formulating and setting goals for the tertiary education system within the national education system as a whole, which reflect the desired economic and social development of the country;
- Elaborating and enforcing a legal framework for the effective operation of public and private institutions of tertiary education;
- Designing, financing and implementing national programmes to foster the achievement of national goals;
- Promoting equality of access to tertiary education – urban and rural, young and older adult;
- Providing accurate and timely information about the supply, demand and value of particular skills and qualifications;
- Fostering, financing and evaluating the research and innovation dimensions of the tertiary education sector;
- Assuring high quality teaching, learning and research in the interests of the nation and individuals; and
- Reporting on a regular basis about the efficiency, effectiveness and quality of the tertiary education system.

These eight functions are to a large degree interdependent: more weight on one function might reduce the need for another or reduce the intensity with which it is carried out.

Drawing upon the issues explored earlier, the team comments in greater detail on each of the eight functions and raises questions about the appropriate locus of responsibility.

**Formulating goals**

In setting goals for tertiary education, OECD countries have increasingly recognised that this level of education is one, albeit important, part of a national education system. Ensuring appropriate linkages and relationships between levels of education is seen as essential, if the system as a whole is to be effective. All levels of the tertiary system should be involved in goal setting and formulation. In China, at the national level, goal setting can be done through the five-year plan. The Ministry of Education’s current thinking – to see the five-year plan as a set of strategies and guidelines rather than a platform of finely specified targets and mandated actions – seems to be just right. This approach allows Provinces and institutions to build on their particular strengths and to take into account local circumstances even as important national objectives are being pursued. This more strategic approach to goal setting should also
be adopted by Provincial education authorities in working with tertiary institutions, and particularly the universities. This approach would enhance institutional autonomy (a matter which is returned to below).

National goal formulation depends on good, relevant and reliable data. The example of a target for expansion is instructive. Differences were noted in how various levels and different types of tertiary education institution were responding (or planning to respond) to growth. Some premier universities seemed reluctant to increase capacity, because of physical constraints and because of a concern that quality would be undermined at a time when there was also a national goal of creating world-class universities. Other types of tertiary education institution were keen to expand so they could respond to changes in demand from individuals and employers. In many cases, the expansion of provision in these types of institution appeared to be constrained by the lengthy approval process for national funds for the necessary capital works. In this respect, holding the funds for expansion in Beijing seems to be an unnecessary degree of central control.

Taken together, these two observations help to illustrate the importance of expressing goals in a way that takes into account linkages and trade-offs. While concrete and simple targets such as the proportion of an age cohort enrolled in tertiary education have powerful symbolic and signalling effects, they can also impede the pursuit of other goals such as quality and market responsiveness and neglect the kinds of complementarities and linkages needed to realise the goals.

As China’s socialist market economy continues to evolve and develop there will be marked and quite rapid changes in the levels and types of skills and qualifications required. While these cannot be ‘planned’ they can be anticipated in a very broad sense (drawing from experiences in other transition economies and by modelling likely changes in the occupational structure). Indeed the team was struck by the consistency in changes of demand that were identified at the national, Provincial and institutional levels. Students already are choosing to move towards fields like computing sciences, informatics, telecommunications and applied sciences and to move away from – if not seeking to complement and balance – theoretical studies and narrow specialisations.

A legal framework

Most OECD countries have explicit laws that set out the roles and responsibilities of institutions offering tertiary education. These laws usually define the accountability and reporting requirements of tertiary education institutions (particularly those receiving public funds or awarding nationally-recognised qualifications). In some countries, the relevant legislation also specifies the criteria for the establishment and regulation of private institutions. It is through such legislation and the related regulatory framework that most OECD countries are trying to address emerging issues of programmes and studies offered by cross-border, ICT-based or private providers.

The experience of other countries is that supporting legislation and regulatory frameworks are highly desirable. Particularly with regard to private tertiary education providers, the legislation and regulations resolve questions about the ownership of institutional property and assets. In so doing, they provide for the certainty in operations and clarity in legal status needed to attract private source funding.

Programmes addressing national goals

In the OECD area, setting goals, writing laws and advocating change has not been sufficient to encourage and enable change in programmes, teaching and learning. Most countries now design, finance and evaluate programmes and projects that aim to influence providers to undertake change. The team heard
about and saw examples of such efforts during in China. To take one example, the 211 project already appeared to be having a significant impact on the universities involved.

The development and design of such initiatives have proved to be more effective when they are informed both by the empirical assessment of earlier interventions and by the active participation of experts and officials from institutions that are expected to implement the desired changes. Relevance, feasibility and practicability are enhanced when this involvement is built in to the early stages of design. This formal involvement acknowledges the autonomy of tertiary education institutions; it also supports the development in each institution of the capacity to effectively exercise that autonomy.

