

Educational Reform and Curriculum Change in China:

A Comparative Case Study

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Prepared for

International Bureau for Education

Completed in December 2006, and revised in April 2007

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Introduction

In the broad context of socio-economic changes and as an integral part of systemic educational reform, school curriculum reform in China has been under way after 1996. The breadth and in-depth of the one-decade curriculum change has been unprecedented since the founding of the People's Republic of China in 1949 though there had been seven major "reforms" in school curriculum in previous years. Never before has a central government-guided curriculum reform in China been so open to research findings and practical experiences from international community on the one hand, and had so active participation by local community including teachers, students, parents and science/business sectors on the other. The reform began with a national survey study, organized by the Education Ministry Development of Basic Education during July 1996 and the end of 1997, on the implementation of the 1992 Compulsory Education Curriculum Scheme, involving more than 16,000 students, over 2,000 teachers and principals in 9 provinces, as well as leading officers in the Education, Science-Health Committee of the National Political Consultation Council. The curriculum reform was also based on comparative studies by academic community on curriculum development. Experiences and strategies of other countries including UK, USA, Canada, Germany, Japan, Australia, south Korea, Thailand, Russia, Sweden, Finland, New Zealand, India, Brazil and Egypt, in an attempt to comprehend benefit from worldwide reform efforts in improving basic education curriculum.

Therefore a comparative study of schools curriculum reform in China is most meaningful, on the one hand, to facilitate better understanding of the largest education system in the world and its system wide reform in context of drastic and profound socio-economic, political and cultural changes, and on the other, to develop broadened vision and research-based conceptual frameworks of school curriculum change as an effective strategy in achieving the goal of worldwide campaign for Education for All (EFA) in "over-all improvement of quality in education at all levels".

For a comprehensive analysis of the Chinese experiences in curriculum change as part of educational reforms for Quality EFA, an "International Comparative Study on Educational Reform and Curriculum Change: The Chinese Case" was commissioned by the Capacity Building section of UNESCO International Bureau of Education to the Chinese Focal Point of the Community of Practice in Curriculum Development.

The main objective of the study is the following:

- To develop an in-depth policy analysis of most recent (ten years') educational system-wise reforms, which have had implications for major

changes of educational content and method in the country in early twenty-first century; and

- To identify the curriculum dimensions of processes and results in attaining a high quality and equitable basic education in regards to EFA goals, for development of an inter-country or inter-regional comparative perspectives in cooperation with a counter-part in Latin America.

Specific Objectives include:

- To examine the societal and educational rationales, objectives, scope, and content of education systemic reforms in the last ten years or so, which have had impacts on the quality of basic education in light of EFA goals;
- To analyze the implications of debate, in the process of educational reforms, on the concept of “equity” and “quality” for change of educational content and method in relation to EFA goals;
- to analyze the visions of the curriculum that inform Basic Education and the changes in curriculum policy, structure, content and management in the last ten years or so in view of EFA goals;
- to present an evaluation of the curriculum changes as integral part of the system-wise educational reform; and
- to identify an agenda of concerns and themes that relate to capacity building especially of teachers for professional development in view of the curriculum changes in achieving EFA goal of “over-all improvement of quality in education”.

The comparative study expected to achieve multiple outcomes:

- A research-based study report, which could be published by IBE, on “Educational Reform and Curriculum Change in China: A Comparative Case Study
- Comparative and international perspectives developed of the broad socio-cultural context and the complexity of the process of curriculum change as integral part of systemic educational reform propelling EFA in developing countries
- evidences of impacts presented of UNESCO-advocated principles of systemic reforms and learner-centered curriculum changes on the improvement of quality in education as an EFA goal
- a conceptual and methodological framework developed for more inter-national or inter-regional comparative studies to be done in strengthening the Community of Practice (COP) in curriculum development of research.

A series of activities were undertaken in implementing the comparative study:

- composition of a study team, composed of very small number of members selected by the contractor and which is meant to support the

- contractor in implementing the study
- development of an outline of structure/content of the study outline, which was shared with a counterpart in Latin American country doing a similar study
 - data collection at national and local level and literature review on aspects of systemic educational reform since early 1990's but focusing on the ten years after 1996;
 - field trips and work at selected "curriculum reform experimental zones" (provinces, cities and counties) for in-depth study of the processes and outcomes of the nation-wide systemic educational reform and curriculum change taking place after 1996;
 - processing and analysis of data collected and elaboration of report, namely research study to be done by the contractor, who will be supported by a small team of members selected from policy-makers at Ministry of Education, universities, curriculum development centers and education research institutions. [The Latin American counterpart will do his/hoe own research study by a separate contract with IBE, preferably within a similar or agreed framework to allow meaningful comparisons during or after the study done on both sides.]
 - a seminar to present research findings of the study or two studies in 2007, and, coordinated by IBE, to facilitate an international dialogue and experiences sharing by the Community of Practice of curriculum developers.
 - publication of the study report by IBE, along with the report from Latin America.

Study team members are drawn from the Ministry of Education, universities, curriculum development centers, and research institutions. The study team was led by Zhou Nan-zhao, Professor at China National Institute of Educational Research, Director of International Center of Teacher Education and Professor at Department of Curriculum and Instruction, East China Normal University, and Zhu Muju, Deputy Director-General, Department of Basic Education, Ministry of Education. Study team members include You Baohua, Director, Department of Textbook Development, National Center for Curriculum and Textbook Development, Ministry of Education; Gao Xia, Director, Center of Curriculum and Textbook Development at China National Institute of Educational Research, Wang Wenjin, Deputy Director, Center for Cognitive Sciences and Learning, Beijing Normal University, and Zhao Li, Assistant Professor at International Center of Teacher Education, East China Normal University.

Regarding school curriculum changes at primary and secondary level, the study on educational reform focuses on those taking place in 9-year compulsory education and upper secondary education, including expansion of vocational-technical education, with very brief reference to reforms at other levels and areas.

1 An Overview of the Education System in China

1.1 The Education System and Basic Education

“Basic education” in China is composed of 3-year pre-school education, 6-year primary education, 3-year lower secondary (junior high school) and 3-year upper secondary (senior high school) education. There was an alternative for 5-year primary education during much of the 1980’s and 1990’s, especially in rural areas. At upper secondary education there is an increasingly large sector of vocational-technical education, which accounts for about 50% of the total enrolments at upper secondary level. At higher education level there are 2-3 year colleges, mostly vocational-technical in nature, 4-year colleges offering bachelors degrees, radio-TV colleges, and some other forms of higher education institutions. Master’s degree programmes take 2-3 years and doctoral degree programme take another 3 years. Figure 1 indicates the organizational structure of the Chinese education system.

The state education policy aims to enable the learners to develop in all-round way, in moral, intellectual, physical, aesthetical dimensions, and in term of work-life skills, to become qualified socialist workers who have lofty ideals, well educated (“cultured”), have moral character, and are disciplined.

Under the State Council as the central authority, the Ministry of Education is responsible for over-all planning and major policy making of education, with administration of basic education largely decentralized to provincial/municipal and county governments. Higher education is administered and supervised at national and provincial/municipal levels. Figure 1 indicates the education system in China.

Compulsory education in China lasts for nine years. Children enter primary school at the age of six. Before primary school the children may have attended preschool for a few years. Compulsory education is divided into six years of primary school and three years of lower middle school.

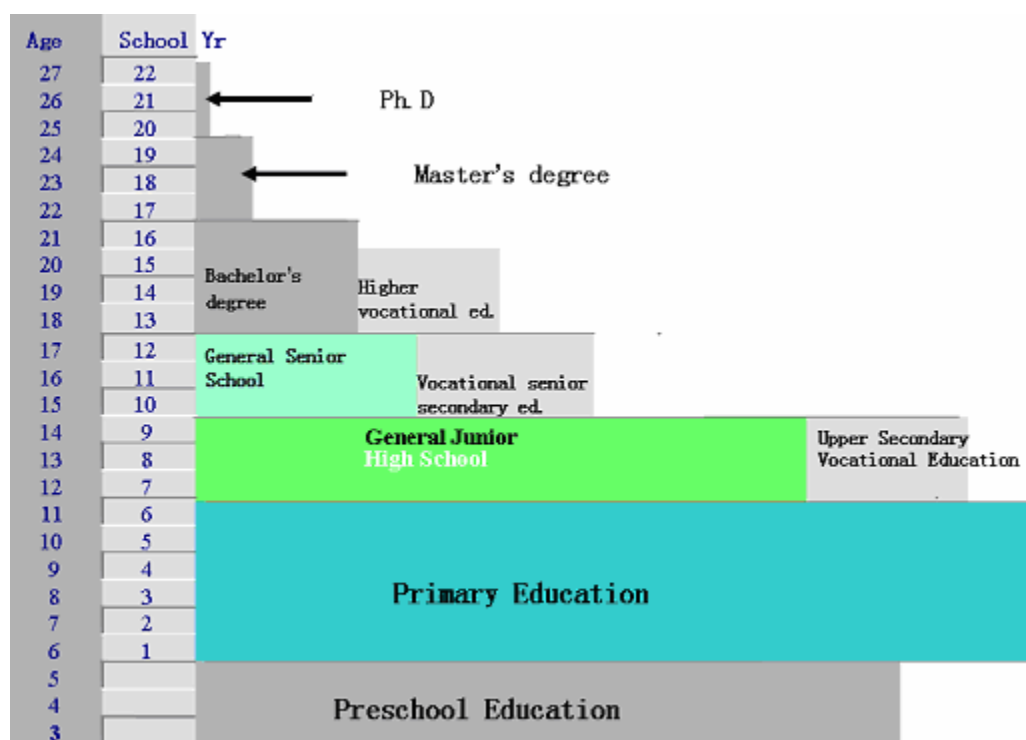
Upon completion of the nine-year compulsory education, students undertake entrance examinations towards senior secondary education which is provided by three different types of schools. The general senior school prepares students for the national university entrance examination and subsequently for admission to higher education. Specialized (sometimes translated as “technical”) and vocational (sometimes translated as “professional”) schools provide subject/occupation specific education and training. Graduates from these two types of schools enter the labor market. Although it is possible for graduates from a specialized secondary school to take the national university entrance examination and enter a vocational university, this is extremely rare in practice.

Higher education is provided by institutions of various types including

universities (general and technical), specialized institutions (medicine, agriculture, foreign languages etc.), vocational universities (e.g. teacher training) and specialized colleges. Entry to higher education in China is highly competitive.

The Bachelor's degree is granted by universities and specialized institutions. However, the right to grant the Bachelor's degree has also been given to some vocational universities. Vocational universities and specialized colleges provide non-university postsecondary studies and their graduates are awarded diplomas. Master and Doctor's degrees are granted by universities and some specialized institutions.

Figure 1: The Education System in China



Source: Yang Jin, "Basic Education in China", a presentation at International Seminar on education, May 2005, Ministry of Education.

Table 1 is a statistical overview of the education system in term of number of schools, students and teachers for the purpose of understanding the scale and progress of basic education in the country since the implementation of Nine-year compulsory education in 1986.

Table 1: A Statistical View of Education System in China (2005)

Number	Schools	Teaching Staff	Students	Gross Enrollment Rate
Higher education	2,273	1,050,164	20,949,645	21%
Upper Secondary	31,561	2,060,383	39,900,939	52.7%
Lower Secondary	62,486	3,471,839	62,149,442	95%
Primary Education	366,213	5,592,453	108,640,655	106.4%
Pre-schooling ed.	124,404	721,609	21,790,290	41.4%

Source: based on Yang Jin, “Basic Education in China”, a keynote presentation at UNESCO-INRULED-sponsored International Seminar on Rural Education, Beijing and Baoding, May 2005.

1.2 Development of a Legislative Framework

Educational democratization and improved governance by law complement each other, and they have moved forward hands in hands.

A major lesson learned from the chaos in education as well as economy in China during the Cultural Revolution years (1966-1976) was that over-centralization will impede participatory democracy and suppress dynamic innovations in local communities, and that governance by “good will” of individual politicians and government officials might lead to wrong decision-making leading to national disasters. In education along with structural reforms to expand access and equality for democratic participation, a national system of educational legislatives have been preliminarily developed since mid-1980’s with educational laws developed, which include *School Act*, *Educational Examinations Act*, *Educational Investment Act* and *Lifelong Learning Act*.

The Government have been using educational legislatives (along with grants allocation, planning, evaluation, policy guidance, information services, monitoring in execution of related legislatures, and necessary administrative measures) as instruments in macro-management of education, to ensure effective implementation of education of state educational policy, right direction of schooling, standards-based infrastructure/facilities development, educational equity and equal rights to education, and to safeguard the lawful rights of the schools, the teachers and the pupils. Therewith administrative acts lie at the core while educational regulations and local legislatives as supplements.

Over two decades since mid-1980’s more than eighty educational laws and major regulations have been developed and under implementation. These include:

- Compulsory Education Law;

- Education Law;
- Teachers Act;
- Higher Education Act;
- Academic Degrees Regulations;
- Private and Non-governmental Education Promotion Act;
- National Act on Languages and Scrip system;
- Regulations on China-Foreign Joint Educational Institutions and Programmes.

Some other educational legislation are being concerned and enacted according to the discussion with all stakeholders such as Central Government, educational officers, policy-makers, expertise, universities, teachers, and so on. All the efforts made at national and local level have great intention to ensure the quality of education with legislative framework.

1.3 The Development of Private/Non-governmental Education

The public authorities encourage, support, guide and manage the development of all kinds of private/individual-run schools and are in favor of diversification in education. The education has developed into a stage where all social sectors participate in sponsorship of diversifying schooling institutions, with government-run schools as the main body, and where both public and private schools developing simultaneously. The *Private and Non-governmental Education Act of the People's Republic of China* and the *Regulations on Implementation of the Act* have provided better legal and institutional environment for private/non-governmental education.

1.4 The Schools Management System

In May 2001, the *State Council Resolution on Basic Education Reform and Development* was issued, which stipulated that under the leadership of the State Council, 9-year compulsory basic education in rural areas should implement an administration system of “responsibility by local governments; divided management (by provincial, county and township authorities); and county government playing major roles”. This administration system has mandated the governments to be responsible for funding of basic education and moved the focal point of educational investment from lower-level township level to country level, which has stronger capacity of mobilizing resources.

