An International Comparative Study of School Curriculums

NATIONAL INSTITUTE FOR EDUCATIONAL RESEARCH

T his study is best viewed in the wider context of educational research projects initiated by the National Institute for Educational Research (NIER) of Japan. In the late 1960s, for example, NIER organized a series of workshops as part of a joint research project: A Comparative Study of School Curriculum Development of the Stage of Elementary Education in Asian Countries. The outcome of these workshops was the publication in 1970 of a three-volume report titled *Asian Study of Curriculum*.

In the 1980s, NIER initiated two joint research projects on school curriculum with a series of workshops and meetings. The objectives of the projects were the following:

- Study the curriculum systems of the countries in Asia and the Pacific.
- Appreciate the similarities and differences among them in the context of their socioeconomic and cultural backgrounds.
- Identify general trends as well as the unique features of their problems in these areas.
- Exchange experiences with one another for mutual benefit.

The outcome of the projects were the publication of *Elementary/Primary Schools Curriculum in Asia and the Pacific* and *Some Critical Aspects of Secondary Education in the Countries of Asia and the Pacific*.

Over the last decade, since the joint project was launched, many countries have revised, or are in the process of revising, their curricula. NIER therefore decided to initiate a new research project on the study of curriculum at both primary and secondary education levels. Accordingly, at the first phase, NIER organized two meetings: the Regional Meeting on the Study of Curriculum in Asia and the Pacific on 10-21 November 1997, and the Editorial Committee Meeting on the Study of Curriculum in Asia and the Pacific on 9-11 March 1998.

Based on the questionnaire developed by the first Regional Meeting and further finalized by the Editorial Committee Meeting, selected countries in Asia and the Pacific as well as in other regions were invited to undertake national studies. In order to share their experiences and make a comparative analysis of national studies conducted by the participating countries of the project, NIER organized the International Meeting on the Study of School Curriculum on 9-20 November 1998. This meeting was convened in collaboration with ACEID, UNESCO Principal Regional Office for Asia and the Pacific (PROAP), Bangkok.

Objectives of the Meeting

The objectives of the meetiing were as follows:
- Cross-nationally analyze the background information in terms of the socioeconomic conditions, educational systems, and other related matters of the participating countries.
- Make a comparative analysis of the school curriculums based on reports of the national studies conducted in the participating countries.
- Complete the final report of the study.

Participation

Participants from selected countries in Asia-Pacific as well as Europe and North America were invited to the meeting. In some cases, participants attended as official country representatives and in others in their individual capacities. They were from Australia, China, Fiji, France, Germany, India, Indonesia, Japan, Lao People's Democratic Republic (PDR), Malaysia, New Zealand, the Philippines, the Republic of Korea, Sri Lanka, Thailand, the United States of America, Uzbekistan, and Vietnam. A representative from the UNESCO Regional Office in Bangkok also attended the meeting.

Inauguration

The meeting was inaugurated on 9 November 1998 with an opening address by Shigeru Yoshida, director-general of NIER. This was followed by a welcome address by Masamitsu Oki, deputy director general of the Science and International Affairs Bureau, Ministry of Education, Science, Sports and Culture (Monbusho) of Japan on behalf of Monbusho as well as the Japanese Commission for UNESCO. A welcome message from Rupert Maclean, chief of ACEID, was also presented on behalf of the director of PROAP.

Officers

The following participants were elected as officers of the meeting:

Co-chairpersons:
Ram Chankar (Fiji) – Group A
B.P. Khandelwal (India) – Group B
Co-rapporteurs:
David Nohara (USA) – Group A
Bella O. Mariñas (Philippines) – Group B

Organization

The meeting conducted its work in plenary sessions as well as in group sessions. After the presentation of country reports, the participants decided to continue to work on the analytical framework developed by Robyn Baker (New Zealand) and the NIER secretariat prior to the meeting. Two working groups were constituted: Group A dealt with sections B and D, while Group B was in charge of sections C and E of the questionnaire.

A drafting committee composed of officers of the meeting—Susan Mann (Australia), Colin Brown (New Zealand), Gyu Ho Hwang (Republic of Korea)—and the NIER Secretariat was formed for the purpose of finalizing a draft manuscript.

Final Report

The draft final report of the meeting and the joint project was adopted in the final working session on 20 November 1998. Minor modifications and final editing were completed by the NIER secretariat. Each participating country finalized its report.

Curriculum Policies

Background

During the last decade, various efforts have been made in each country to remodel its

education system to bring it into line with social, economic, political, and cultural change. These educational changes are reflected in national educational policies and the curriculum framework.

Social/economic/political/cultural contexts of curriculum policies

Curriculum policies in participating countries represent a wide variety of social, economic, political, and cultural contexts. While the degree of emphasis varies in each country, the following imperatives driving curriculum policy are evident:

- The need to build social cohesion and national identity in global society and to preserve cultural heritage, e.g., in Australia, Germany.
- The need to impart cultural, ethical, and moral values, e.g., in Indonesia, Fiji, Lao PDR, Malaysia.
- Concern for future economic well-being, international competitiveness, e.g., in Australia, New Zealand, the United States, Uzbekistan.
- Concern for equal opportunity and equity, (urban/rural, gender, income, disabilities), e.g., in Sri Lanka, the United States, India.
- The desire to raise achievement for all students, e.g., in New Zealand, the United States.

Educational goals/aims for the compulsory education sector

All countries have stated educational goals for their compulsory education sector. The most common include development of basic foundation knowledge (literacy, numeracy, and life skills); and of the child's intellectual, emotional, spiritual, and physical potential; and of critical thinking and problem-solving skills. Others mentioned are knowledge of the world of work, respect for human dignity and human rights, understanding of ecology and appreciation of the environment, international understanding and development of a one-world view, promotion of civic and moral values, and the ability to adapt to change.

One major difference between countries is the existence of religious goals and the extent to which they are included in the curriculum. For example, the Indonesian and Malaysian curriculums include religious goals, while other countries, including Australia, France, and New Zealand, are secular in their public education systems.

Regulations governing curriculum policies

In all countries, schools are subject to some degree of government regulatory control of the curriculum, either at a national or state level.

In countries with a federal structure where the states have responsibility for education, as in Australia, Germany, and the United States, there is no mandatory national curriculum. Within these countries, regulations at the state level may vary.

Countries with a national education structure exhibit a range of national regulations, from the complete control of all aspects of student outcomes and curriculum implementation, including time allocations, subjects, and assessments, (as in China, Lao PDR, Sri Lanka, and Vietnam) to curriculum and administrative guidelines with flexibility for implementation at the school level (as in India and New Zealand).