Equality of access

China has a long-standing commitment to equality of access to tertiary education. An elaborate infrastructure for self-study students and the education of peasants, workers and minorities has been in place for some time. However, as is true in OECD countries, minorities and women tend to be under-represented in the highest demand programmes, and participation by otherwise capable young people from poor families or geographically remote areas are deterred by the direct and indirect costs.

Student loans, both mortgage-type and income-contingent, and grants for tertiary study are common equity strategies in many OECD countries. The different experiences and models warrant study by the Ministry of Education, in order to better evaluate the successes and failures of the pilot loan schemes currently underway at the institutional, municipal and Provincial levels.

There is a strong case for the use of public funds to finance tertiary education. But this should not obviate individuals from bearing some of the costs of participation in tertiary education. As well as contributing to the public good, individuals receive a private benefit through higher incomes as a result of participation and completion of studies at this level. In a number of OECD countries, this is now seen as justification for some individual contribution toward tuition or maintenance. The burden of such contributions is eased not only through access to loan financing (with extended repayment arrangements) but also by contributed service, such as service in remote areas for a limited period of time. Both options exist in China.

The use of public funds for these purposes should not crowd out private sector funding. Indeed, in most OECD countries where private source funding accounts for a growing share of expenditure on tertiary education, public expenditure also has increased. Further, in transition economies, a student loan scheme offers an important opportunity to diversify the financial sector and to create credit opportunities.

While costs play a role in the decisions of young people and adults to participate in tertiary education, relatively lower rates of participation from lower income groups, ethnic and linguistic minorities and (in some countries) women reflect partly the failure of schooling to retain and adequately prepare students from these groups. This remains a policy priority in OECD countries as much as in China, where the quality, relevance and accessibility of primary and secondary education require attention and investment. As far as the team could tell, the issue is most pressing in the poorer Western Provinces where significant numbers of children fail to enrol in or complete primary education.

Supply and demand information

Reliable and timely information about the demand for and value of particular skills and qualifications plays a key role in a more market-oriented, demand-driven tertiary education system. Information of this type helps students make choices about programs of study and possible futures. It also helps institutions anticipate changes in demand.

In support of “mutual choice” employment in China, Provincial and local authorities are producing handbooks on the number of graduates by field of study and the number of employers interested in recruiting from these fields. While useful, this information appears to be incomplete because it does not provide reliable information on the “value” of particular qualifications (especially in the private sector). Information on such matters is transmitted more often by word of mouth or the popular media. Some Provincial and municipal authorities seek to build information bridges between tertiary education institutions and employers, but it was the impression of the team that these constructive endeavours were partial in scope and coverage. They often failed to pick up information on changing demands for skills and qualifications, generally and within particular occupations; the emerging market-oriented economy and the rapidly developing private sector are poorly covered. Specialist institutions and private providers seemed to be more aware of changes in supply and demand of those with specific tertiary-level qualifications; many had responded by changing course combinations, offering new courses and making significant investments in information technology (both to support teaching computer sciences and other digitally-based programmes and to improve the quality of teaching and learning).

Research and innovation

In China, the position of research and innovation in tertiary education seems to be uncertain. Research historically was publicly financed through a system of national institutes. Although this is now changing, research, teaching and learning and industrial application remain separated. In a market-oriented economy, the separation of these functions makes knowledge diffusion, increased productivity and innovation more difficult. The challenge of how to foster greater complementarity across these functions is familiar to OECD countries, and no less difficult there than in China.

The team noted, in particular, that university-based research findings are being transformed into productive enterprises, either owned and operated by the university itself or through a private sector incubator or holding company. The revenues generated through such activities make an important contribution to the overall level of resources available to universities. But, this too is a matter of some concern, if the volume of such arrangements unduly divert leadership in the universities from other key areas of teaching, fundamental research and wider networking in support of improved schooling and other types of tertiary education. Experience in OECD countries suggests that the transfer of research findings and enterprise links do not have to compete with key missions of the university. However, efforts need to be made to maintain balance and to foster the complementarities afforded by such arrangements.

Teaching and learning

In all countries – China no less than those in the OECD area – there is a pressing need to lift the quality of teaching and learning. Although there was limited opportunity to observe teaching in the course of the visit, the team was impressed by the opportunities for practical learning – building on a solid grounding in theoretical work – provided in a private university. Policies to improve teaching and learning centre on recruitment of new faculty, opportunities for faculty to gain higher degrees (domestically and internationally) and ‘twinning’ with leading universities. These are reasonable approaches, with
counterparts in OECD countries, where there also are efforts to evaluate, support and improve teaching particularly in the first years of tertiary education.