High education is administered at central and provincial levels, with the provincial government taking the main responsibility. Meanwhile individual universities have expanded their autonomy in sources of funding and priorities of programmes, and have strengthened partnership with stakeholders.

Vocational-technical education has an administration system of “over-all leadership by the State Council, administration at different levels, major

decision-making by local authority, coordination by governments and participation by social sectors”; business/industrial enterprises occupational organizations and civil society institutions increasingly participate in macro-management in employment-oriented and skills-based vocational-technical education.

1.5 System of Educational Investment/Financing

China has been improving a national system of educational investment, with the governmental budget allocation as main source of public educational expenditures and other diversified means of resources mobilization.

In 2002, state-financed educational expenditures accounted for 3.41% of Gross Domestic Product (GDP); meanwhile societal and individuals’ contributions have been increasing, accounting for 1.97% of GDP in 2002. To ensure that no financially needy students should be denied equal educational rights because of poverty of their families, a policy-support system has developed, which include educational loans, assistantships, scholarships, subsidies, tuition waiver or reduction, and paid work-study. In 2002, a total of 7,023,000,000 Yuan was provided to assist 7.32 million/times college students, whose families had difficulty in paying for higher education, accounting for 5.03% of total expenditures of regular (formal) higher education institutions of the country.

1.6 School/college-Admission and Graduates Employment System

Primary and junior high schools are to enroll pupils from defined neighborhood community without examinations. Senior high schools (especially “key-point” laboratory schools) and upper secondary vocational schools do administer tests for new admissions. Upon graduation from senior school, there is a unified provincial/municipal graduation examination. College entrance examination has been most competitive, even though the gross enrolment rate has been drastically increased from less than 5% in early 1980’s to higher than 20% in late 1990’s and early 2000’s. With major continued expansion and diversification of higher education especially in late 1990’s, the intensive competition for college admission has been much lessened. Higher education institutions have been operating with major funding from governments and other from social diversified sources, among which families/students share cost by paying reasonable tuitions and other expenses.

Reforms efforts have been made to develop and improve a college/vocational schools graduates’ employment system, which is market-oriented, government regulated, college/school recommended and mutual choice by graduate applicants and employers.

1.7 Development of Non-formal Education and Lifelong-Learning System

Building a learning society and a lifelong education system has been a national development goal and included in the Education Law. The Education Ministry's *2003-2007 Education Reinvigoration Action Plan* stipulates that through universalized 9-year compulsory education, basically popularized upper secondary education, and expanded higher education, vocational education and adult education, "by 2020 a modern national education system and lifelong education system shall be shaped, which are "systematically sound, rationally mapped, and development coordinated". Diversified learning opportunities have been provided to societal members; workers education has been made more flexible and diversified; and community education and social education services system have been promoted. There have been major policy actions in developing varied forms of continuing education, including online education, evening colleges, workers colleges, correspondence colleges, radio-TV schools, examinations for self-learners, and diversified training institutions.

1.8 Other Aspects of Educational Development

The situation of gender parity could be illustrated in Table 2.

Table 2: Boys' and Girls' Enrollment Rates in Elementary Schools (1998-2005)

	1998 (%)	1999 (%)	2000 (%)	2001 (%)	2002 (%)	2003 (%)	2004 (%)	2005 (%)
Boys	99.00	99.1	99.14	99.08	98.62	98.69	98.97	99.16
Girls	98.86	99.0	99.07	99.01	98.53	98.61	98.93	99.14
Gender disparity	0.14	0.1	0.07	0.07	0.09	0.08	0.04	0.02
Average	98.93	99.09	99.1	99.05	98.58	98.65	98.95	99.15

Source: Ministry of Education. *China Educational Statistic Yearbook*, 2005, 2004, 2003, 2002, 2001, 2000, 1999, 1998. Beijing: The People's Education Publishing House. (in Chinese)

Dropout rates have been relatively very low, but in some disadvantaged areas this demands policy attention as the small percentage might hide major educational problems in Education for All especially in rural areas.

Table 3: Percentage of Dropouts in Elementary School by Gender (1998-2005)

	1998 (%)	1999 (%)	2000 (%)	2001 (%)	2002 (%)	2003 (%)	2004 (%)	2005 (%)
Boys								
Girls						0.36	0.6	0.47
Average	0.93	0.90	0.55	0.27		0.34	0.59	0.45

Source: ibid.

The relatively high rate of graduation rate at elementary level indicates a relatively high completion rate as follows.

Table 4: Promotion Rates of Elementary School Graduates (1998-2005)

	1998 (%)	1999 (%)	2000 (%)	2001 (%)	2002 (%)	2003 (%)	2004 (%)	2005 (%)
Promotion rates			94.89	95.45	97.02	97.90	98.10	98.42

Source: ibid.

As a determining factor of educational quality, the educational attainment level has much improved at both primary and secondary levels.

Table 5: Percentage of Primary School Teachers Having Required Educational Attainment Level (1998-2005)

	1998 (%)	1999 (%) *	2000 (%) *	2001 (%) **	2002 (%) **	2003 (%) **	2004 (%) **	2005 (%) **
Percentage		95.9	96.9	96.81	97.39	97.85	98.31	98.62

Note: years with * refers to all teachers, and those with** refer to full-time teachers.

Source: ibid.

2 Systemic Educational Reforms

Massive reforms have been undertaken in the education system in China at national level since early 1980's, along with high-rate economic growth and profound social changes. Focus in the following sections will be on reforms and development in basic education and vocational education at upper secondary level.

2.1 Universalization of 9-Year Compulsory Education

Universalizing primary and lower secondary education has been a major policy goal of educational development of China; it is also a fundamental national strategy in improving China's human development level.

A landmark of the nationwide efforts was the insurance of Compulsory education Law of the People's Republic of China, in April 1986, by the highest legislative body—the National People's Congress. The law stipulated that 9-year compulsory education should be basically universalized in all urban and rural areas of all provinces for all ethnic minorities, and illiteracy among young and middle-aged (15-45) should “basically eradicated”.

In 1993 the Chinese government issued Chinese Educational Reform and Development Programme, which placed highest priority on “basically universally 9-year compulsory education and basically eradicating illiteracy among young and middle-aged adults” as “top priority among priorities” in the national strategic goal of educational development. The guiding policy document defined a series of policies for the achievement of the strategic goal, including:

- Policy-making in a programmatic approach in regionally/locally-specific contexts/conditions;
- Planning by regions/provinces;
- Guidance by category of schools, programmes, and geographic areas;
- Implementation by steps.

In 2001, in view of new developments since 1986, the central authority issued the State Council and Development further defined objectives and fundamental tasks of universalizing 9-year compulsory education:

- In poverty-stricken areas, which account for about 15% of the nation's population and where compulsory education had not been universalized, resolute efforts should be made to universalize primary education and actively pushing 9-year compulsory education and adult illiteracy eradication;
- In rural areas, accounting for about 50% of the population where the objectives of 9-year compulsory education universalization and adult illiteracy eradication had been achieved, emphasis should be placed on improvement of quality and resources input; and

- In large-and-medium cities and economically developed areas, which account for about 35% of the nation's population, high-level quality 9-year compulsory education should be universalized.

Successful policy measures have included the following:

2.1.1 Strong commitment of the government (public authority) to substantial investment as major source of funding to basic education in ensuring the universalization of 9-year compulsory education and adult literacy, with focus on support to poor provinces/counties and ethnic minority-populated areas.

For the over 200 million pupils in 9-year compulsory education and its over 10 million teachers and staff, the governments take responsibility for paying the salaries of all in-service and retired teachers and administrative staff, capital construction, facilities, public expenditures per student head, subsidies for textbooks and students stipends/assistantships, etc.

- From 1995 to 2000, the government implemented National Programme on Compulsory Education for Poor Regions with 390,000,000 Yuan from the central government and 1.16 billion Yuan from local government. China also received the World Bank's loan of US\$380,000,000 plus inputs of 6 billion Yuan from local governments as matching funds, for universalizing primary or lower secondary education.
- Boarding schools were built in ethnic minorities' husbandry areas and poor mountainous areas; a system of school assistantships/stipends was established to expand educational opportunities for children of ethnic minorities.
- In and after the central government invested annually 5 billion Yuan for subsidies to the salaries of primary and secondary school teachers;
- In 2001 and 2002, the central government provided special grants of 3 billion Yuan for reconstruction of unsafe school buildings.
- During the 10th 5-Year Plan period (2002-2006), in supporting compulsory education in poor regions, the central government provided special grants of 5-billion Yuan for the second phase of the Programme, the central government budget allocated annually 100 million Yuan as school assistantship and 200 million Yuan for free textbooks;
- To assist in the improvement of teaching-learning quality of poor regions and ethnic minority populated areas, a "Programme on Partnership Matching Eastern Urban Schools and Western Poor Regions" and a "Programme on Partnership Matching Large-Middle Cities and Local Poor Regions" were implemented with effectiveness and impacts.

2.1.2 Decentralization of administration and management of basic education were legally ensured. The Compulsory Education Law stipulated that basic education at primary and secondary level (including lower and upper) shall be decentralized to

provincial and county levels, and that compulsory education rural areas shall be “administrated under the leadership by the State Council, with responsibilities by local governments, managed by divided levels, and coordinated largely by divided levels, and coordinated largely by the county”.

In April 2002, the State Council issued Notification on Improving Management of Compulsory Education in Rural Areas, which divided responsibilities among local governments at provincial, prefecture, county and rural township levels, in light of the principle of decentralization and provinces in compulsory education management since the Compulsory education Law was adopted in 1986.

In view of the disparities at country level and the limited capacity in resources provision by county governments in poor areas, the revision and amendments to the 1986 Compulsory education Law in August 2006 stressed the coordinating and supervising roles of the county government retaining the responsibility for management of 9-year compulsory education.

2.1.3 Local community participation in and contribution to the universalization of compulsory education. During 1996-2000, donations from civic society to compulsory education amounted to over 31 billion Yuan. The “*Hope Project*” launched by China Youth and Juvenile Development Foundation collected over 2 billion Yuan, contributing to the construction of 8,300 primary schools in poor rural areas, and training 2,300 primary school teachers in poor counties. The National Women’s Federation and China Youth and Juvenile Development Foundation implemented a “*Spring Bud Programme*” aimed at supporting poor girls in attending schools. The Youth League organized Young Volunteers to teach at school in rural areas and poor regions.

2.1.4 A system was developed for the inspection, monitoring and recognition of effective implementation of compulsory education at national and local levels.

In the Ministry of Education and provincial Commission of Education, Departments of Inspection and Evaluation were established for regular monitoring, evaluation and awarding of governmental and school actions and achievements in compulsory education and adult literacy. In 1994, the state issued Provincial Regulations on Evaluation and Rectification of Universal Compulsory Education, which specified indicators of level of universalization, teacher qualifications, educational quality, and educational expenditures. Annually the provincial government shall evaluate county government’s performance in universalizing compulsory education, and the state shall evaluate the provincial government’s performance. For outstanding achievements by advanced regions, institutions and individuals, the state shall offer public acknowledgement and awards of various kinds.

2.1.5 Effective use was made of financial and technical assistance of the international community. International organizations like UNESCO, UNICEF, the

World Bank and European Union, and bilateral donors like DFID of United Kingdom, have all contributed to the universalization of 9-year compulsory education and adult literacy in China.

In April 1991, the Chinese government issued National Economic and Social Development Ten-Year Plan and the 8th Five-Year Plan Programmed, which stipulated that compulsory education at primary and lower secondary level should be implemented, and within five years primary education should be universalized in regions accounting for over 80% of the whole population and lower secondary education universalized in regions accounting for over 30% of the population. To achieve the strategic goal and reduce regional disparity in education, China began to receive the World Bank loans for educational development in poor regions.

From 1992 to 2002, four World Bank loan projects were implemented for this purpose, using a total of US\$415 million of bank loans and 3.947 billion Yuan as domestic matching funds. The Bank-assisted projects benefited 466 poor counties and 21 provinces autonomous regions, 19 higher education institutions, 67 teachers/normal schools, and more than 100,000 schools. The Bank-assisted projects much improved infrastructures, school building and facilities, textbooks provision, teacher training, local government capacity in educational management, EMIS development, girls education, bilingual education and teaching-learning quality.

UNICEF-China cooperative programmes not only provided financial support but technical and professional assistance to primary education, especially girls education in western region, by promoting children rights-based approach and gender sensitivity in Education for All, policy-making for free textbook provision, competency-based curriculum, curriculum participation and teacher professional development.

2.1.6 Implications of universalized compulsory education for curriculum changes. There have been multi-faceted implications of the universalized 9-year compulsory education for curriculum changes in basic education in China.

The Compulsory Education Law provided a most authoritative legal framework for the assurance of children's equal rights to basic education in term of teaching-learning process as well as to national school curriculum and its affective delivery. Primary school are to enroll children from nearby community, regardless of children's family socio-economic backgrounds, and the label of elitist "key-point primary schools" and grouping by ability/performance were abolished to promote educational equity in admission criteria, resources input and performance standards.

The 9-year compulsory education has ensured an integral, holistic approach to curriculum and textbook development for both 6/5 year primary educating and 3/4 year lower secondary education, providing a close linkage of primary to lower secondary schools educational content and avoiding duplication/repetition of

curriculum content at the two levels.

The decentralized management and administration of compulsory education has regulated in increase of percentage of local curriculum in 9-year compulsory education and led to the decentralized curriculum management. The active participation of provincial/municipal/county government and educational institutions in the curriculum change in China would not have been possible if the administration and management of basic education had not been decentralized by legislative and policy actions since early 1980.

As reforms of education in other sub-sectors are not priority under this study, a brief description will be given as follows.

2.2 Expansion of Vocational-technical Education at Upper Secondary and Higher Level

In early 2000's there have been growing needs for expansion of vocational education.