Countries with a high degree of curriculum regulation also tend to highly regulate textbook development and provision.

Curriculum Change

Curriculum changes over the past 5-10 years

There have been a variety of changes in the school curriculum of participating countries

over the past 5-10 years. The following table provides an overview.

All countries report significant curriculum changes over the last 5-10 years. The most commonly introduced new subjects include information technology, civics, and additional foreign languages. Other new subjects are technology (Australia and New Zealand), and integrated studies (Life Environmental Studies in Japan, and The World Around Us in Lao PDR).

The development and revision of national or state curriculum frameworks and standards/competencies occurred in Australia, Germany (Bavaria), the Philippines, the United States (New York State), and Vietnam.

One common trend was the attempt to redefine the balance between compulsory and elective subjects. Interestingly, countries with a broad range of elective subjects were attempting to refocus on a common core (Australia and Germany [Bavaria]). Other countries were expanding their electives to provide more subject choice (Fiji, Japan, and Vietnam).

The analysis reveals an increasing emphasis on school-based continuous assessment in Australia, Fiji, India, Malaysia, New Zealand, Philippines, and Sri Lanka.

Predicted changes in national curriculum for the next 5-10 years

As countries look toward the future, there is a general readiness and acceptance of the need to revise and review curriculum. Many of the expected changes over the next 5-10 years continue current reform efforts. Some countries (Japan and Sri Lanka) have an approved government direction for future curriculum, while others are only in the position to predict trends.

The integration of information technology across the curriculum is regarded as a major priority by many countries. Other priority areas for the next 5-10 years include maintaining basic skills such as literacy and numeracy;

values education in a pluralistic society; vocational education and enterprise studies; encouragement of independent, self-directed learning; development and refinement of school-based assessment; and education for participation in a global society.

Countries expect to continue to focus on the balance between compulsory and elective subjects. Those where subjects proliferate need to strengthen the core (Australia, Germany [Bavaria], New Zealand, and the United States [New York State]). Those with a large number of mandated subjects expect to provide more flexibility by introducing more electives (China, Japan, Korea, the Philippines, Sri Lanka, and Vietnam).

In addition to curricular and pedagogical changes, some countries are considering changes in school structures. For example, the Philippines is planning to increase the number of years of compulsory schooling by one year, Vietnam is increasing the number of hours in the school day, and Japan is reducing the number of school days by eliminating instruction on Saturdays.

Curriculum Development Processes

Degree of centralization of curriculum development

The role of curriculum development is considered to be of such importance for national and state policies that no government in the participating countries has abrogated its overall responsibility for this task.

In most countries, curriculum development is generally centralized, but at the implementation level there is a varying degree of autonomy of local authorities, schools and teachers.

China, Fiji, France, Germany (Bavaria), Indonesia, Japan, Korea, Lao PDR, Malaysia, the Philippines, Sri Lanka, Thailand, and Uzbekistan all report highly centralized curriculum development processes.

TABLE 1. Curriculum Policies: An International Comparative Study of School Curriculums						
Country	*Subject change*	*National curriculum standards*	*Balance between compulsory and electives*	*School structures*	*Assessment*	*Monitoring*
Australia	Asian languages, technology, civics.	Nationally developed curriculum frameworks.	8 compulsory subject areas defined.	Vocational education has changed Yr. 11 and 12 school structures.	Certificate assessments includes internal and external assessments.	Introduction of literacy and numeracy testing.
China	Computer technology, integration of social studies.	Curriculum plan for 9-year compulsory education.	Reduction of some compulsory and addition of more electives and activities.	No great change.	Emphasis is on testing abilities.	Three levels of management: central, local, and school.
Fiji	Computer technology, vernacular languages now examinable. Conversational and cross-cultural foreign language taught in primary education.	Primary framework revised for grades 1-8. Secondary framework undergoing revision.	Class 8 exam change to include environment and moral values studies.	No change.	Internal assessment conducted in Form 7 subjects.	Standardized test in classes 3 and 4 in literacy and numeracy.
France	NTIC	National Curriculum Standards and National Curriculum Council.	Electives in classes 8 and 9.	Unified lower secondary school (6-9) has two types of upper secondary schools: general and technology (10-12) vocational.	External examinations in classes 9 and 12. Internal assessments conducted.	Literacy and numeracy testing at the beginning of classes 3 and 6. French, mathematics, foreign language, history, geography testing at the beginning of class 10.
Germany (Bavaria)	Foreign language and IT in primary and secondary education. Integrated social and science studies in one type of secondary school.	Set curriculums for all schools.	Reduction of electives in upper secondary (focus core curriculum).	No change.	Final examinations held for all types of school.	No change.
India	National core curriculum in 8 subject areas. Computer technology and communicative foreign language learning at secondary level.	National core curriculum up to secondary level. Secondary equal to O level and Senior equal to A level.	Emphasis on more electives at senior secondary level in new subjects and vocational education.	Development of parallel structure for vocational courses, and at secondary and senior secondary level.	Continuous and comprehensive evaluation held with external assessment at grades 10 and 12.	Attempts for national standards tests at secondary level since 1990s.
Indonesia	Civic education. Science technology. Computer science. Local curriculum.	Minimum national standards.	10 compulsory subjects.	No change.	National assessments in 7 subjects.	No change.
Japan	Integration of social studies and science in grades 1 and 2; Life Environmental Studies and Social Studies divided into Geography and History, and Civics in upper secondary.	Course of study.	Increased number of elective subjects and reduction in compulsory subjects.	Comprehensive course introduced.	National assessments conducted.	Introduction of school evaluation by local educational authorities. Local educational authorities evaluation by Ministry of Education.

TABLE 1. Curriculum Policies: An International Comparative Study of School Curriculum *(continuation)*