**Reporting**

Reporting should occur routinely, systematically, in a timely manner and in an accessible form; reporting should come from all levels of the tertiary education system and all institutions. Reports should focus on the use of funds and on the quality and results of learning, teaching and knowledge creation.

Such reports emerge as essential elements in systems that allow more institutional autonomy and flexibility. It was put this way by the UNESCO and World Bank Task Force on Higher Education: “Accountability does not imply uncontrolled interference, but it does impose a requirement to periodically explain actions and have successes and failures examined in a transparent fashion”. 13 Accountability is the natural counterpart of autonomy.

**Sharing responsibility for these functions**

It remains to identify the levels at which responsibility for each of these functions is lodged. China’s tertiary education system is very heterogeneous with many different forms of institutions serving different populations and offering different qualifications. It is similar, in this respect, to most OECD countries, a number of which have taken steps to increase further diversity in provision and to extend participation in all forms of tertiary education to adults. In the face of this diversity, it is possible only to offer general principles that should figure in the consideration of responsibilities of different levels of governance, institutions and partners in steering tertiary education.

− *Setting explicit goals and reporting on progress towards those goals*. All levels and sectors of the system share these responsibilities. The goals should align with a clear national vision for all education and learning. The Central Government has the responsibility to lead goal setting and reporting processes, but those processes will be most effective when carried out in close co-operation with ministries with economic and social functions and in consultation with private enterprise, civil society, Provincial Governments and educational institutions at secondary as well as tertiary levels.

− *Promoting equality of access*. This responsibility is shared across governance levels and with institutions. The Ministry of Education has a particular responsibility to ensure that schools prepare all young people – regardless of family income, geographic region or locality, ethnicity or gender – for participation in tertiary education and to encourage and enable participation of adults in a wider range of tertiary-level learning opportunities.

− *Establishing a legal framework and designing and financing of programmes to support national goals*. A national agency responsible for the strategic direction of tertiary education should assume responsibility for these matters. OECD countries vest the responsibility for these tasks in the Ministry of Education or a designated tertiary education commission. In either case, the agency should either be responsible directly for all or none of the tertiary education institutions. The team notes that many countries have taken steps to separate responsibility for the legal framework from the direct responsibility for provision. Such a

separation allows for a more flexible and pro-active response to cross-border or private provision as well as for a balanced handling of competing demands from the full range of public tertiary education institutions (some of which have had a preferential relationship with a regulatory or financing agency).

- **Improving teaching and learning.** This is primarily the responsibility of each tertiary education institution. Given the growing importance the globalisation of knowledge and the long-standing value of cross-border co-operation in scholarship and research, a system-wide investment in tertiary education faculty exchange, co-operative research and upgrading of academic qualifications should be made by Central Government. The Central Government responsibility extends to support for quality improvement initiatives and co-operative arrangements to establish standards.

- **Gathering and disseminating reliable market information.** At present, responsibility in this area is highly diffused and should, in the view of the team, remain so. In OECD countries, the Ministry of Labour, statistics or census bureaus, trade unions, employers and professional associations often collect and provide such information. In some countries, the data are collected and made available on a commercial basis by newspapers and publishers. The Ministry of Education should take on as its responsibility the encouragement of these and other groups to develop and disseminate such information widely – to potential students, employers and tertiary education institutions. The team’s view is that a diversity of sources of such information is to be welcomed. The benefits to more informed and improved choices and planning outweigh redundancy, duplication and uneven coverage by some information providers.

The approach to reform in China is one of gradualism – “following the stepping stones across the river”. Nonetheless, the pace and depth of tertiary education reform have increased markedly in the past two years. Successful tertiary education reform will not be achieved in isolation, as both quality and success in primary and secondary education and increased adult participation in further education and training (including at the tertiary level) represent important complementary elements to reform from a lifelong learning perspective. Nor will the hoped-for contributions of tertiary education to economic development and overall well-being be realised by the universities alone; all forms of tertiary-level studies – degree- and certificate-awarding, academic and vocationally-oriented, full- and part-time, resident and at a distance, ICT-based – need to be reinforced and extended, and supported through linkages with the leading universities. Changes in these areas may require thinking about the “unthinkable”, where further reflection on new ways to improve access to learning across the country and across the life cycle will lead to consideration of other departures from existing arrangements and provision. Indeed, the reforms in train already reveal some attention to these aspects, too.

There will be much to learn – in China, but also in OECD countries – from the efforts underway. If the results of these efforts are monitored with the vision and goals in view and policies are adapted in the light of what is learned, tertiary education will figure prominently as the entire education system is harnessed in support of achieving the goal of middle-income status by 2020.