Vocational-technical education (VTE) is regarded as a significant foundation of national economic and social development. In China, VTE has a major responsibility for the training of highly qualified skilled labor force and applied technical specialists, for creating and improving productivity, for developing cultural/spiritual civilizations, for capacity building of workforce for employment and in creating new jobs. China's new-type industrialization and modernization must be based on its rich human resources; it not only needs financially and technologically-intensive industries but still need develop labor-intensive industries which have large markets. The national socio-economic development programmes not only need millions of specialized technical force but also over hundred millions of highly skilled workers. VTE is therefore most closely linked to economic construction and improved employed and to the people's quality of life.

High-rate expansion of secondary vocational education largely at upper secondary level is a most effective way to develop human resources and highly qualified workforce in production, administration, management and services. Based on the universalization of 9-year compulsory education, secondary vocational education in China has aimed at turning out dozens of millions of applied technical force and high-quality workers. Specifically its major reform tasks "Action Plan for Educational Renovation" for 2003-2007 included the following:

- Re-oriented to employment and adopting a diversified, flexible and open educational model in integrating teaching/education with production practices, social services and technology dissemination, with a focus on

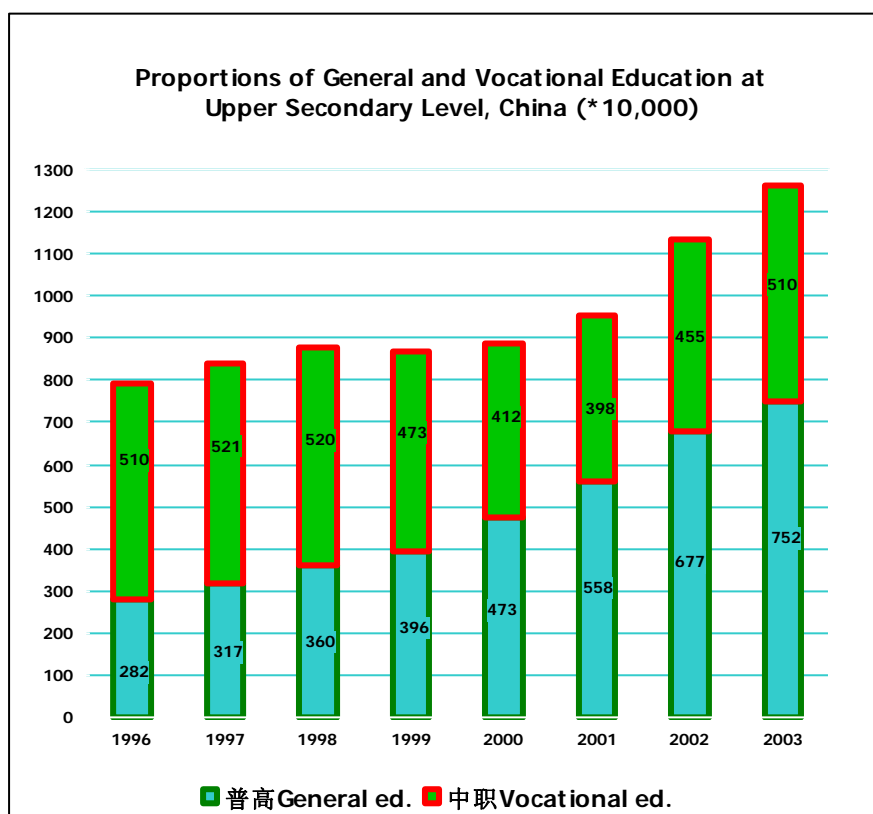
practice-oriented teaching and development of learners' actual competencies.

- Strengthening cooperation with business/industrial enterprises, research and technology dissemination and readjust programmes/curriculum/teaching plans through a “teaching to the order” and “training modules”.
- Oriented toward market needs and continually expand scope of services, combining credential vocational education with vocational-technical training of rural-urban migrant workers, in-service workers and the unemployed, for promotion of migration from rural to urban areas, for promoting of migration form rural to urban areas, for the re-employed of the unemployed, and for the skills development of the workforce.
- Over-all training and restructuring of the teaching force of VTE programmes, with involvement of specialized technicians, managers and professionals from industries and other walks of life as part-time VTE teachers.
- Implementing a system of “employment permit” and “vocational qualifications”, closely integrating/combining credential vocational education with qualification/certification vocational training, and thereby enabling VTE students to have better recognition and recruitment by prospective employers.
- Adapting VTE programmes/schools to market needs and developing a selected numbers of exemplary vocational schools, which could play leadership and demonstration roles in improving quality and effectiveness of secondary vocational education.
- Implementing a “Programme on Education and Training of Urgently Needed Skilled Workforce in Manufacturing and Modern Service Industries”, in light of labor market situational analysis and human resources needs forecasting of related vocations. A national survey conducted in 2003 by the Education Ministry and other related ministries and professional organizations on actual needs for technical and skilled workforce had the following findings: to meet the challenge of international transfer of manufacturing industry, China needs several hundred thousand of operators, programmers and maintenance workers in numeric control technology; in promoting informationization of national economy, there need be annually around one million more specialized technical people for application of computer technologies; along with the rapid increase of automobile sales, national auto service industry need recruit more than 300,000 employees annually; in medical service, the current ratio between medical doctors and nurses in China was 1:0.61 while the average world ratio was 1:2.7. If the Chinese medical doctor-nurse ratio is to increase to 1:1 by 2015, about 150,000 nurses of different levels need the trained annually.

The reform policy goal for higher vocational education by 2007 is to expand its enrolment to around 50% of the total enrolments in higher education, in response to the growing needs of industrialization and urbanization for workforce with high-order skills.

The reform-development policy is to reorient higher vocational education to improved employment and integrate teaching with production and research, thereby turning the heavy population pressure to grate strengths in human resources, with current priority on the training of urgently needed high-order skilled technical forces in manufacturing services and modern agriculture. The Education Ministry is developing 100 exemplary higher vocational colleges and around 1,000 quality courses and programmes.

Figure 2: Proportion of vocational education at upper secondary level (1996-2003)



Source: Ministry of Education, 2005, Beijing

New Development in Vocational-Technical Education has been seen in 2006. Educational system has trained more than 35 million persons/times for rural-urban migration. Training in rural applied technologies reached over 50 million heads/times, and continuing education and varied training programmes reached more than 100 million heads/times.

The central government budget allocated in 2006 special grants of 1.5 billion Yuan in supporting the development of 170 county vocational education centers and 220 exemplary secondary vocational schools. Special budgetary funds, in the amount of 500 million Yuan, were used to finance the development of 321 vocational

education experiment/training bases.

- Further expansion of secondary vocational education. In 2006, new admission of secondary vocational schools reached to 6.5 million, with a record-breaking total enrolment of 17 million.
- Participation in the “Programme for Education and Training of Urgently Needed Technical Force in Manufacturing and Modern Service Industries”, organized by Education Ministry and other five ministries and departments, has been expanded to include over 1,000 vocational colleges and more than 2,000 industrial/business enterprises, with involvement more than 3 million students.
- Local governments also intensified financial support to vocational education and contributed a total of more than 3 billion Yuan, two times more than the central financing, infrastructure development and capacity building for vocational education.

To assist in the assistantships to vocational school students from poor families, the central government allocated 800 million Yuan as special grants.

2.3 Expansion of Higher Education

Since higher education’s continuous expansion in 1998, China’s higher education institutions’ enrolments reached 19 million in 2003, becoming the largest higher education system in the world. The gross enrolment ratio was increased from 9.8% in 1998 to 17% in 2003, an indication of mass higher education. The campuses cover 1.036 billion square meters, 5 times more than that of 1980’s; buildings’ coverage is increased from 1998’s 154 million to 382 million square meters. In 5 years, there are 54 million square meters of apartment built for students and 7.4 million square meters of dining hall for students.

Deepening of higher education reform for employment demands:

- To transfer the guiding idea of higher education. The national and people’s demands are the key motivating force of higher education. The standards of higher education quality are the social recognition and acceptance for graduates. Colleges and universities shall consider the social demands to promote their graduates’ employment and satisfy the demands of scientific innovation and industrialization.
- To update the talent-cultivating model by adjusting the subjects and structure of majors. This is key factor for higher education development and graduates’ employment. The further reform shall be implemented in curriculum design, discipline structure, cultivating model, teaching content and methods.

- To deepen the reform of management system and administration system in colleges and universities. Based on analyzing the demands for talents, a comprehensive network shall be composed of enrollment, teaching, administration and employment.
- Colleges and universities shall make it a long-term task to construct the employment guiding and service system for graduates. The key factor is to promote the quality of guidance and service.

2.4 Diversification of Sources of Financing of Education

In 2002, the national financial investment in education reached 3.41% of GDP, 0.91% higher than 1997. Social and personal investment is also improved a lot. In 2002, the social investment in education covered 1.94% of the GDP, 1.04% higher than 1997.

2.5 Decentralization of Educational Administration and Management

Basic education, including primary and secondary education (K-12), has been largely decentralized to provincial and county levels, with the central authority responsible for over-all planning, major policy-making, monitoring and funding to nine-year compulsory education of disadvantaged children and in poor rural areas. Under the leadership of the State Council, the new rural compulsory education management system is implemented according to the principle of “local responsibility, divided management, and county implementation”, with strengthened coordination at provincial level.

The higher education system is administered at central and provincial levels. The vocational education is under the management system of “decentralization, local-government-oriented, adjusted by government, and social participation”. With the development of higher and vocational education, the following aspects have gained much more attention: 1) capacity building of HEIs and vocational higher institutions; 2) the study and training activities are generally implemented for teachers’ development; 3) new evaluation system is established for students’ all-round development; 4) diverse textbooks were issued for higher quality; 5) curriculum reform gained lots of attention and the quality education and human-oriented curriculum concepts are generally accepted; 6) in experimental zones, the compulsory education standards and plan are well recognized.

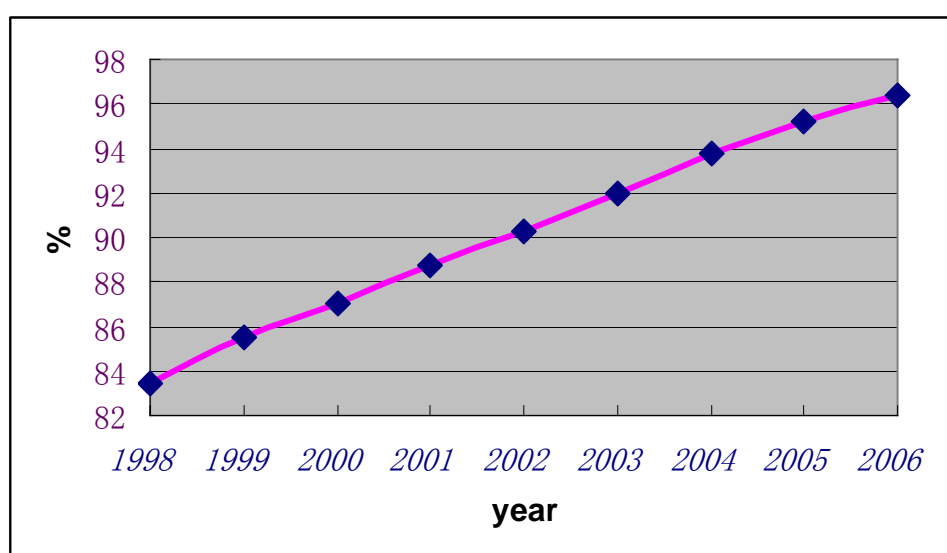
The vocational education reform is continuously deepened. Quality-education-oriented testing system is promoted in the school at various levels. New development is reached in ICT popularization in primary and junior secondary schools.

2.6 Teacher Education Policy Change

Teacher education is the footstone for preparing high quality teachers. The teacher group shall be a model learning organization. The problem is transferred from quantity to structure conflict. It is necessary to improve the teacher education system.

The teacher resource distribution way changed a lot. The difference is less between normal students and other college students. To prepare high quality teachers for well-to-do society, the teacher education's strategy transference and leap-over development can be implemented through innovative reform of the system, model, content and means.

Figure 3: Percentage of lower-secondary teachers attaining required educational attainment level, 1998-2006



Source: Ministry of Education. *Educational Statistics Year Book of China (1998-2006)*, People's Education Press. Beijing, China.

2.7 The Open-Door Policy in Education: International Exchange and Cooperation

In the education's international communication and cooperation, the non-governmental channel is important as the government one. The policy is "two-fold of government and non-government, dual and multi-lateral communication, highlighting emphasis and efficiency with strategy balance". On the base of mutual benefits and equality, China will establish communication and cooperation in education field with other countries, regions and international organizations. According to the strategy scheme of foreign policy, our educational communication will be equally established with not only the 5 powers –the USA, the European Union, Russia, Japan & Korea, southeastern Asian counties, but also the developing countries

from the 3rd world. A good policy environment is also crucial to improve the levels of importing foreign intellectual resources, e.g. college's service system of recruiting foreign faculty and the cooperation between civil colleges and well-known cross-nation enterprises.

2.8 Implementation of "New-Century Qualities Education Programme"

Aim of Qualities Education

Qualities education aims at over-all improvement of basic qualities of all learners for all-round development in moral, intellectual, physical and attitudinal, aesthetical and skills/competence dimensions; it enables learners to develop actively and lively and learn to be, learn to know, learn to work, learn to live and learn to keep fit, thereby to lay a solid foundation for the students to become "socialist citizens who have lofty ideas, moral character, educated/cultured and disciplined". In essence, "qualities education" is education aimed at improving fundamental qualities of all people of the nation.

Curriculum reform in basic education is the "key in the over-all implementation of qualities education"

Educational practices in China prove that only when quality education touches upon curriculum reform can it achieve its expected outcomes. Curriculum and textbooks reflect educational aims, conveys systematic educational content, and constitutes a key factor in improving quality of education. Meanwhile curriculum provides a framework for teaching and learning and a link in facilitating major reform of basic education.

The school curriculum reform has concerned with readjustment of objectives of primary and secondary education, development of national curriculum standards, transformation of curriculum structure, delivery instruction, textbooks and curriculum resources development, reconstruction of the educational evaluation system, retraining and professional development of teachers, and other supporting systems for quality assurance.