Country	Subject change	National curriculum standards	Balance between compulsory and electives	School structures	Assessment	Monitoring
Lao PDR	Primary: "The world around us" (integrated class). Lower secondary: biology, physics, and chemistry integrated into natural science. Upper secondary: politics replaced by civics. All levels: HIV/AIDS and drug abuse prevention.	Move from teacher centered to student centered.	No change.	No change.	Various assessment instruments developed for use by teachers.	Positions of pedagogical adviser and supervisor created.
Malaysia	Primary: science, living skills, and local studies. Secondary: living skills-invention, information technology.	Move from student's profile to national standards.	More electives offered at upper secondary level.	5-7 years allotted for primary level.	Growing emphasis on school-based assessment. External exams for certain levels.	Empowerment to state/district/school authority to monitor curriculum implementation.
New Zealand	Technology, essential skills identified and integrated into the curriculum.	Development of curriculum statements based on the NZ Curriculum Framework and on a National Qualifications Framework.	7 compulsory subject areas defined.	Flexibility introduced into school structures. Move to self-managing schools. Establishment of Kura Kaupapa Maori (Maori immersion schooling).	Move to school-based assessments and inclusion of internal assessment for qualifications.	NEMP Project (benchmarks, to be examined every four years). National exams held in Years 11 and 13.
Philippines	Introduction of values education as a separate subject as well as integrated in other subject areas. Introduction of technology into science and vocational education. Focus on critical thinking, problem solving, practical work.	Identified desired learning competencies in all areas.	No system of electives.	No change.	Year-of-level national examinations (NEAT/NSAT) are school-based.	Move towards decentralization.
Republic of Korea	English introduced at elementary level (from year 3). Optional courses for elementary and secondary schools. Technology and home economics become compulsory for both boys and girls at secondary level. Computer science and environmental studies introduced as optional courses at secondary level.	Revision of national curriculum in 1992, giving more flexibility to local and school level.	More elective courses at upper secondary level.	No change.	More emphasis placed on essay writing at elementary and secondary levels.	School evaluation introduced by local education authorities. Local educational authority evaluation conducted by Ministry of Education.

TABLE 1. Curriculum Policies: An International Comparative Study of School Curriculum *(continuation)*						
Country	*Subject change*	*National curriculum standards*	*Balance between compulsory and electives*	*School structures*	*Assessment*	*Monitoring*
Sri Lanka	College level: business statistics and math for non-math students; introduced new topics in pure mathematics and applied mathematics, geography, history, political science, logic and **st. [Jeff-?]** methods, Greek civilization. Primary level: environment studies. Integration, activity-based beginning science	Move from teacher-oriented to competency-based.	No change.	253 national schools introduced. (Administration by central ministry)	Continuous assessments introduced.	No change.
Thailand	Repackaging subjects in physical education and hygiene with human and self-development.	Set national standards in all learning areas for basic education outcomes. Set benchmarks of every 3-year level.	Balancing between compulsory and elective subjects in terms of time constraints. Balance in bipolar development standards (e.g. self vs. society).	School and community design their school structure and curriculum based on standards and readiness of school.	School-based assessment for every year in primary and every quarter in secondary by alternate year.	School has self-audit through school charter and school quality control. School quality assured by accountability assessment of administrative authorities and other agencies.
United States	No change in national level.	Move from syllabus approach to curriculum framework.	No change in national level.	No change in national level.	No change in national level.	No change in national level.
Uzbekistan	Technology; values; business; environmental studies.	National curriculum standards in grades 1-9.	Emphasis on compulsory subjects.	National schools introduced.	Continuous and comprehensive assessment.	Ministry of Education.
Vietnam	Integrated natural and social sciences in grades 1-3.	New primary curriculum. National curriculum standards in grades 1-9.	Nine compulsory subjects in primary school. Some elective subjects in primary and secondary.	No change.	No change.	No change.

In some countries there is a varying possibility for local authorities, schools, and teachers to influence curriculum development at the implementation level. For example, local content is allowed in Indonesia (20%), Lao PDR (10%), and Vietnam (15%). In other countries such as Australia and New Zealand, teachers develop their own content within centrally developed curriculum frameworks.

Initiation of curriculum development

Involvement of a wide range of agencies and stakeholders is regarded as an important factor to assist government or its nominee to develop an effective curriculum. Although final decisions are generally made at the government level, stakeholders are consulted before and during the development process. The consul-

tation takes a variety of forms, including the use of councils of experts to directly develop policy, as in Japan and Bavaria; systematic input from teachers on policy development, trialing, and reviewing curriculum as in France, Australia, New Zealand, and the Philippines; and advice from parents and communities, as in Australia, Bavaria, Indonesia, New Zealand, and Vietnam. Other stakeholders involved in curriculum development include foreign consultants, research institutes, university staff, and welfare agencies.

The involvement of representatives from industry and business in consultation on curriculum issues is a distinctive feature in a range of countries, including Australia, Fiji, Germany, Indonesia, New Zealand, the Philippines, and the United States, particularly in relation to vocational education.

TABLE 2. Initiation of Curriculum Development		
Country	*Agency initiating curriculum development*	*Agencies consulted*
Australia	Education Departments (state and federal) Curriculum Corporation	Schools, teachers, parents, industry, business, other government departments, teacher unions, universities, school communities
China	State Education Ministry	Professional editors, colleges and universities, teachers, students parents, other professions
Fiji	Curriculum Development Unit, Ministry of Education	Local government, teachers unions, research institutions, employers, industries, nongovernmental agencies, teachers
France	Ministry of Education; National Curriculum Council	National educational organizations, teachers
Germany (Bavaria)	Ministry of Education	State Advisory School Council, State Institute for School Education (can propose revision and develop curriculum)
India	National Council of Educational Research and Training, State Councils for Education, Research and Training and State Boards of Secondary Education	School boards, official associations of teachers, individual teachers (no involvement of parents and students)
Indonesia	Ministry of Education	Senior officials from relevant institutions, subject specialists, universities and institutes, senior subject teachers, headmasters, representatives from the National Education Advisory Board, private companies
Japan	Ministry of Education	Central Council for Education (broad aims), Curriculum Council (curriculum guidelines), committee for making the course of study
Lao PDR	National Research Institute for Educational Science	Some departments within MOE (e.g., Department of General Education, Department of Teacher Training), representatives of trade unions, women's unions and youth unions, Party Central Committee for Ideological Education, Teacher Development Center, National University

TABLE 2. Initiation of Curriculum Development *(continuation)*		
Country	*Agency initiating curriculum development*	*Agencies consulted*
Malaysia	Curriculum Development Center	Academics, teachers' unions, parents, professional bodies, and nongovernmental agencies
New Zealand	Ministry of Education	Government departments, teachers, sector groups and organizations, teachers' unions, parents, community, international and national experts, business and industry groups
Philippines	Bureaus of Elementary and Secondary Education	Professional stakeholders, parents, teachers, students
Republic of Korea	Ministry of Education (sometimes by special commission)	Research institutes (e.g., KEDI and KICE, involved in developing draft version), various groups (e.g., teachers, parents, students, industry, academic associations)
Sri Lanka	National Institute of Education	Foreign consultants (Asian Development Bank, World Bank) and local consultants, university staff members, Ministry of Education and Higher Education, Provincial Education Authorities, master teachers, experienced senior teachers
Thailand	Department of Curriculum and Instruction Development; Ministry of Education	Department of Curriculum Development, local agencies, teachers, community, welfare agencies
United States (New York)	State Education Department (Board of Regents)	All stakeholders
Uzbekistan	People's Education Ministry, Ministry of Higher Education	Research institutions
Vietnam	National Institute for Education Sciences	National Education Council, international and national experts, teachers, parents

*Accommodation of group opinions
in curriculum decision making*

The following table describes the process of incorporating stakeholder opinion in curriculum decision making.