3 Basic Education Curriculum Reform

3.1 Background

In a country with such a large population like China, it is necessary to improve the quality of basic education and citizens for transforming the heavy population burden to rich human resources. In 2000, 85% of the population in whole China has been offered the opportunities of 9-year compulsory education, which reached 93% of targeted population in 2004. In 1990, Conference on EFA held in Jomtien proclaimed to “meet the basic learning needs” and “expand the high-quality basic education”. Currently China’s basic education is on the new stage of improving the education quality. The State Council held the 3rd National Education Working Meeting in 1999 and National Basic Education Working Meeting in 2001, which defined the reform goals in implementing high quality education for all. In 2000, the State Council issued *Action Plan for Revitalizing Education*, which called on educational community to “implement cross-century quality education project for promotion of quality education and general citizen’s quality and national innovative capacity. The curriculum and evaluation system shall be reformed to constitute the modern basic education curriculum framework and standards, educational content and teaching methods and the new evaluation system and teacher training in early 2000. The basic education curriculum system shall be circulated around China through 10-year curriculum experiment”.

In 1996, 1998, 2000 and 2002, the MOE issued the investigation on 9-year compulsory education and the high school curriculum around China, which conducted research on the basic education curriculum reform in more than 20 nations and areas after 1990s. The research shows that the reform in all nations is focused on how to educate qualified citizen, how to develop students’ awareness and capacity of lifelong learning, how to develop students’ innovative spirits and hands-on capacity, how to reform school system and how to make school a learning community with the core of students’ development. Through the new round curriculum reform, China aims at promoting quality of basic education, highlighting the fine Chinese cultural tradition and helping students understand Chinese culture and diverse cultures. They are expected to identify and share the common human values and learning to be, learning to live together and learning to learn.

3.2 Goals of Curriculum Reform

For the knowledge-driven civilization, meeting the challenges of the 21st century would necessarily changing the aims of education and the expectations people have of what education can provide. “A broad, encompassing view of learning should aim to enable each individual to discover, unearth and enrich his or her creative potential, to review the treasure within each of us. This means going beyond an instrumental view of education as a process one submits to in order to achieve specific aims (in term of skills, capacities or economic potential) to one that emphasizes the

development of the complete person, in short, learning to be. Education as a means to the end of human development is a very individualized process and at the same times a process of constructing social interaction. The fundamental principle is that education must contribute to the all-round development of each individual-mind and body, intelligence, sensitivity, aesthetic sense, personal responsibility and spiritual values.

Education in China over recent two decades has been guided by the fundamental principle, proposed by Deng Xiaoping, that education should be oriented to modernization, to the outside world, and to the future. The aim of education has been “to enable the educatees to learn in active and lively ways and develop morally, intellectually, and physically in an all-round way and to turn out a new generation who have (lofty) ideals, moral virtues are cultured/educated and disciplined”. In some policy documents “aesthetic and work skills/attitudes development” is also included. Despite variations in policy statements of educational aims, two common essential elements could be recognized: one is an emphasis on “the all-round development of all individual learners” and the other is a shift of focus from “basic knowledge and basic skills development” to values/attitudinal development and from acquisition political-ideological doctrinarism to more humanistic holistic approach to human development. Accordingly, the current curriculum reform is based on a redefinition of curriculum objectives in light of the over-arching aims of education, especially basic education.

1). Objectives of the new curriculum derived from the educational aims redefined in changing social-economic and cultural development contexts and reflected the requirements of qualities-oriented education (“Su-Shi-Jiao-Yu” in broad terms) New Basic Education Curriculum has defined the following objectives:

- development of patriotism, collectivism, love of socialism, and preservation of fine national cultural traditions;
- development of awareness/sense of socialist democracy and rule of law and abiding by law and social norms;
- development of healthy world outlook, life outlook and values;
- development of sense of social responsibility and obligation to serve the people;
- cultivation of creative spirit, capability of practice, scientific and humanistic competencies, and environmental awareness;
- development of fundamental knowledge, skills and approaches for learning throughout life;
- development of healthy body, solid psychological quality, aesthetic appreciation and healthy ways of life.

The senior high school curriculum objectives have also added the following:

- development of capacity for independent learning, vocational/occupational awareness, entrepreneurship, career planning;
- understanding of oneself and respect for others, learning to communicate and cooperate with others, development of team spirit;

- understanding of cultural diversity, and open-mindedness to the outside world.

2). The new curriculum objectives are defined in view of Education For All goals, to reflect the principle of inclusiveness in meeting basic learning needs of all by minimum standards.

The curriculum change was planned and implemented for quality education while the country had a simultaneous highest priority on universalization of 9-year-compulsory education.

All previous school curriculum and syllabuses in China were largely discipline based and bound for higher academic learning. Therefore, curriculum and textbook development used to aim at integrity and systematic structuring of discipline knowledge, without regard to the equal right of all children, youth and adults to basic education and to the function of basic education not only in preparing for higher learning but for the world of work.

The new basic education curriculum derive its objective from the nature of 9-year basic education as compulsory, universal, developmental, and inclusive for all. Thus, firstly, the new basic education curriculum is intended and planned to ensure that it meet diversified but basic learning needs of all children, without curriculum content too difficult to master, and that all children could complete 9-year-compulsory education, without curriculum standards too high to achieve. Secondly, the intended curriculum shall provide limited, fundamental content in learning by all for development, rather than for screening and selection purposes. Thirdly, the curriculum is intended to lay a foundation for learning after school leaving and throughout life.

3). The new basic education curriculum has defined three-dimensional objective:

- appropriate choice of educational content, including fundamental knowledge and basic skills, reflecting social development, scientific-technological progress and cultural diversity, and relating to learner's experience;
- integrating values education across all curriculum/learning areas;
- attention to learning processes and approaches, encouraging development of active, interdependent learning strategies.

From another point of view, one objective of the new curriculum is to design subject-specific curriculum from three dimensions: knowledge and skills, processes and approaches, and affective/attitudinal and values. Achievement of this curriculum goal will radically change the discipline-based, academic, college-bound curriculum dominant in five decades.

3.3 Policy Formulation for Curriculum Reform

Before the launching of massive curriculum reform, policy documents and development of curriculum standards and textbooks are formulated based on survey

research and comparative study and issued for mobilization for participation.

2001:

- Basic Education Curriculum Outline Programme;
- A Curriculum Framework of Compulsory Education;
- Development of curriculum standards of 22 school subjects for 1st-9th graders;
- Development of textbooks for individual subjects for K-9 schools;
- Provisionary Regulations on Management of Primary & Secondary School Textbook Development & Approval;
- Guidance on Experimentation of New Compulsory Education Curriculum.

2002:

- Education Ministry Notification on School Evaluation and Examination System Reform.

2003:

- Senior High School Curriculum Reform Programme;
- Development of Curriculum Standards and Interpretation of for 15 school subjects;
- Development of school Textbooks for Each School Subject.

3.4 Experimentation in Curriculum Reform

In 2001, the MOE issued the Notion on Implementation of Basic Education New Curriculum and arranged the relevant work, which demands the provincial educational departments to establish 5-year plan according to the threefold management. The teaching and research departments in all levels shall make the new curriculum implementation as core task. The normal universities and schools and the teacher training institutions shall consider the new curriculum as important content of teacher preparation and training program.

This document also regulated that the compulsory education new curriculum system shall be put into general experimental stage in fall of 2001, including the tri-leveled curriculum management system and evaluation system. According to the local situation, each province can choose an experimental area of basic education curriculum reform and the students in experiment shall cover 10%-15% of the total.

In the fall of 2003, it was revised of compulsory education curriculum design, each subject's standards, Local Curriculum Management Manual, School-based Curriculum Management Manual and the reform scheme of evaluation and examination in primary and junior secondary schools. There shall be 35% of the total students start to learn new curriculum.

2004 is the expanding stage of new curriculum in compulsory education. Based on the evaluation of the curriculum reform experience in national and provincial experimental areas, the compulsory education curriculum scheme, subjects' standards and relevant documents are formally issued around China. About 65%-70% of the

students in this stage began to participate in the new curriculum.

In 2005, the grade 1 of the primary schools and junior secondary schools are demanded to use new curriculum in principle. In field of teacher training, the paper demands the provincial educational departments to establish the scheme for teacher training and put the new curriculum content into the primary and junior secondary teachers' on-service education, in accordance with the principle of "training first, no training no teaching". The new curriculum training shall be the important content of current teacher training for the backbone teachers in continuing education program. In training methods, the trainers are encouraged to create the equal dialogue and communication with the teachers and offer suggestions on their confusion and difficulties in their teaching.

The popularization of new curriculum is under the principle of "model first and experiment first". In 2001, based on the application and recommendation of provincial educational departments, the MOE fixed on 42 counties and districts national basic education curriculum reform experimental zone from 29 provinces, autonomous region and municipalities.

According to the new curriculum's popularization strategy, curriculum management policy and local situation, the provincial educational administration departments establish the 5-year experiment plan and the implementation. There will be curriculum leader team and expert team established in provincial level, which is directly charged by the main leaders of educational department. The two teams are responsible for issuing the detailed work plan of new curriculum and fulfilling the relevant work like organization, training and layout, etc.

In basic education new curriculum experiment popularization, primary schools and junior secondary schools are basic and most important unit, which and the teachers shall be encouraged to participate the innovative implementation of new curriculum. The experience and lessons shall be summed up for further improvement.

3.5 Improving Curriculum Structure for Diversity and Flexibility in Education

The goals of curriculum take shape in the subjects taught in schools. This gives rise to a policy debate regarding the definition of subjects, numbers of subjects and the allocation of instructional time to each subject.

The reorganization of educational content in the basic education curriculum reform in China was first facilitated through transformation of curriculum structure.

As early as in the 1980's UNESCO Member States in Asia and Pacific region

experimented with “integral curriculum” and interdisciplinary thematic learning especially in sciences education, environmental and health education. Worldwide there has been a trend toward more integrated curriculum in basic education.

“Curriculum structure” could be interpreted in accordance with how “curriculum” is defined. If curriculum is understood as a process of designing instructional settings in which the learners are enabled to acquire experiences, then “curriculum structure” implies for “essential elements or linkages of designed instructional settings”. If “curriculum” is a set of subjects of instruction plus “hidden curriculum” for learning outside the formal teaching subjects, then “curriculum structure” means choice of subjects and the inter-relation of the subjects, or the organization and coordination of components of the curriculum.

The current curriculum structure has made three major improvements:

(1) *improved Curriculum Balance*

a) A better balance between discipline-based curriculum, integrated curriculum and “activity –based comprehensive practice”

- The new curriculum scheme has retained a number of *discipline-based curriculums*, especially for senior high schools, including Chinese language, math, and foreign language, and as an alternative, physics and chemistry and biology to “science”. Efforts were made in building on advantages of discipline-based curriculum (e.g. the logic and integrity in organizing knowledge, the professionalism and systemic Scientifics for effective learning acquisition). Meanwhile the discipline-based subjects in the new curriculum have balanced cognitive skills and values dimensions of educational content and shifted their focus from knowledge acquisition to holistic human development. Moreover, the disciplinary knowledge had been updated and related more to learners’ experience and social life /practice.
- A major breakthrough was made in the offering of “integrated curriculum”, including primary school’s “Character Building and Life”, “Moral Virtues and Society”, “Arts” and “Science”, and junior high school’s “History and Society”, “Science” and “Arts”.
- The offering of “Comprehensive Practice Activities”, which is an experimental curriculum centering on student activities and related to social life. This subject is intended to enhance ties of school education, learner’s personal experience and community life, and to develop learner’s problem-solving capacity, creativity and practice competencies. The three types of curriculum have performed their respective strengths and helped to change the over-emphasis on discipline-based curriculum.

b) A better balance in arranged proportions of instructional class hours for different types of curriculum

The new curriculum scheme defines the number of weekly class hours and the total number of instructional hours in an attempt to reduce pupil learning load in 9-year compulsory education. The following figure compares Chinese pupils' weekly class hours and annual school attendance days to their counterparts in some other countries/ regions.

Table 6: Weekly Class Hours and Annual Week Days: China vs. Other Countries/ Regions

Items		Total Weekly Class Hours (1-9 grades' total)	Annual School Attendance Days (5 days per week)
Country or Region			
China	New Curriculum	264	Primary 195days/Junior High School 200 days
	Previous Curriculum	274/277	Primary 200days/Junior High School 205 days
Korea, Republic Of		270	
Japan		256	200 days
Taiwan, China		287-293	
Hong Kong SAR, China		318-324	
Russia		271	204 days
Pavalia, Germany			156 days

Source: J. Yang & Y. Wu, *Constructing New Curriculum*, Jiangsu Education Press, 2003, P.93.

Within the framework of defined instructional time, proportions/weights are re-distributed to each respective curriculum. Table 2 indicates percentage of class hours for an individual subject in the total for 1-9 grades in the 9-year compulsory education in China.

Table 7: Percentages of Total Class Hours for Respective Subjects in 1-9 Year Compulsory Education, China

Percentage	Previous Curriculum Scheme	New Curriculum Scheme	Increase/Decrease
Subjects			
Moral Character Building	6.6% (including Society)	7%-9%	+
Chinese Language	23.8%	20%-22%	-
Mathematics	15.7%	13%-15%	-
Foreign Language	4.3%	6%-8%	+
Art (or Music, Fine Art)	11%	9%-11%	~
Physical Education	8%	10%-11%	+
(Comprehensive Practice) Activity, Local and School Curriculum	21.5% (including productive Labor and Work Techniques)	16%-20%	-

Source: *ibid*, P.94.

It could be seen from above that class hours for Chinese Language and Math were reduced while Moral Character Building, Foreign Language, Physical Education have had a increase and Arts, Activity-based curriculum and local curriculum have maintained similar number of class hours.

c) *Better balance in curriculum for different age groups throughout 9-year compulsory education.*

In balancing curriculum structure, attention need be paid not only to weights given to different subjects and to proportions of class hours for each subject, but also to curriculum design in light of physical-psychological characteristics of the learner at different age.

(2) *Improved Curriculum Integration*

As a worldwide trend in curriculum reform, integration has been a major issue in policy debate and an area of diversified practices in many countries. Previous curriculum in China was basically discipline-based and compartmentalized without interaction between learning domains. One of the goals of the basic education curriculum reform was to improve integration of relevant curriculum content and promote inter-disciplinary learning.