Whether at the formulation or review stage, education stakeholders are consulted on curriculum development in all participating countries. In New York state and Bavaria, consultation is required by law where the change is significant.

The purpose of consultation varies across countries, from providing information to the public, to seeking genuine feedback and com-ment. New Zealand has established a legal definition of public consultation to ensure it is seriously considered by policymakers.

The most common methods of consultation include meetings of formal representative committees, either formed for the ongoing purpose of consultation or brought together to review the specific initiative. In addition, seminars, workshops, public forums, and other forms of structured discussion are used. Questionnaires to schools, research and school piloting of draft proposals are also used. In some countries, including Australia, Japan, and the United States, the Internet is starting to be used to publish draft consultation documents.

TABLE 3. Input of Stakeholders in Curriculum Development	
Country	*Processes*
Australia	Consulting with committees representing stakeholder groups; consulting with media (press); consulting at school level with parents, community; surveying schools to review policy, school pilots.
China	Examining policy, using academics.
Fiji	Using consultation committees (including teacher unions, principals and head teachers, university and research representatives; no parents); using pilot school committees; surveying schools.
France	Consulting teachers on projects.
Germany (Bavaria)	Using state advisory councils (including teachers; parents; students; representatives of industry, commerce, and the church) that make recommendations to minister and are responsible to parliament.
India	Encouraging expression of opinion by all segments of society.
Indonesia	Using committees of principals, parents, teachers, students, industry representatives, and stakeholders.
Japan	Publishing of draft papers, collecting opinions, conducting hearings of parents and specialists, before submission of final report by the council.
Korea	Using groups, but resorting to government decision when groups don't and can't agree.
Lao PDR	Developing drafts and questionnaires, holding stakeholder meetings, adopting final curriculum document by National Institute for Educational Sciences. Ministerial commission makes final decision.
Malaysia	Participating in curriculum design; adopting resolutions and suggestions from seminars, conferences, and workshops; issuing memorandums.
New Zealand	Developing policy specifications for writing curriculum, acceptance of tenders or contract for writing curriculum by Ministry of Education. Consultation with various groups, provision of draft to ministry by contractors. Seeking input, development of final draft, approval and signing by minister.
Philippines	Conduct of conferences, seminars, and workshops.
Sri Lanka	Interview of university personnel and other professionals, teachers, parents, students; conduct of pilot process to get public's views; use of public media programs (for education and dissemination).
Thailand	Participation in national curriculum framework development through hearings and seminars; school board of stakeholders approves school charters and school curriculum.
United States (New York)	Legally requiring public comment in some cases, from curriculum development committees (of subject specialists, SED staff, university researchers, teachers, business) for example; developing draft documents; holding public forums; disseminating the draft; drafting final document.
Uzbekistan	Experimenting with trial policies in good schools; involving students and researchers.
Vietnam	Establishing curriculum development committee, preparing drafts, organizing workshops to review drafts, conducting trials in some provinces, establishing science council with minister's approval.

The length of time for consultation varies, depending on the country and the extent of the change. Time and money appear to be constraints on thorough consultation.

Curriculum approaches to promote unity and cultural diversity

The following table details how each country promotes unity and cultural diversity through its curriculum.

There is a general consensus that cultural diversity and national unity are promoted through the curriculum with varying emphasis, depending on the countries concerned.

Culturally homogeneous countries such as Korea and Japan emphasize national unity, particularly through a centrally developed common curriculum and examination system. Cultural understanding in these countries is supported through tolerance and moral education programs and developing international understanding. Encouraging cultural diversity is interpreted as emphasizing local or provincial differences.

In countries with diverse ethnic groups, including Australia, India, Indonesia, Malaysia, New Zealand, and Sri Lanka, stress is equally placed on the development of cultural diversity and national unity. This aim is generally supported through the following:

- curriculum or topic offerings, commonly including civics, social studies, history, and moral education courses (Australia, Lao PDR, New Zealand Philippines);
- use of ethnic languages as a medium for instruction (Fiji, Indonesia [primary school], Malaysia, New Zealand, Sri Lanka, and Uzbekistan);
- bilingual programs and migrant languages (Australia and Germany); and
- foreign language instruction including cultural studies.

In some cases where cultural diversity is supported, local community groups are involved in curriculum development, e.g, Maori groups in New Zealand, and aboriginal and Torres Strait Islanders in Australia.

Provision for children with special needs

In the development of curriculum policies, all countries make varying provisions for students with special needs through modification of the curriculum, special schools, support services, and improving access to mainstream education.

Most countries provide for students with physical disabilities through special schools. In nearly all countries, efforts are made to integrate these students into mainstream education where possible.

While most countries modify their curriculum and provide additional support for low achievers, only a few countries have specific curriculum policies for high achievers and gifted students. These include Australia, China, Germany, Indonesia, the Philippines, the United States, and Vietnam.

Except for Australia, China, Japan, Lao PDR, New Zealand, and the United States (New York state), there is little consideration of the issue of gender in the curriculum. Where it is addressed, the trend is to increase girls' participation in mainstream education.

In many countries, ethnicity and low socio-economic background are addressed through additional support services with the aim of improving access and participation to mainstream education.

Curriculum Organization

Every country needs to make decisions regarding the overall approach to curriculum design as well as to the subject areas.

Basic Approaches to Curriculum Design

Two main approaches to curriculum design reported by the participating countries are the