Improved integration in the new basic education curriculum structure has been achieved through the following ways:

- Design and offering of integrated curriculum. Primary school curriculum has been mainly composed of integrated subjects: For lower grades (1-4), course offerings include Moral Character and Life, Chinese Language (as mother tongue), Mathematics, Physical Education, Arts (or Music, fine art). For upper grades (5-6), course offerings include Moral Character and Society, Chinese Language & Literature, Mathematics, Science, Foreign language, Comprehensive Practice Activity, Physical Education, Arts (or Music, Fine Art). Junior high school curriculum is composed of both discipline-based and integrated subjects, including Beliefs and Moral Character, Chinese Language Literature, Math, Foreign language, Science(or Physics, Chemistry, Biology),History and Society(or History, Geography), Physical Education and Health, Arts (or Music, Fine art) and Comprehensive Practice Activities. Local authorities and schools are encouraged to choose integrated subjects and offer more electives.
- Offering a new course or “Comprehensive Practice Activities”. The course has integrated information technology as a compulsory subject into primary and upper secondary school education. The course requires research-based learning, community service and social practice, productive work and technical education. The subject is compulsory for primary, lower and upper secondary schools. The new integrated course places emphasis on pupils’

experiential learning and centers on activities, which will be jointly designed by teachers and learners in accordance with pupil's interest, needs and available resources. The teacher and the learner shall be equal participants in the designed curriculum activities.

- Increasing integrity in the teaching of a given subject. This is done through a) developing connections/ linkages between elements of knowledge within a subject and across different subjects, b) developing linkages between classroom teaching-learning and pupils' own experience as well as community life, and c) organizing integrated learning activities in the teaching of curriculum content of individual subjects.

(3) Increasing Curriculum Choice

The issue of "choice" in curriculum structure was brought about in the curriculum reform in response to the great disparity in China between rural and urban areas, between eastern and western regions, between ethnic majority and minorities, and between schools within the same region /city, in terms of curriculum planning, implementation and management. Previous curriculum structure in basic education was highly centralized and was characterized by conformity, in conflict with the diversified learning needs of pupils in varied socio-economic and cultural settings. The increased "curriculum choice" implies not only offering of more elective subjects but also more autonomy in curriculum adaptation to local/school-specific contexts and more active participation in curriculum decision-making process by local authorities, schools, teachers and pupils.

The increased "choice" in the reformed curriculum structure could be seen from the following:

- On part of the pupils, a) they have greater free choice from more elective subjects made available in both local and school-based curriculum, with greater freedom of choice of electives in senior high school curriculum; b) they have motivated participation in activity-based school curriculum development of their chosen subjects;
- On the part of teachers, a) they have greater choice of curriculum content in light of curriculum standards and learners' needs; b) they have more active participation in curriculum development of especially school-based subjects; and c) they have more free choice of approaches to teaching as well as greater autonomy in translation of curriculum "standards" and "structures" into classroom teaching practices.
- Local authorities and schools have had greater autonomy in curriculum development, implementation and management in light of local/school-specific contexts and of learners' development needs. The proportion of total class hours for "local curriculum" and "school-based curriculum" (excluding compulsory "Comprehensive Practice Activities") in the new curriculum structure have increased from 7% in the previous curriculum scheme (1992) to 10-12% in the new curriculum scheme.

3.6 Redesigning Curriculum Content

In light of National Curriculum Standards an emphasis was laid on integrating affective-attitudinal-value, processes-approaches, as well as knowledge-skills dimensions of contents. The rapid advances of sciences and technologies have led to increasing tension between the extraordinary expansion of knowledge and human being's capacity to absorb it. "Education must...simultaneously provide maps of a complex world in constant turmoil and the compass that will enable people to find their way in it" (Delors, J. at al, 1996).

These imply that there should be fundamental rethinking on what should be transmitted to the young generation at/through school and how the curriculum content should be organized or re-packed in the new century.

For five decades, despite seven previous "curriculum reforms", school curriculum in China remained largely discipline-based and academically bound for higher learning. Much of its content was fragmented, often out-dated, irrelevant and too difficult for young learners to master, and much divorced from community/societal as well as learners' development needs.

(1) Goals of curriculum content redesign

One of the goals of the current curriculum reform is "to change curriculum content from being overly difficult, detailed, one-sided, out-dated and focused on textbook-based bookish knowledge, and to strengthen the linkages of curriculum content to learners' life and modern social-technological development, with high attention to students' learning interest and experiences, and careful selection of fundamental knowledge and skills necessary for learning through life".

Another goal of the current curriculum reform is "to change curriculum tendency to overly focus on knowledge transmission and to lay new emphasis on the formation of proactive learning attitude, enabling the process of acquiring basic knowledge and basic skills to be simultaneously a process of learning to learn and developing correct/appropriate values".

The redesign of curriculum content in light of above curriculum reform goals was defined by national curriculum standards, which replaced previous "syllabuses" for specific subjects. In 2001, the Ministry of Education had developed 18 National Curriculum Standards of 17 subjects for compulsory education and 16 curriculum standards for senior high schools in light of "Compulsory Education Curriculum Setup" and "Senior High School Curriculum Scheme".

Curriculum content standards specify and carry out curriculum goals, and define the overall layout, selection and organization of subject-specific knowledge, skills and value/attitudinal components; they provide conceptual frameworks and basis for textbook development and curriculum implementation.

(2) Re-organization of curriculum content

The organizational framework of curriculum content is defined in terms of the following:

- *Educational Phases/Levels*: Based on learners' physical-psychological development characteristics at different ages/grades, content standards are defined in term of grades and level of education. For example, math curriculum standards are set at three levels respectively for grades 1-3, 4-6 ,and 7-9; Chinese Language & Literature at four levels for grades 1-2, 3-4, 5-6, and 7-9; and Science standards at two for grades 3-6 and 7-9.
- *Learning Domains*, this is closely linked to but different from “teaching content”, a term frequently used in previous curriculum schemes. A learning domain defines the framework and scope of curriculum content from the viewpoint of student learning. For example, Math standards include four learning domains: “numbers and algebra”; “space and graphics”; “statistics and probability”; and “practice and comprehensive application”.
- *Learning themes*, which provide topical focus and scope of content design and organization. For example, “History and Society” curriculum standards (I) proposes six learning themes including “We Grow in Society”, “Economics, Politics and Cultures Around Us”, “Chinese History and Culture”, “World History and Culture” and “Social Inquiries: Skills and Approaches”.

Senior High School Curriculum Structure is composed of Learning Domains, Subjects and Modules.

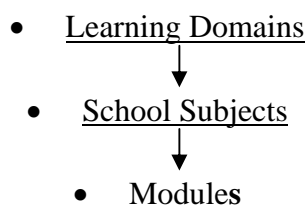


Figure 4: Structure of Senior High School Curriculum

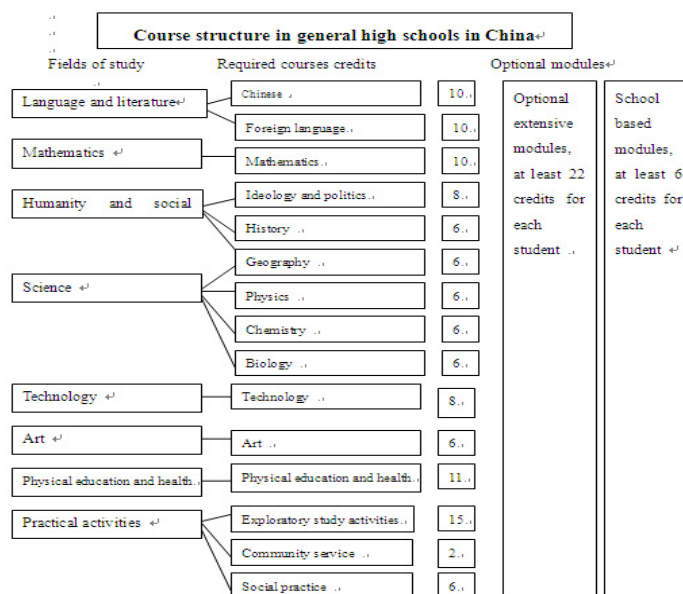


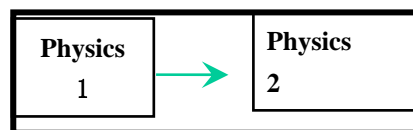
Figure 5 shows the examples of curriculum content of specific subjects. The change of the content is intent to meet the needs and the development of learners.

Figure 5: Examples of Curriculum Content of Specific Subjects

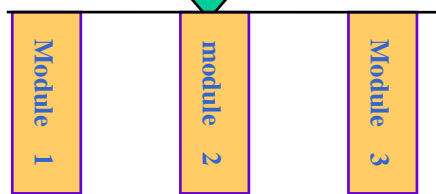
Physics

- Description of motion
- Interaction and Law for Motion
- Mechanical Energy and Energy
- Projectile Motion and Circumference Movements
- Strengthens and weakness of Traditional Mechanics

Compulsory

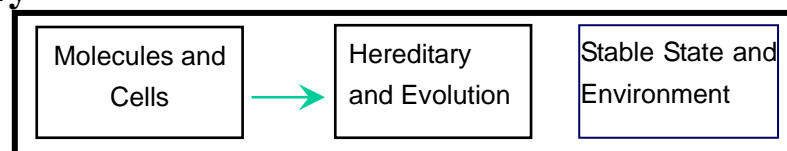


Electives

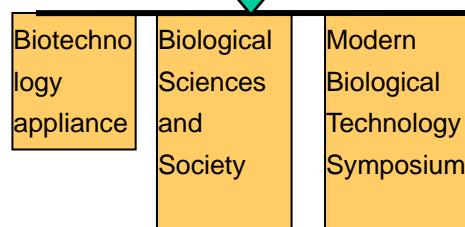


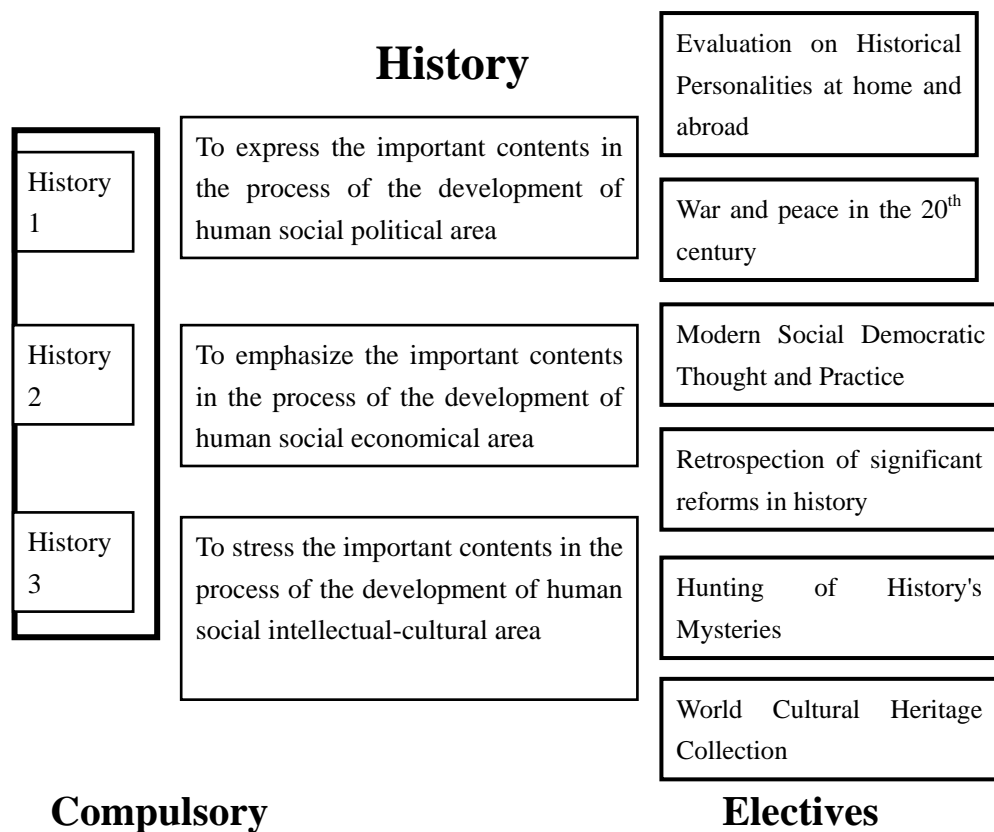
Biology

Compulsory



Electives





(3) Three-dimensional curriculum content translated from the three-in-one curriculum goal.

A major breakthrough in curriculum content redesign or reorganization is that the reform has successfully facilitated a fundamental shift from one-sided focus on discipline-based “basic knowledge” and narrowly defined “basic skills” to three dimensions of curriculum content in the interest of holistic, all-round human development of the learners, namely:

- knowledge and skills
- processes and approaches
- affection/attitudes and values

The current curriculum reform aims to develop multi-faceted competencies (qualities) of a new generation citizens, and has necessarily reoriented curricular goal to all-rounded human development not only in intellectual but affective/attitudinal/value dimensions through more interactive/complementary teaching-learning processes and approaches. This has implies a major breakthrough and a fundamental shift from an education centering on knowledge acquisition to a multidimensional education focusing centering on learner development.

The new emphasis on affective/attitudinal and value dimension and learning to live together was reflected and materialized in the following:

a) *It was laid down in national curriculum policy and curriculum goals.*

For examples:

- *The Basic Education Curriculum Reform Programme (2001)* included in curriculum goals such elements as “awareness of democracy and rule by law”, “social responsibility”, “scientific and humanistic competencies”, and “appropriate world outlook and values”;
- The six “curriculum reform goals” included “formation of proactive learning attitudes” and “developing right values”;
- Senior-high-school curriculum goals included “understanding oneself and respecting others”, “learning to communicate and cooperate”, “developing team spirit”, and “understanding cultural diversity and open-mindedness to the outside world”.

b) *It is reflected in subject-specific curriculum standards.*

For examples:

In curriculum standards for “Moral Character and Society”(3rd-6th grades), the content standards are composed of six parts: ① “I Am Growing”; ② “My Family and I”; ③ “My School and I”; ④ “My Community/Hometown and I”; ⑤ “I am Chinese”, and ⑥ “Toward the World”. Part includes such values as “commitment to responsibilities”, “learning to care and share”, “through school/class activities, understanding significance of justice, fairness, democracy, and equity in social life and developing awareness of modern democracy”. Part includes such values as “sensing major contributions of the Chinese nation to world civilization and developing national pride and self-confidence”, “knowing China is a unified multi-national/ethnic society, understanding ways of life of different nationalities/ethnic minorities, respecting cultural differences and promoting national solidarity”. Part includes such value statement as “understanding the beauty of peace and human sufferings from war, and cultivating a love for peace”.