TABLE 4. National Unity and Cultural Diversity Curriculum

	Curriculum focus	*Languages*	*Teaching materials*	*Community groups*
Australia	Civics and social studies.	Languages of migrant groups.	Civics, social studies, and language materials reflecting multicultural community.	Variety of ethnic groups and aboriginal and Torres Strait Islanders included.
China	State arranged, with a few locally arranged curriculums.	Chinese and ethnic languages.	Bilingual teaching materials and local editing of materials.	Inclusion of community groups in developing policies.
Fiji	English and other languages.	Various ethnic languages.	Locally produced material and cassette tapes.	
France	Unity promoted by national curriculum standards.	Regional languages as options with exam subjects.		Participation of teachers in formulating curriculum.
Germany (Bavaria)	Policy applies to all schools and unifies entitlement.	Various migrant languages to preserve identity. Cross-cultural and conversational language instruction.	Those that illustrate how diversity enriches culture and life.	
India	Local curriculums appropriate to needs.	Hindi as the official language; English as the link language (second foreign language). Three-language formula (learning of one more regional, foreign, or ancient language).	Provided by NCERT and SCERT.	
Indonesia	National development needs. Science, technology, arts, environment, civic education, religious education, reading, writing, and mathematics.	Indonesian languages. English, French, German, encouraged.	Pancasila (five principles) education. Introductory science and technology, geography, national and world history, handicrafts and arts, drawing, local content curriculum.	
Japan	National standards to introduce and reinforce moral and civic education. Emphasis on international understanding in moral education.	Japanese as official language. French, German, Korean etc. encouraged.	Local studies.	Local co-curricular activities.
Lao PDR	Topics in history, civics, and Lao language.	Lao to non-Lao-speaking taught to children.	Concentrated "language encounter" materials for local studies.	Special schools for ethnic minorities in each province.
Malaysia	Single medium of instruction Core subjects for all.	National language as medium of instruction. Ethnic language for school instruction at primary level.		National types. Tamil and Chinese primary schools.
New Zealand	Social studies curriculum. Curriculum statements developed in Te Reo Maori.	Community and international languages.	Materials reflecting the multi-cultural community. Resource support for teaching languages as an option.	Maori language schools; Involvement of Pacific islands and other ethnic communities.

TABLE 4. National Unity and Cultural Diversity Curriculum *(continuation)*				
	Curriculum focus	*Languages*	*Teaching materials*	*Community groups*
Philippines	Indigenization/localization of the curriculum.	Local languages.	Local content and context.	Indigeneous cultural communities.
Republic of Korea	National curriculum provides common features, but diversity through modification is also emphasized. Moral education and history are regarded as the foundation for unity.		Separate books for provincial studies.	
Sri Lanka	One common curriculum and common examination. Values and morals education integrated into religious education.	Sinhala as first language and Tamil as second, or Tamil as first language and Sinhala as second, English compulsory, other foreign languages optional.	In both Sinhala and Tamil.	Involvement of all community groups.
Thailand	New proposed curriculum design: national standards for basic education outcomes and benchmarks every three years for local schools to develop curriculum	Unified national language. Local language (dialect) taught to study local wisdom, foreign language as optional subject.	Teachers' decision.	Involved in approval of school charter and curriculum.
United States	Specific topics in citizenship. State and national history and culture emphasized in social studies and English. Diversity integrated in all subjects.	English as language of instruction. Bilingual and second language instruction provided.		
Uzbekistan		Russian language for inter-ethnic dialogue. Instruction in ethnic language groups.	Materials on local heritage, history, and culture.	
Vietnam	Moral and civic education, mathematics, nature and science, Vietnamese language.	Bilingual program for ethnic areas.	Materials from integrated subjects.	

content or topic-based approach and the outcome-based approach.

The content or topic-based approach lists the topics or themes of the subject area or discipline. The listing is generally broad and includes the aims and objectives for the subject area.

The outcome-based approach to curriculum design defines the outcomes, usually as abilities or skills, that students are expected to achieve by the end of the period of study or period of schooling for the specific subject.

The general trend is toward the combined use of content-based and outcome-based approaches to curriculum design. For example, China, France, Germany, Japan, Korea, Lao PDR, Malaysia, the Philippines, and the United States report that they have designed their curriculum using varying combinations of the con-

tent and outcome-based approaches. Australia, New Zealand, and Thailand predominantly use the outcome-based approach, while Fiji, Indonesia, and Vietnam predominantly use the content-based approach. India and Sri Lanka are moving from a content- to an outcome-based approach, while Uzbekistan reports a move from a purely outcome-based model to a combination of both approaches.

Other details of the curriculum organization of the different countries are shown in the table below.

TABLE 5. Approaches to Curriculum Design	
Country	*Approach*
Australia	2
China	1
Fiji	1
France	1®3, 1®2(TVE)
Germany (Bavaria)	3
India	1® 2
Indonesia	1
Japan	1
Lao PDR	3
Malaysia	3
New Zealand	2
Philippines	3
Republic of Korea	3, 1-2
Sri Lanka	1® 2
Thailand	2
United States (New York state)	3
Uzbekistan	2®3(TVE)
Vietnam	1® 3,

Legend: 1 – content based; 2 – outcome based; 3 – combination TVE – Technical/Vocational education.

Curriculum interpretation by teachers

Teachers in Australia interpret their curriculum frameworks with some variations across the states and territories and across subject areas. Teachers in Korea, India, and Malaysia are moving from implementing the curriculum as prescribed to some degree of local interpretation. In China, Fiji, Indonesia, Lao PDR, and Uzbekistan, teachers must implement the curriculum as it is prescribed. The curriculum of all the other countries is interpreted by the teachers and implemented with some local variations.

The general trend is toward the setting of national guidelines with a certain degree of flexibility for interpretation at the local (regional, state, district, and school) level.

Curriculum structure

The participating countries offer a variety of courses or subjects in both the primary and secondary level. These subjects include the national language and any regional or local language, foreign languages, science, technology, mathematics, social studies, humanities, vocational education, creative and performing arts, health, and physical education. Some related areas are further illustrated under each of the subject denomination, as shown below.

Curriculum structure at the primary level
Analysis of the course offerings at the primary level in all the participating countries, shows that while the above content areas are generally covered, time allotments and the nature of the content vary across each subject area. Foreign languages are offered by Australia, China, France, Germany, Malaysia, New Zealand, the Philippines, and Sri Lanka on either a mandatory or optional basis. Six countries—Fiji, Japan, India, Indonesia, Lao PDR, and Uzbekistan—do not offer any foreign language at this level.

A major aim of all countries at the primary level of education is functional literacy and numeracy. The national language and mathematics are offered by all the participating countries.

Multilingual and multicultural countries provide options to address language and cultural needs of their students.

TABLE 6. Subjects in the Curriculum per Topic		
Social studies	History	Political science
	Civics	Geography
	Economics	
Health and physical education	Physical education	Health educaton
	Games and sports	Personal management*
Humanities	Ethics/Religion	
	Moral/Values education	
	Classical and cultural background	
Creative and performing arts	Art	Drama
	Music and dance	
Technical vocational	Pre-vocational	Home economics
	Agricultural science	Business management
	Industrial/Practical arts	Services education
Technology	Computer	Communications
	Electronics	Mechanics

*Personal management includes management of time, life skills, consumer education, safety education, personal hygiene, and etiquette.

Curriculum structure at the lower secondary level

Analysis of the curriculum structure at the lower secondary level shows that foreign language subjects are offered by all the participating countries, except Fiji. National language and mathematics courses are offered in all countries.