Similar values are integrated in curriculum content and standards of other subjects.

c) *The teaching of human values and learning to live together are also integrated in textbook and other curriculum materials.*

“It could be seen that, directed by national curriculum policy guidelines, the design of the new curriculum content has largely covered thematic areas of peace, harmony, human rights, justice, equity, fairness, understanding, cooperation, tolerance, ethics and environmental protection. These contents are relevant to the life, experiences and level of understanding of pupils of different ages. An apparent emphasis has been laid on values education and moral character building of the learners” (Zhu, M. 2003)

(4) Integrating three curriculum content components: learners’ life experiences, disciplinary knowledge, and social-technological development.

In term of curriculum content, the new nationally set curriculum standards has

aimed to strengthen linkages of knowledge acquisition and skills development to learners' own life experiences and to actual social realities in light of the curriculum reform goal in developing creativity, innovative spirit and practice capabilities as key competencies of future Chinese citizens. This is best done through the newly offered course "Comprehensive Practice Activities", which is compulsory for primary through senior high schools.

3.7 Decentralization of Curriculum Management

To guarantee and promote the curriculum's adaptation to various demands of different regions, schools and students, this new curriculum reform is under the management in the national level, local level and school level.

The MOE established the general program of basic education curriculum, administrative policy, subjects, class hour and the new evaluation system. The provincial educational departments establish the scheme for national curriculum implementation and develop the local curriculum. After the audit and certification of MOE, the provincial ones can issue the curriculum scheme and standards in provincial scope.

Beside the national and local curriculum, schools can develop or choose the curriculum according to school's tradition and advantages, students' interests and demands. The educational departments in all levels shall guide and supervise the curriculum's development and implementation. Schools have the right to reflect the problems in procedure of implementing national and local curriculum.

3.8 Curriculum Evaluation

2002

- Evaluation of 42 curriculum implementation in state experimentation zones.

2003

- Evaluation of curriculum implementation in 6 provincial experimentation zones;
- Evaluation of the uses of curriculum standards for each school subject.

2004

- Evaluation of experimentation with new curriculum in 7 provinces/municipalities.

In 2004, the Department of Basic Education, MOE established several national investigations and seminars with local educational officials, researchers, teachers and principals of schools. Positive evaluation outcomes resulted from the evaluation of curriculum reform efforts in previous years:

(1) Basic Education New Curriculum Framework Well Understood & Accepted by Educators and Teachers

Currently China finished the policy design for curriculum system and established the documents of State Council's Decision on Basic Education Reform & Development, Basic Education Curriculum Reform Outline and the curriculum standards for each subject. There is no significant difference on urban and rural teachers' confidence on curriculum reform. The rate is over 90% of teachers in urban and rural areas are "much confident" and "confident" for the reform, among which 11.3% of total think the reform goals can be fulfilled completely, 43.9% basically fulfilled and 37.9% fulfilled by great efforts. Thus, most teachers hold positive altitude for new curriculum.

The new curriculum's basic concepts and core values are well expressed in educational and teaching practice. Teachers begin to care for students' mental status, attitude and values on the process of distributing knowledge and skills. The discipline-based subject is not the centre any more. The curriculum is related with social development and students' learning interest and experience, which offers students basic knowledge and skills for lifelong learning and their capacities of collecting information, gaining knowledge, analyze and solve problems, communication and cooperation. From the investigation, 72.8% of the teachers think they can basically fulfill the new curriculum teaching method of active exploration, communication and cooperation, 21.6% absolutely fulfill and only 0.7% unable for this goal.

(2) Significant Change of Students' Learning Life

The investigation also shows the significant change of students' learning life. From Table 8 below, percentage of 75.9 sees the active participation of students' performance in classroom while only 0.7% accounts to the seldom teacher/student's communication.

Table 8: Students' Performance in Classroom

Students' Performance	Active Participation & Atmosphere	Small Part of Students' Active Performance	Seldom Teacher-and-Students' Communication
Rate (%)	75.9%	22.5%	0.7%

Source: Survey Report on Basic Education Curriculum Reform Implementation, Basic Education Department, Ministry of Education.

(3) Teachers' Professional Competencies Highly Improved

Teachers' professional literacy is highly improved in the following 3 fields:

- 1) Teachers' educational concepts. They establish the new education goals and concepts of curriculum, student, elite, instruction,

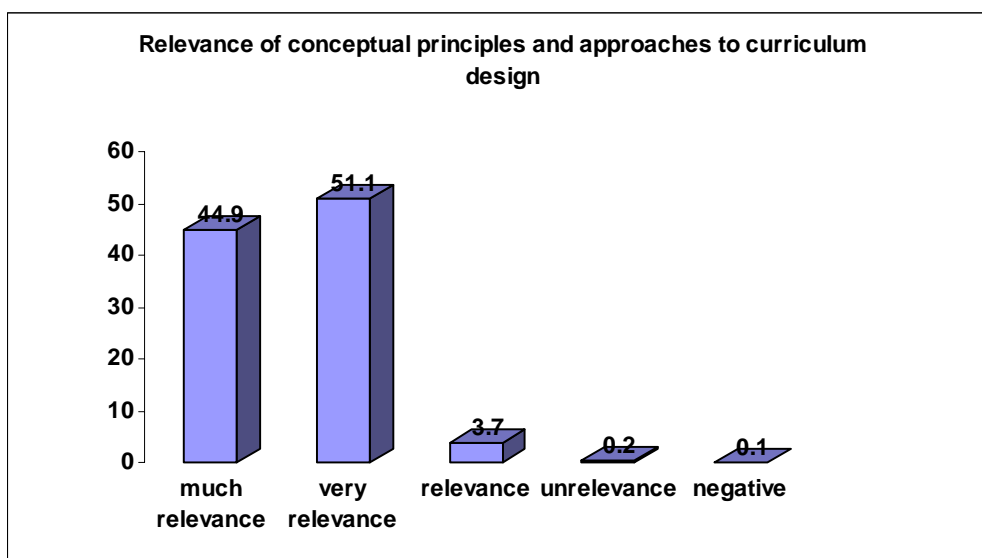
evaluation and quality. Teachers' concepts for curriculum have been promoted much after the training, of which 1.3% thinks "little or no achievements".

- 2) Teachers' professional role and teaching methods are changed. Teachers are transferred from an instructor to be facilitators, a cooperater and participant of students' learning process. According to the two surveys before and after the new curriculum reform, the communication between teachers increased much and the cooperative culture is established. And 95.5% of the total teachers said they communicate more with colleagues than before.

The curriculum reform experiment motivates teachers' passion and promotes their teaching capacity. The new curriculum offers a platform for teachers' self-development, self-reflection and action study.

As Evidence of Curriculum Relevance, the Basic Education Department at MOE organized, from March to August 2003, a nationwide survey study to evaluate preliminary outcomes of the curriculum reform, involving more than 6,886 teachers in 42 Experimentation Zones in 29 provinces/centrally administered. Municipalities' survey question included the following:

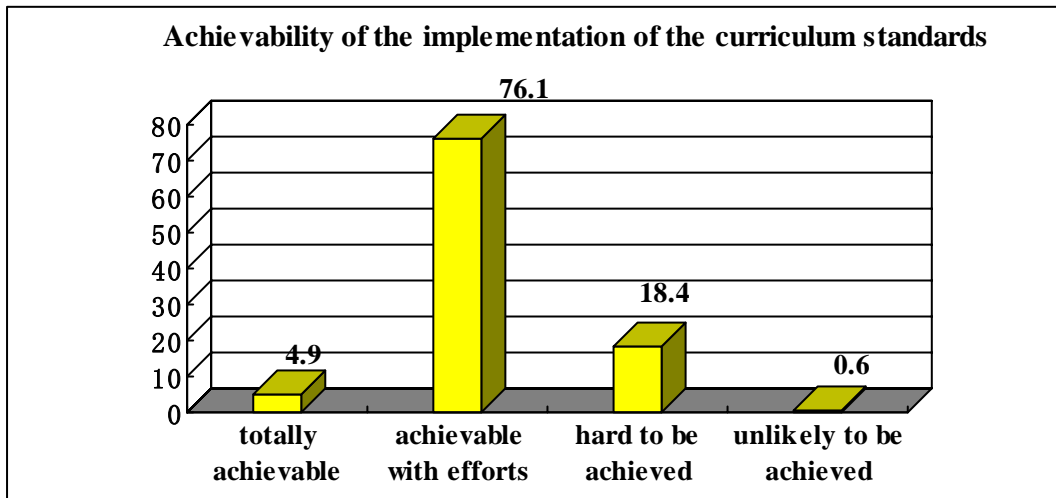
Figure 6: To what degree do you agree to the conceptual principles and approaches to curriculum design?



Source: Zhu Muju. Basic Education Department, Ministry of Education.

As high as 96% of the teachers who have been surveyed showed high level or comparatively high-level understanding of the conceptual framework of the new curriculum standards.

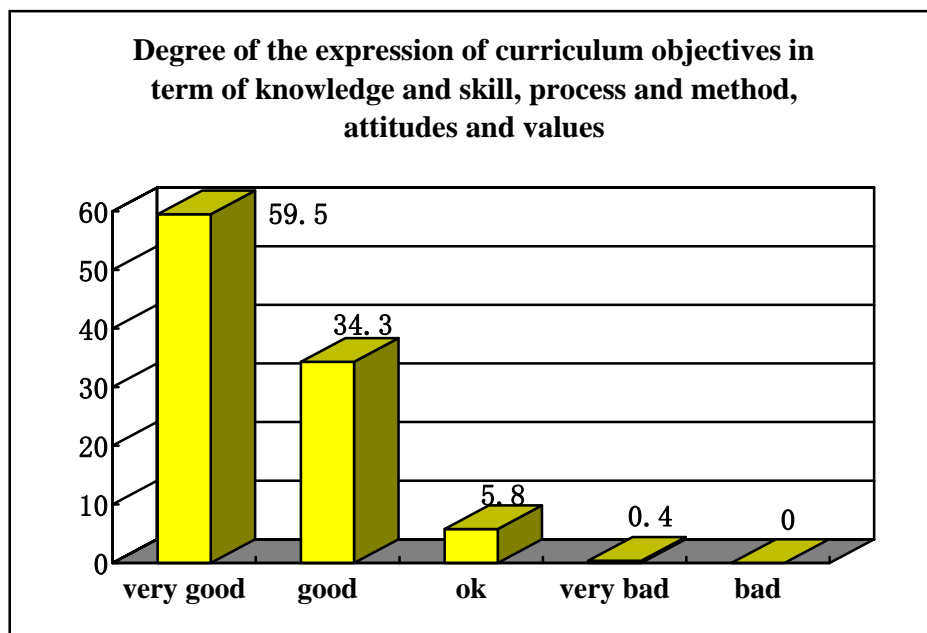
Figure 7: To what level do you think the curriculum standards have been implemented?



Source: ibid.

81% of the teachers believed that the conceptual objectives as defined by the new curriculum standards could be achieved after committed efforts were made

Figure 8: What do you think of the approach to curriculum objectives in term of knowledge and skills, process and method, and attitudes and values?

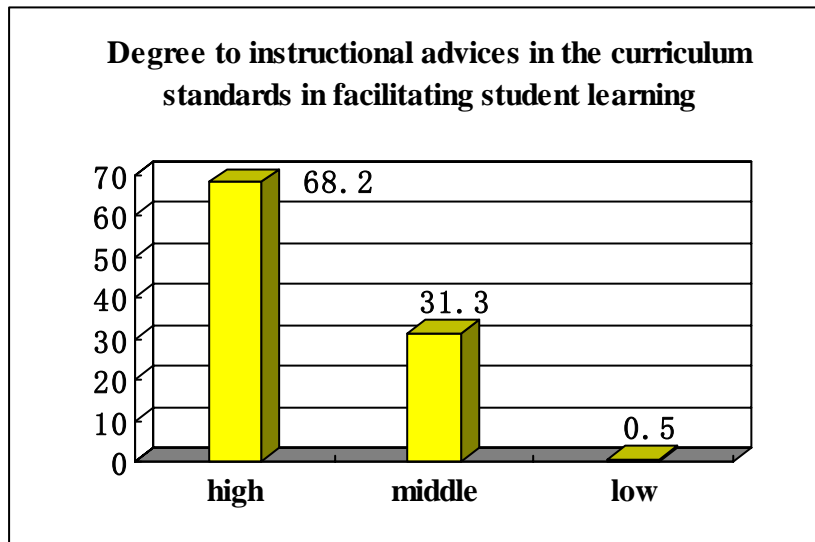


Source: ibid.

93.8% of the teachers agreed to the three dimensions (of knowledge, skills and values) to define curriculum objectives

- To what level do you think the content standards could be achieved through joint efforts by teachers and students?

Figure 9: To what degree do you think the instructional advices in the curriculum standards will help facilitate student active, inquiry and cooperative learning?



Source: *ibid.*

More Reasonable Adjustment of Class-hours Structure

Since May of 1999, the MOE began preparing for the new curriculum. Tens of investigations were established on the reality and problems of current school program. The school programs in other countries and areas are also considered by us as the reference. In Guiding Outlines of Curriculum Reform, the curriculum structure shall be improved in the aspects of equivalence, comprehensiveness and choice. The former compulsory education curriculum structure is designed along with MOE's "*Nine-Year Compulsory Education Full-time Primary and Junior Secondary School Curriculum. (Provisional)*", which restricts students' all-round development in the following ways:

- 1) The rate of subject curriculum and experience curriculum is not reasonable. Comparing with the Curriculum in 1986, the 1992 Curriculum is divided into two parts of discipline-based subject curriculum and activity curriculum. From the class hour rate and implementation, the students' practical capacity is not well-built up for lack of function of experience curriculum.
- 2) More attention should be paid to the comprehensive curriculum. In the curriculum structure of 1992, the separate curriculum keeps the leading position. In the 9 primary curricula, of which only the *Society* is the comprehensive curriculum. While the 13 curricula in junior secondary schools are separate curricula. The strictly discipline-based curriculum doesn't pay enough attention on students' cognitive law and demands of physical and

mental development, which also doesn't reflect the actual integration of disciplines and social development.