In many countries, the study of the Humanities is integrated into other subjects. In China, India, and Thailand, technology is an emerging content area in science, while in Australia and New Zealand they are a new distinct subject.

Curriculum structure at the upper secondary level

At the upper secondary level, subjects include the national language and any regional or local languages, foreign languages, science, technology, mathematics, social studies, humanities, creative and performing arts, health, and physical education. There is an increasing trend toward subject diversification and the integration of technical education into general education.

In addition, technical/vocational education in all countries prepares students for the world of work or for higher education. There is an increasing trend for bridges and pathways between academic and vocational streams.

At this level, the subject offerings are more specialized, more detailed, and more specific, and there are more options across the subject areas.

At least two language courses, including the national and a foreign language, are part of the curricular offerings for all countries. Some countries, (Korea, France, Germany, Australia, and Uzbekistan) offer a third language either on a compulsory or optional basis.

Curriculum integration

Integration can be viewed as the combination of knowledge of several subjects with similar features into one subject area, usually around themes. An example is values education, where values can be incorporated across subject areas, although values education may also be offered as a separate subject area.

In Malaysia, integration is seen as the incorporation of key aspects into the prescribed curriculum. On the other hand, in the United

States, integration is the approach used to improve understanding of academic content.

Integration of specific curriculum areas

In the majority of participating countries, values education and environmental education are integrated into existing subjects of the curriculum.

While some countries offer values education, education for the world of work, science and technology, information and communication technology, health education, and environmental education as separate subjects, they are often also integrated into other subject areas to strengthen their emphasis.

Curriculum coverage

Issues relating to curriculum coverage

In designing the curriculum, countries need to make decisions about the breadth and depth of subject content and approaches. Some countries are concerned that the general education provided in their school system requires students to cover too many subject areas. There are also pressures to add new subject areas such as environmental studies, international understanding, information technology, etc. Other countries are concerned about the number of subjects that students are required to study either because of the pressure this puts on students or because it means that subjects are approached in a way that does not lead to a depth

TABLE 7. Integration of Specific Curriculum Areas											
Themes/Areas											
Country	*Values/ International understanding/moral/ ethical issues*		*Education for the world of work*		*Foreign languages*		*Computer information technology*		*Health education*		*Environmental education*	
Australia	I	P/S	I	S	D	S	I	S	D	P/S	I/D	P/S
China	I	P/S	I	S	D	S	I	S	D	P/S	I	P/S
Fiji	I/D	P/S	I	S	D	P/S	D	S	D/I	P/S	I	P/S
France	I	P/S	I	S	I/D	P/S	I	P/S	I	P/S	I	P/S
Germany (Bavaria)	I		I		D	S	I/D	P/S	I		I	
India	I/D	P/S	D	P/S	D (6-10)	P/S	D/P(1-10)	P/S	I/D	P/S	I	P/S
Indonesia	I	P/S	I	S	I	S	I	S	I	P/S	I	P/S
Japan	I	P/S	I	S	D	S	I	S	I	P/S	I	P/S
Lao PDR	I	P/S	D	P/S	D	S	–	–	D	P/S	D	P/S
Malaysia	I/D	P/S	I	S	D	P/S	I/D	P/S	I/D	P/S	I	P/S
New Zealand	I	P/S	I	P/S	D	S	I/D	P/S	D	P/SS	I	P/S
Philippines	I/D	P/S	D	P/S	D	P/S	I	S	I	P/S	I	P/S
Republic of Korea	I/D	P/S	I	P/S	D	P/S	I/D	P/S	I/D	P/S	I/D	S
Sri Lanka	I	E/S	I	S	S	S	I	US	S	E/S	I	E/S
Thailand	I	P/S	I	P/S	D	P/S	I	P/S	I	P/S	I	P/S
United States	I	P/S	D	S	D	P/S	I/D	P/S	D	P/S	I	P/S
Uzbekistan	I	P/S	I/D	P/U	D	LS	D	LS	I	P/S	I	P/S
Vietnam	I/D	P/S	I	S	D	S	–	–	D	P/S	I	P/S

Legend: I – Integrated; P – Primary; D – Distinct; S – Secondary.

of understanding or to the fostering of creative and critical thinking.

Overcrowding of the curriculum is caused by schools being asked to take responsibility for a wide range of social issues that were once viewed as the responsibility of families or the community as a whole, such as appropriate behavior and personal etiquette.

Actions to address the issues relating to curriculum coverage

Countries identify a number of actions to address issues relating to curriculum coverage, including a continuing review of the existing content so that, where possible, integration can be undertaken rather than new subjects created.

Integration need not be limited to the curricular content but can also include co-curricular activities and optional or elective subjects, both at the primary and secondary levels. For other themes that are seasonal or periodic, resource materials can be provided in the library for general information and reading.

The use of new or appropriate technology is suggested as another means to address the overcrowded curriculum. Where distance education or some other alternative delivery system is possible, content can be learned through these means. Multimedia resources are increasingly becoming more sophisticated, and learning may not be confined within the classroom.

Where the overcrowded curriculum results from an inability of curriculum developers to determine the basic knowledge and skills that should go into a subject area, restructuring and prioritization of basic content, deemed relevant, necessary, and appropriate at each level and in each subject area could be of assistance. Benchmarks could also be established so that there is basis for monitoring and evaluation.

The perennial issue of pressure from government or groups may be transformed into a healthy working relationship through closer collaboration between competing interest groups. The pressures from these groups need not be accommodated totally. A balance can

be struck between political, social, scientific, and academic requirements.

Teachers plays a very important role in delivering the curriculum. Resistance sometimes exists because of their lack of involvement in planning and the lack of training and orientation prior to curriculum implementation. This may be alleviated by regular or periodic upgrading of teacher competencies through continuing in-service training.

Continuing research, monitoring, and evaluation was also proposed, so that feedback and reports of curriculum reviews could become the basis for curriculum revision or development.

Curriculum Implementation

Unless there are effective strategies for the implementation of curriculum policies, an education system does not derive the full benefits that should accrue from the school curriculum. The questions in this section of the questionnaire sought responses to key aspects which are crucial for curriculum implementation: teacher development; resource provision; classroom strategies; and student assessment.

Teacher Professional Development

A curriculum, no matter how good, will simply remain a curriculum on paper if it is not implemented properly. The teacher and the instructional leaders in the school are the key to the implementation of that curriculum. The questions in this section of the questionnaire sought to find out how teachers in the various countries are prepared professionally for teaching, and the programmes available for their continuous professional development.