- 3) The unbalanced rate of subjects and class hour distribution. E.g. in the 9-year compulsory curriculum, Chinese and mathematics cover most percentage with 28% and 18% of the total (e.g. 6-3 school system). While the social science covers 7% and natural science 8% only.
- 4) The local difference shall be considered more and the rate of local curriculum shall be improved. China's basic education is under the central and local management system. While China is a nation with notable local difference. Thus, it is necessary to solve the problem of curriculum's adaptation to the demands of different districts and schools based on the national standards.

This general guiding principle of this curriculum reform is to keep the balance, comprehensiveness and offering more choice. In accordance with the *Decisions on the Basic Education and Development Nation-wide* and *Basic Education Curriculum Reform Outline (Provisional)*, the newly issued *Compulsory Education Curriculum Experimental Scheme* aims at promoting students' sustainable and all-around development according to their physical and mental development rules and the demands of quality education. Comparing with the former ones, the new curriculum has the characteristics as follows:

The new curriculum combines discipline-based curriculum and comprehensive curriculum

On the base of keep the traditional separate curriculum, the rate of the comprehensive curriculum is established formally for the first time, e.g. the Morality & Life, Morality & Society, Arts, Science in primary school and the History and Society, science and practical factitively in junior secondary school. And the comprehensive degree is higher in lower grades. The curriculum is composed of subject curriculums and comprehensive ones, which match the cognitive structure of students in different ages and good for students' general understanding and cognitive development. This also can avoid the repetition of curriculum contents. This helps students combine their learning at school with the life experience.

Review on the curriculum development around the world, the comprehensive curriculum appeared in the early 20th century and became populated after 1970's. In the second part of 20th century, the knowledge renewing speed increased rapidly, big quantity of new knowledge, technology and disciplines appeared and the integration between disciplines also was popular. The social development demands the response of school curriculum. Based on the reflection of traditional function of separate curriculum, the comprehensive curriculum has several unique advantages. In knowledge teaching, comprehensive curriculum can help school reach the general educational aims through integration of disciplines and dealing with the booming knowledge. In learning psychology, it can motivate students' learning interest and involvement through combination with their daily experience. In society, this is good

for student-and-teacher's cooperative instruction and the communication between school and society. After exploration in past tens of years, lots of countries made fruitful achievements in comprehensive curriculum and began the population.

Although in 1992, there has been a concept called as Comprehensive Curriculum-Society. There is no clear regulation for its nature and design. Comprehensive curriculum is new in our national curriculum reform. This adjustment needs scholars and practitioners' cooperation to solve the problems such as the logic of curriculum design, establishment of standards and textbooks, and how to improve teachers' knowledge structure and teaching capacity. It is still a new field for education research and practice.

To establish new practical curriculum. The comprehensive activity curriculum established 9-year-long compulsory education, including IT education, research-based learning, community service & social practice and technical education, etc. This aims at improve cultivation of students' innovative and practical capacity, social responsibility and strengthen the relationship between schools, community and society.

Flexible class hour rate. In this curriculum reform, the class hours is only regulated on the level of each discipline and total time of each week. The rate of all subjects is in 2% and the exact class hours are determined by local areas.

To balance the class hour rate of curricula. There are different measurements for curricula, e.g. lowering the rate of Chinese and math from the past 24% and 16% to current 20-22% and 13-15%; keeping the class hour of PE and arts and increasing the time for new local curriculum and comprehensive curriculum. The rate for local and school-based curricula is 10-12% and 6-8% for curriculum. Thus, in compulsory education, the local education departments and schools have the right to make the decision on 16-20% of class hours. This new management system leaves space for the different areas and schools to implement the curriculum in different ways. E.g. enrichment of the learning contents in developed area and facilitating basic contents in underdeveloped area. The new plan does not issue the rules for exact class hours for each subject, which is helpful for arrangement of curriculum at central or de-central level.

9-year-long persistent curriculum design and general strategy of compulsory education. The new curriculum is focused on the whole curriculum setting in 9-year compulsory education but not division of 6-3 and 5-4 education systems. The longitudinal integration of the relevant curricula includes morality & life in grade 1-2 and morality, society, science and comprehensive activity in grade 3-6, and the morality & society and the morality, history and society in grade 7-9. This shows the classification of grades and stages and alleviates the difference of curriculum contents for different class hours. Considering the two education systems of 6-3 and 5-4 will run in China for a long time, grade 6 is chosen to be a transferring year between primary and secondary school. This consistent design of curriculum contents reflects the nature of compulsory education and secures the same learning

standards for all students.

Control the total class hours and separate subject. In new curriculum plan, there are 640 class hours cut down for 6-3 education system and 844 hours less for 5-4 system. E.g. in 6-3 education system, the total class hours are reduced from 10,162 classes to 9,522 classes, 71 classes per year. In primary school, the average 32 classes/week are lowered to 28 classes now. How to alleviate students' overloading learning burden through curriculum reform, which is a social focus and also one of the aims of this curriculum reform. While in China, either in urban or rural areas, most parents cannot stay at home to take care of children for their own work. And the social education service and equipments are not well satisfied students' extracurricular demands. We have to consider reducing class hours for students' health and extracurricular activities and avoiding the possible safety problems of students' early departure of schools at the same time. Thus, the total time is reduced a little, yet the time for non-academic curriculum and activity curriculum increased a lot for students' all-around development. (See the table below):

Table 9: Grade 1-9 Curriculum Structure in Some Countries & Regions

Subject	Rate of Total Class Hours	Illustration
National Language	18% ~ 25%	The rate lowers in higher grades.
Mathematics	13% ~ 17%	Keep same in all grades. Only 8% in Russia.
Religion/Citizenship	4% ~ 6%	Keep same in all grades. Vacant in Russia.
Society	6% ~ 12%	Class hours increase in higher grades.
Science/Technology	8% ~ 13%	Class hours increase in higher grades.
P.E./Health	7% ~ 10%	Class hours keep same in all grades. 12% in France.
Arts	6% ~ 12%	Class hours increase in higher grades. More in the Republic of Korea.
Foreign Language	4% ~ 6%	Establish from senior grades of primary schools and the class hours cover 10% of the total.
Selected/ Local Curriculum	10%	No Selected/Local Curriculum in lower grades and be established from grade 5. Russia starts from grade 1 of primary school.

Source: Class Schedules of Japan, Republic of Korea, France, Sweden, Russia, Quebec of Canada and Taiwan of China, etc.

Table 10: 2001 Compulsory Class Schedules & Rate in China (Jun. 2006)

	Grade									Percentage of Total Class Hours
	1	2	3	4	5	6	7	8	9	
CURRICULUA	Morality & Life		Morality & Society				Morality Education			10~13% (History & Society cover 3-4% in junior secondary schools)
							History & Society (or history/geography)			
			Science				Science (or biography, physics and chemistry)			7~9%
	Chinese									20~22%
	Math									13~15%
	Foreign Language									6~8%
	P.E.					P.E. & Health				10~11%
	Arts (or Music/Painting)									9~11%
	Comprehensive activities									7~8%
	School-based Curriculum & Local Curriculum									10~12%
	26	26	30	30	30	30	34	34	34	274
Total Annual Class Hours	910	910	1050	1050	1050	1050	1190	1190	1122	9522

Source: Zhu Muju. Basic Education Department, Ministry of Education.

Notes:

- Each school year includes 35 weeks for having class and 2 weeks flexible by schools. 2 more weeks of review in the 2nd term of graduate year of secondary school.

- Class hours of comprehensive curriculum can be combined with the flexible time of school and local education department.
- Practical activities' are added into all subjects. Schools can arrange the time according to the contents and nature of activities.

3.9 Teacher Professional Development for Curriculum Reform

Teachers are a key force of meaningful educational changes and play active multi-faced roles in curriculum reform. To facilitate and implement a learner-centered curriculum and teaching-learning process, the significance of teachers is not diminished, but intensified in different forms.

One goal of the curriculum reform in China is “to change curriculum implementation from an over-emphasis on receptive learning, rote memorization and repetitive mechanical training to students’ active participation, motivated inquiry and hands-on experiences, and develop learners’ capacity for collection and processing information, acquiring new knowledge, problem-solving and communication-cooperation”.

Meanwhile the change in “teaching-learning process” becomes a focus of the curriculum reform, whereby teachers are mandated to facilitate active and independent learning, to interact actively with pupils and develop along with them, to respect pupils’ personality and individual differences in meeting their diversified learning needs, to create educational environment for learners’ active participation and both attitudes and capacity in applying learned knowledge, and ultimately to enable each learner to develop his/her full human potential.

In achieving these intended curriculum goals, teachers are expected to be active participant throughout the process of curriculum change, to be conveyor of the philosophy and principles of the intended curriculum, to be effective implementers of planned curriculum changes, and to be evaluators of learners’ achievements as result of the curriculum change.

Teachers are also obliged to apply information technologies as powerful teaching-learning tools and integrate them with pedagogy in teaching-learning processes for changes in teaching content, learning styles and teacher-pupil interaction.

Training and professional development of teachers has thus become a prerequisite and a key link in the process of massive and profound curriculum changes. Successful innovative practices in teacher capacity building for curriculum changes have included the following:

- (1) *Organizing large-scale mandated teacher training at local and national levels*

The Education Ministry made a policy regulation for curriculum reform implementation that “a teacher must have prior training before taking a post or job, and without required training no teacher can take a post or job” (“training first, post-taking second”; “no training, no post-taking”) Aspects of curriculum reform was made the core components of continuing education of primary and secondary school teachers. In-service teacher training for curriculum reform has been undertaken at national, provincial, prefecture/city and county/urban district levels. From 2001 to 2006, over 20,000 trainers have taken part in Education-Ministry-organized training, and more than 7 million heads/times have participated in locally organized training for implementation of new curriculum. Among the trainees were several hundred thousands of teachers in 372 state-priority poverty-stricken rural countries (You, B. 2006).

More than 100,000 trainees from teaching-research offices, training institutions (including teacher education universities) and audio-video/information technology institutions have gone to the field for training at grass-root levels.

(2) Developing an institutionalized system of school-based research-teaching, which has played substantial roles in guiding teachers for self reflection on their teaching practices, for problem solving through action research, and for teachers’ development through professional learning.

The Education Ministry launched the “School-Based Teaching-Research Project” in 2002 and, through review of hundred proposals 84 institutions were identified as “Project-Research Centers/Bases”. By 2006 all schools in nearby all regions of China have established and implemented school-based action research for improved effective teaching and learning, and increasingly more teachers have involved.

Teachers’ school-based action research aims to make the site of practice the centers of teacher professional and curriculum change. Through both individual and collective efforts, school-based research has led to massive changes and improvements in curriculum implementation, teacher professional development, and reconstruction of school culture:

- changing teachers’ professional life;
- improving teacher-partners relations;;
- changing school culture and ethos from teacher-centered to learner-centered; and
- changing school’s organizational structure to make school a truly learning organization and a learning community.

(3) Organizing Internet-based Networked Teacher Research and Distance Training

In harnessing the great potential of information-communication technologies as teaching-learning tools, as educational resources, and as levers of educational changes, the Chinese government made huge investment in implementing “Rural Schools

Modern Distance Education Engineering Project” since 2003, with a total inputs of one billion RMB Yuan (equivalent to over USD\$ 14 million) to equip 6 rural schools with teaching-discs display equipment, satellite teaching receiving-viewing system, and computer rooms, thereby providing a platform for sharing quality education resources. The Education Ministry had made adequate use of these equipment and facilities of the Project to undertake Internet-based distance teacher education and training in curriculum reform implementation. Since 2005, “China Educational Resources Service Platform” (www.cersp.com), directly by Education Ministry center for Basic Education Curriculum and Textbook Development, has been effectively functioning as an intermediate institution in providing web-based free of charge distance education platform for experts guidance and services for teachers in professional development in curriculum changes. Currently the number of daily hits for the platform web-pages has surpassed five million (You, B., 2006). The most recent (2006 New Curriculum National-Level Distance Training, <http://acad.cersp.com/article>) planned and directed by MOE Basic Education Department and its center for Basic Education Curriculum & Textbooks Development, and coordinated by MOE Teachers Education Department, involved more than 10,000 registered teacher trainees, curriculum specialists and researchers and over 40,000 non-registered teachers from different parts of the country over 15 days for asynchronous and simultaneous web-based teacher training, with a strong team of trainers with professional expertise from different backgrounds.

The Distance Training workshop facilitated top-down and bottom-up sharing of quality curriculum resources, enabled through on-line modules presentation and off-line interaction for equal dialogue, mutual consultation, and free exchange of e-lesson plans.

The Internet-enabled online teacher training platform provided a large number of teachers and curriculum specialists for professional learning opportunities and curriculum resources sharing platform, which would otherwise be impossible. Results of the questionnaire survey for evaluation of the Training showed a satisfaction rate higher than 90%. Over a short span of 15 days more than 10,000 trainees published 870,000 articles; daily web-page visits surpassed 1 million; maximum number of hits per issue of on-line “Newsletter” was over 50,000; and total number of on-line comments broke the number of one million.

In China’s history of curriculum changes and educational reforms, there had never been such large number of teachers and researchers involved, more motivated to participate, in greater depth in term of professional learning content, and with more massive evidences of impact of on-line/off-line teacher training for preparation for and implementation of systemic curriculum changes. Teacher’s capacity building has truly become a powerful instrument for the on-going curriculum changes while the latter have been a motive driving force and provided a framework for the former.

4 Problem Areas and Remaining Challenges

Curriculum reform especially in developing country like China is necessarily an on-going process of planned change. Despite major progresses made in the systemic curriculum reform in basic education in China, problems exist and challenges remain which warrant policy attention and actions for solution. Some of them are briefly discussed in this section.

4.1 Rural Areas Demands Greater Relevance of Curriculum Content and Different Strategies in Curriculum Reform Implementation

As a developing country, over 60% of the China's population is in rural areas and its educational development has been characterized by large disparity between rural and urban areas. For primary education, 94.46% of the schools and 84.07% of the primary pupils are in rural areas. For junior high (lower secondary) education, 86.75% of the schools and 83.22% of the pupils are in rural schools. For senior high (upper secondary) education, 61.12% of the schools and 64.99% of the pupils are in rural areas (Wang, D., 2006).

To make basic education relevant to rural development, the design of basic education curriculum should take into full account the actual learning needs of the pupils and the particular community development needs. While following national curriculum standards and offering compulsory state-prescribed subjects, the local authorities have to make full use of local curriculum and school-based curriculum, which account for 16-20% of the total class hours of basic education curriculum. The Basic Education Curriculum Reform Programme did stress the need for rural school curriculum to be reoriented to serve local community socio-economic development, and introduce vocational "green certificate" education to enable the students to develop employable skills for the world of work. However, the limited professional capacity of local authorities and schools has been much less prepared to take up the challenge.

The huge task of rural school teachers training and professional development for curriculum changes are more challenging. Of the over 11 million school teachers, 63.8% of primary teachers and 44.2% of junior high school teachers are in rural areas (Yu, X., 2006). At an average, rural school teachers have lower educational attainment levels and have many less professional development opportunities. In 2005, while 98.6% of primary school teachers and 95.2% of junior high school teachers had attained required educational level, only 63.5% of senior high schools had required educational attainment level. Only 35.3% of junior high school teachers have had a 4-year undergraduate education, a level much lower than their urban counterparts. It is apparent that rural school teachers have to take time in getting themselves professionally prepared for and competent in the nationwide curriculum reform through active participation and committed long-term professional learning.

4.2 The Need for More Diversified Curriculum Resources

Textbooks used to be the only main, if not the only resource of the centrally prescribed curriculum. In the two MOE-organized national surveys of the responses to questionnaire item of “major difficulties in curriculum implementation”, the number one “difficulty” was “lack of curriculum resources” (Zhu, M., 2006). Despite of the transformation of the leading centralized policy of “one and same versions of school textbooks for one and same syllabus”, which was complemented for nearly half a century, and the multiple versions of textbooks made avoidable as a result of the transformation of the school textbook development system, were 197 approved titles of K-9 grades textbooks at an average of 8 for each subject, and 67 titles for 10-12 grades textbooks at an average of 4.5 per subject (You, B., 2006), there remains a need for more diversified curriculum resources especially for electives and in multi-media.

4.3 Teachers Need Long-term Capacity Building and Professional Learning to Be Curriculum Implementers and Learning Facilitators

Although 98.6% of primary school teachers, 95.2% of junior high school teachers, and 83.5% of senior high school teachers have attained “required” educational level, the level of qualifications has remained lower than in developed countries: a normal school education at upper secondary education level for primary school teachers, a 2-3 year higher education for junior high school teachers, and a 4-year bachelor’s degree education for senior high school education. As many as 554,100 school teachers (around 5%) of the teaching profession have not yet reached the required educational attainment. For rural schools there remain a serious shortage of qualified teachers, and most of the in-service teachers urgently need on-site school-based continuing to get professionally ready for curriculum changes. One-shot training will not suffice to meet the growing demands for the changing curriculum.

4.4 Prevalent Examination-driven Practices

The prevalent examination-driven practices, which conflict with the goal of competencies-based curriculum reform for quality education. Despite the reorientation of curriculum change toward holistic human development of individual learners, most parents have retained their high expectation in their only-children for a quality academic education through a quality college-bound school, which admit new entrants in term of “measurable” test score in examinations in core subjects. As large disparity exists between urban and rural schools, between eastern and western regions and among schools, there remains intensive competition by parents /pupils for limited places in limited number of quality schools and for higher promotion rates from one level of education to a higher level, based on which schools and teachers are evaluated for future performance.

In pursuing a high-quality academic college-bound education and higher

promotion rates, schools, teachers and students are all under high pressure of respective drills, lesson reviews and memorization of factual knowledge in getting prepared for examinations for higher learning largely in cognitive discipline-based school-subjects, which largely measure measurable learning outcomes, rather than attitudinal/value and behavior changes.

5 Conclusion and Discussion

5.1 Setting Relevant Educational Aims and Curriculum Goals is Essential

What happens in classroom should reflect agreement as to what learners should learn and why. This is a major interest in all societies. Invariably, weight is given to the knowledge and skills necessary for productive lives and livelihood. But there are also strong concerns for social and cultural values, human rights, greater equity and equality, and good citizenship, democracy and world peace. Using data from the national curriculum from 108 countries, held by UNESCO-IBE, conclusion could be made that “while basic skills retain a strong place in national curriculum objectives, increased prominence is being given to values associated with citizenship and democracy, as well as to education as a human right and education for sustainable development”. (UNESCO, 2005).

A relevant curriculum is a key factor of quality education. Just as choice of education means a society’s choices of economic, social and cultural development, the organization of curriculum content implies an orientation of teaching-learning process to social development on the one hand and to personal development of individual learners on the other hand. The goals of China’s basic education curriculum reforms have reflected worldwide shift of focus in educational aims from overly instrumental view of education as a utilitarian process to one stressing all-round development of all learners in achieving quality education for all. For the world’s largest school system, with nearly 200 million pupils and 10 million teachers, the goals china set for its basic education curriculum reform seems ambitious, or even Utopian to some, yet the remarkable evidence based successes of a widest and most profound curriculum reform over a short span of years imply that curriculum change should be made a highest priority in the worldwide campaign of quality Education for All and that it is feasible to achieve inclusiveness in education equality and quality for all-round personal development and cohesive social development in country-specific context so long as there is strong political commitment, relevant policy framework, active participation of all stake holders, and mobilized connected at home.

5.2 Three Main Forces Contribute to the Success of Systemic Educational and Curriculum Reforms

First is the decisive role of the government. Education is a public good, a collective asset that cannot be left only to market forces. National public authority, or the government, has a decisive role to play in protecting education as a human right and in initiating/planning/monitoring major system wise education reforms through policies as levers of change. The current basic education curriculum reform is largely a government launched and directed nationwide endeavor. In launching and guiding the curriculum reform, the Education Ministry organized nationwide surveys and wide consultation successively in 1996, 1998, 2000, and 2002, developed a series of policy documents, proposed national curriculum standards, directed large-scale teachers training, and effectively mobilized resources.

The second force is the local community, including university professors, school heads, teachers, parents, and other community members, who have actively participated in the curriculum process. In initiating the reform, more than 1,000 leading experts from different fields and backgrounds formed 34 project working groups and conducted successive nationwide questionnaire surveys involving thousands teachers and school heads and parents. Numerous specialists and teachers took part in the consultation and discussion on drafts of policy documents. The basic Education Curriculum Reform Programme (on try-out basis) alone underwent 31 feasibility reviews and major revisions, thus making government policies more responsive and relevant to local contexts and actual realities. The democratic participation of local community has made the curriculum reform “most participatory, with the largest ever number of stakeholders involved in decision-making process” (Zhu, M., 2006).

The third force is the international community, which has contributed to the curriculum reform process through advocacy of international conventions concerning education as human right, through interplay of ideas in policy dialogue with national authority, through capacity building for competency-based curriculum and appropriate approaches to curriculum assessment, and through professional assistance. As a matter of fact, organized comparative study of international experiences in curriculum changes has been an important factor of rationale policy-making and curriculum design in China’s reform efforts. The Education Ministry organized studies on curriculum reforms in more than 20 countries and regions, from which Chinese curriculum policy-makers, specialists and teachers have benefited much in conceptual frameworks, content design, evaluation instruments, and many other areas. Inter-governmental organizations like UNESCO, UNICEF, UNDP and the World Bank and other international and regional EFA partners have all contributed to curriculum changes in China.

5.3 Shift toward Learner-centered Curriculum Framework as a Major Breakthrough of Curriculum Reform in China

“The quality of learning is and must be at the heart of EFA” (UNESCO, 2005). In preparing and planning the curriculum reform, the Chinese government, through the Education Ministry and its Basic Education Department, set a relevant policy framework which places learners at the heart of the teaching and learning process, emphasizing that from the outset, school curriculum must respond to the diversifying learning needs and reflect learners’ age characteristics and community circumstances. It leads to other strategies and ways in making teaching and learning in the classroom genuinely responsive to learners through changes in curriculum structure, curriculum standards, curriculum content, textbook development and curriculum evaluation.

The three dimensions of knowledge-skills, processes-approaches, and affections/attitudes-values as integral curriculum content and teaching process have contributed to the changes from over-emphasis on cognitive development and from

examination-driven practices. By means of the planned and achieved changes, a fundamental shift is made from discipline-based knowledge-centered curriculum to a learner-centered curriculum aiming at all-round development of all individual learners as members and citizens of the society at large. The progresses made in basic education curriculum reform in China so far attest what the Dakar Framework makes clear that “an inclusive learning environment is an essential attribute of high quality education” (UNESCO, 2005), and that only a relevant learner-centered curriculum could ensure the best education for inclusively all, rather than a “good” elastic education for the few. The actual progresses which Chinese curriculum developers and teachers have made in integrating affective/attitudinal and values education across curriculum areas to facilitate learning to live together in harmony and peace is most meaningful at a time when incidences of conflicts have been increasing and educators are obliged to teach the young to respect and appreciate differences and to learn to solve conflicts through dialogue and other peaceful means.

5.4 Better Use of Instructional Time and Reduced Learning Load for More Active Learning

Conventional curriculum in China was characterized by heavy learning loads as a result of the discipline-based college-bound curriculum and examination-driven practices. It was often a major issue in policy debates during previous curriculum reforms. In the educational reform during mid-1960's the late Chairman Mao Zedong had instructions to cut half of the learning load made overly heavy by the many discipline-based subjects for more active and lively learning of the students. One intended objective of the curriculum reform is to release the pupils from repetitive drills for higher performance scores in examinations and to improve the effective use of instructional time for meaningful active learning.

“Instructional time is an aspect of the curriculum that deserves special attention. The length of time required to achieve educational goals is a matter of considerable significance and a strong indicator of students' access to learning opportunities. School effectiveness research shows considerable correlations between instructional time and students' achievement at both primary and secondary levels. Significantly, this relationship appears stronger in developing countries” (UNESCO, 2005). The World Bank estimates that 850 to 1,000 effective hours (not necessarily official hours) of schooling per year are optimal in publicly financed primary schools (World Bank, 2004b).

The following tables compare international/regional average of instructional time to given subjects or by grades with the changed instructional time in basic education curriculum in China. Caution need be made that “intended instructional time – the maximum amount set in national curriculum statements – is not the same as actual learning time allocated in schools, which is again different from the time learners spend actually learning (time on task) and the time they spend on academic asks (academic learning time)” (UNESCO, 2005). This implies that what matters most is

not the amount of instructional time in prescribed curriculum but how effective is the best use of the time for what purposes. Compared to 1992 Curriculum Scheme, new curriculum has reduced the total number of class hours from 10,162 to 9,522, a reduction of 640 hours for 6-3 school system, and an 844 hours reduction for 5-4 school system. The number of weekly class hours for primary schools was reduced from 32 to 28 (Gao, X., 2006). While instructional time for academic subjects is reduced to certain non-academic subjects and activity-based subjects. More class hours have been allocated to enable students for more active learning and greater freedom of choice.

Table 11: Global average of annual instructional time, by grade level and time period

	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 9
1985	710	720	760	791	817	844	896	908	900
2000	705	717	754	780	811	825	900	904	940
Number of countries	79	79	79	79	78	77	71	69	54

Source: UNESCO, *EFA Global Monitoring Report 2005: The Quality Imperative*, Paris: UNESCO Press, 2005.

Table 12: Regional average yearly instructional time by grade level in 2000

EFA Region	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 9	Number of countries
Sub-Saharan Africa	755	775	812	847	872	871	951	946	965	16-18
Arab States	725	732	752	792	813	820	862	868	880	17
Central Asia	533	575	620	647	740	754	798	812	830	9
East Asia and the Pacific	704	710	764	784	814	826	911	918	918	14
South and West Asia	646	646	730	769	791	856	885	890	907	7-5
Latin America and the Caribbean	761	764	781	783	772	796	921	928	943	17-18
North America and Western Europe	743	748	790	799	845	847	894	906	933	23
Central and Eastern Europe	549	597	624	658	734	773	811	830	855	20
Total	689	705	742	766	804	819	883	891	908	122-125

Source: Benavot (2004a)

Source: UNESCO, *EFA Global Monitoring Report 2005: The Quality Imperative*, Paris: UNESCO Press, 2005, p.152.

5.5 Evidences of Successes and Impacts

According to nationwide surveys in 2004 for preliminary evaluation of curriculum implementation, the results are positive and encouraging. The guiding principles and conceptual framework of the new school curriculum have been widely recognized and accepted by the education community. Over 90% of school teachers are confident that the curriculum goals are achievable through committed efforts. 74.8% of teachers feel “basically re-adjustable” to the new textbooks while another 23.2% feel “very comfortable” with the new textbooks. About 93.8% of teachers supported the curriculum design in three dimensions. 96% of the teachers recognize fully or basically the concepts and approaches defined by curriculum standards. 72.8% of the teachers believe they are basically capable of facilitating changes in teaching-learning styles based on active inquiry, cooperative learning; 21.6% believe they could fully accomplish this; only 0.7% think they could not achieve this at all. The curriculum reform has resulted in apparent changes in students’ learning life. 75.9% of the students could take active part in lively classroom teaching-learning, and only 0.7% of students seldom interact with peers and teachers and focus on lecture attendance (Zhu, M., 2004).

Meanwhile the central authority at the State Council and the Minister of Education made also positive comments on the curriculum reform. “The effects of the curriculum reform have been apparent. It has brought many changes to our classrooms ...and is bringing about substantive positive changes to basic education. Its impacts will be gradually manifested themselves” (Zhou, J., 2004).

However in comparing Chinese curriculum reform experiences with those of other countries, caution should be taken not to make generalizations which might be irrelevant to other country-specific contexts.

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