Pre-service teacher development

Requirements for teacher education qualification

All the countries reported requirements for qualification or admission into the Teacher

Training Institutions or any form of pre-service teacher education.

Framework for pre-service teacher education

The following table shows the description of national frameworks for pre-service teacher education.

All countries or states have some form of curriculum, guidelines, or frameworks for pre-service teacher education.

Programs for pre-service teacher development
See table.

Components of the pre-service teacher education programs

Pre-service teacher education programs in various countries commonly include four main components: educational methods/teaching methods; professional education/basic education; subject courses/curriculum studies; and teaching practice/field experience. Additional components may include co-curricular activities, self-enrichment, and languages. Topics or subjects like introduction to educational systems of other countries (France), languages (Sri Lanka), emerging Indian society (India) and morality and career education (Thailand).

TABLE 8. Description of National Frameworks

Country	Description of national frameworks for pre-service teacher education
Australia	National Standards and Guidelines for Initial Teacher Education.
China	
Fiji	National Curriculum Framework.
France	National guidelines for teacher training university colleges.
Germany (Bavaria)	State Law on Teacher Education; State Examination Regulations.
India	There is no prescribed national curriculum for pre-service teacher education. However, there are guidelines and a framework for pre-service teacher education developed by National Council of Teacher Education.
Indonesia	National curriculum for training teachers of each level of education.
Japan	National guidelines.
Lao P.D.R.	Various teacher training curriculums adopted in 1993 by the Prime Minister Decree on State Education Personnel.
Malaysia	Framework prescribed by the Teacher Education Division of the Ministry of Education and the university.
New Zealand	Approval of courses through internal quality assurance and governmental agencies, national professional standards established for beginning teachers (used by individual institutions) as a basis for course development.
Philippines	Policies/guidelines (Policy Standards for Teacher Education) provided by the Commission on Higher Education
Republic of Korea	
Sri Lanka	Prescribed curriculum for diploma in teaching for colleges of education.
Thailand	
United States (New York state)	General guidelines. Curriculums and syllabuses developed by institutions. State-approved programs for institution.
Uzbekistan	State-approved curriculum of each institution.
Vietnam	National curriculum for training teachers of each level of education.

TABLE 9. Title/Length of Program for Pre-service Development				
Country	*Level of teacher*	*Title/Length of program*	*Type of institution*	*Minimum entry requirement*
Australia	Primary Lower secondary Upper aecondary	4-year degree	University	Year 12 (secondary)
China	Primary Lower secondary Upper secondary	Primary school teachers' trial post regulation (3-4 years) Secondary school teachers' trial post regulation (2-3 years) Secondary school teachers' trial post regulation (4 years)	Secondary normal school Universities and colleges Universities and colleges	Junior secondary school graduates Senior secondary school graduates Senior secondary school graduates
Fiji	Primary Lower secondary Upper secondary	2-year teacher's certificate 2-year diploma in education 4-year bachelor of education (PGCE—postgraduate certificate of education)	Teachers' college Teachers' college University of the South Pacific	Pass in Form 6 (in practice, Form 7) Pass in Form 7 Pass in Form 7
France	Primary Lower secondary Upper secondary	3 + 1 + 1 3 + 1 + 1 3 + 1 + 1 4 + 1 + 1	University + Institute Universitaire pour la Formation des Mai(circ)tres (IUFM) + IUFM University + Institute Universitaire pour la Formation des Mai(circ)tres (IUFM) +IUFM University + Institute Universitaire pour la Formation des Mai(circ)tres (IUFM) +IUFM	Baccalaureate Baccalaureate Baccalaureate
Germany	Primary Lower secondary Upper secondary	5 years (3 + 2) 5 years (3 + 2) 6 years (4 + 2)	University + Seminar University + Seminar University + Seminar	Abitur (Gymnasium leaving certificate) Abitur (Gymnasium leaving certificate) Abitur (Gymnasium leaving certificate)
India	Primary Lower secondary Upper secondary	2 years 1 year 1 year	Teacher training institute University University	Senior secondary Graduate (3 years) Postgraduate (2 years)
Indonesia	Primary Lower secondary Upper secondary	D2 (2 years) D3 (3 years) S1 (4 years)	Higher education Higher education Higher education	12 year (secondary school) 12 year (secondary school) 12 year (secondary school)
Japan	Primary Lower secondary Upper secondary	Teachers' certificate Teachers' certificate Teachers' certificate	Universities and colleges Universities and colleges Universities and colleges	
Lao P.D.R.	Primary Lower secondary Upper secondary	3 years (with 8 years prior) 1 year (with 11 years prior) 3 years 4 years	Teacher training school Teacher college University	Graduate of lower/upper secondary education Graduate of upper secondary Graduate of upper secondary

TABLE 9. Title/Length of Program for Pre-service Development *(continuation)*

Country	Level of teacher	Title/Length of program	Type of institution	Minimum entry requirement
Malaysia	Primary Lower secondary Upper secondary	Diploma in teaching (3 years) Diploma in teaching (1 year) Diploma in teaching (1 year)	Teacher training colleges University University	School certificate Degree Degree
New Zealand	Primary Lower and upper secondary	B.Ed. (teaching) (3 years) B.Ed. (4 years) Diploma of Teaching (2 years) Diploma of Teaching (1 year) Diploma of Teaching (1 year)	University, polytechnic, college of education Polytechnics, college of education University, polytechnic, college of education University, polytechnic, college of education	University entrance or equivalent Partial tertiary qualification and relevant work experience A degree A degree with relevant teaching subjects
Philippines	Primary Lower secondary Upper secondary	Bachelor of elementary education (4 years) Bachelor of secondary education (4 years) Diploma of teaching (1 year)	College of education Teacher education institution College of education Teacher education institution University, polytechnic, college of education	High school graduate High school graduate A degree with relevant teaching subjects
Republic of Korea	Primary Lower secondary Upper secondary	4 years 4 years 4 years	Primary education departments of national universities National or private National or private	
Sri Lanka	Primary Lower secondary Upper secondary	Diploma in teaching (3 years) Diploma in teaching (3 years) B.Ed. (3 years)	Colleges of education Colleges of education Universities	G.C.E. (A/L) G.C.E. (A/L) G.C.E. (A/L)
Thailand	Primary Lower secondary Upper secondary	No (depends on local body-teacher training institution) No (depends on local body-teacher training institution) No (depends on local body-teacher training institution)		High school graduation High school graduation High school graduation
United States (New York state)	Primary (pre-kindergarten, 6) Secondary (7-12)	Length of program not specified, but typically part of a 4-year baccalaureate (recently introduced policy requires master's degree of all newly hired teacher)	Typically, a 4-year post-secondary education institution with a teacher education program approved by and regis-tered with the State Education Department	Varies by institution, but usually at least a high school diploma
Uzbekistan	Primary Lower secondary Upper secondary	Bachelor / 3-4 years Bachelor / 4-5 years Bachelor / 4-5 years	College Institute Institute / University Institute / University	30% out of 226 grades (1998) 30% out of 226 grades (1998) 30% out of 226 grades (1998)

TABLE 9. Title/Length of Program for Pre-service Development *(continuation)*				
Country	*Level of teacher*	*Title/Length of program*	*Type of institution*	*Minimum entry requirement*
Vietnam	Primary	Bachelor of primary education (2 years)	Teacher training college	Graduation from general education (grade 12)
	Lower Secondary	Bachelor of lower sec (3 years)	Teacher training college	Graduation from general education (grade 12)
	Upper Secondary	Bachelor of up sec (4 years)	National teaching university	Graduation from general education (grade 12)

With few exceptions, all countries report having the four components identified in their pre-service teacher training programs.

Processes undertaken by pre-service teacher education

The measures taken in all countries to ensure that pre-service teacher education programmes keep up with changes in school curriculum and other areas of change in education can be categorized into two main groups: (i) change as prescribed by regulation; and (ii) changes initiated by the teacher education institution itself as part of its quality system process.

While some countries regulate changes to pre-service teacher education, others rely on self-regulation of the teacher education institutions themselves. However, there is a range of ways these countries preserve pre-service teacher education standards. Some examples include Germany (Bavaria) where there are state examinations established by the Education Ministry, teacher licenses in the United States, and teacher registration and professional standards for beginning teachers set by the Australia and New Zealand educational authorities. In some cases (Fiji, for example), where the changes are prescribed by regulation, the teacher training education institutions are involved in curriculum change.

In-service teacher development programs

Professional development for teachers

A large number of countries provide compulsory in-service training either for all teachers each year, including Vietnam, Lao PDR, and Sri Lanka. Some countries provide or require in-service training for all teachers over a longer time frame (United States, New York state) and others for promotion to leadership positions (Australia, France, Germany, and Japan) or for relicensing (Philippines, New York state). In addition, there are a wide range of voluntary opportunities for in-service, and a number of countries combine voluntary and compulsory activities.

Compulsory time varies: Lao PDR—80-180 hours per year; New York state—175 hours every five years; Sri Lanka—300 hours prior to next promotion; Vietnam—1 month per year in the summer.

Support for in-service training programs

All countries provide financial support for in-service education.

Methods of improving teaching practice

The most common professional development opportunities available for teachers include enrollment in graduate studies, distance learning, membership in professional groups, subscription to journals and educational magazines, attendance in local and foreign seminar-workshops and conferences, staff meetings, refresher courses, inter-school visits, the use of central curriculum advisors, and observance of peer teaching, including master teachers.

In addition to the more conventional opportunities, a range of methods making use of modern technology is evident. It includes the use of the Internet (Australia, Indonesia, New

TABLE 10. How Changes are Undertaken at Pre-service Teacher Education			
Country	Change as prescribed by regulation	Changes instigated by a teacher education institution	Comment
Australia		X	National Guidelines for Teacher Training specify outcomes, which include familiarity with current educational policy. However, teacher education institutions exercise quality control.
China		X	
Fiji	X		Teacher training institutions involved in curriculum changes.
France	X		
Germany (Bavaria)	X		State examinations for teachers take into account curriculum changes.
India		X	National Council of Teacher Education provides guidelines.
Indonesia	X		
Japan	X		
Malaysia	X		Teaching training colleges involved in curriculum change.
Lao PDR	X		Teacher development center created to develop new curriculum for teacher training institutions.
New Zealand		X	Course approval every 3-5 years by national agency and therefore must reflect current policy changes.
Philippines		X	Changes initiated are decided by institution.
Republic of Korea		X	
Sri Lanka	X		National Institute of Education prepares both school curriculum and pre-service training curriculum.
Thailand			
United States		X	
Uzbekistan		X	Each education division or institution designs curriculum according to state standards.
Vietnam		X	

Zealand, and the United States), and distance learning, teleconferences, TV programs, and satellite TV (Australia, China, Indonesia, the United States, and Vietnam).

Some countries reported a comprehensive approach to professional development at the school level. This often involves teachers working in teams toward agreed common professional development goals.

*Incentives for teachers to participate
in in-service training*
Teachers may participate in in-service training for several reasons, such as to receive a promotion or an increase in salary, to meet relicensing or rectification requirements, and for their own personal or professional benefit.

Teachers as a professional group are actively engaged in professional development in all countries. The main motivating factors and incentives for ongoing participation are professional and personal enrichment and career development and promotion. In some countries, in-service training is required to ensure that teachers are able to upgrade their qualifications (Lao PDR), and maintain their license to teach (Philippines and New York state).

Strategies for in-service training of teachers
All countries recognize the importance of providing central support for the implementation of the curriculum. This support is provided as additional central funding, as teaching and learning resources, and as publications

TABLE 11. Motivation for In-service Training					
Country	*Career development (promotion, salary)*	*Relicensing*	*Professional enrichment*	*Other requirement*	*Comment*
Australia			X		
China	X	X	X		
Fiji	X		X		
France	X		X		Many activities sponsored by education administration and by professional organizations of subject area teachers.
Germany (Bavaria)	X		X		Many activities sponsored by professional organizations (of subject area teachers).
India	X		X		
Indonesia	X		X		
Japan	X		X		
Lao P.D.R.			X	X	
Malaysia	X		X		Move toward in-service as requirement for promotion of teachers.
New Zealand	Not mandatory (but recognized as important by employing boards)		X	X	School-based requirement on teachers by employing boards.
Philippines	X	X	X		
Republic of Korea					Many activities sponsored by professional organizations (of subject area teachers).
Sri Lanka	X		X		
Thailand					Educational administrative bodies organize in-service training programs under their responsibilities by providing funds.
United States (New York)	X	X	X		Relicensing requirement.
Uzbekistan	X		X		
Vietnam	X		X		

to inform teachers, parents, and the community of curriculum changes. In a few countries (Australia, New Zealand, and the United States), information technology is being used to provide curriculum resources and professional development.

Resource Support

Countries are using a diverse range of materials to support the implementation of new curriculums. Material support of various kinds may assist in the provision of information for students, provide a guide to teachers and assist teachers in implementing effective classroom programmes that actively involve the students in learning. This material support may take various forms such as textbooks, videos, computer software, calculators, equipment and apparatus, multimedia, teacher guides, and CD ROMs. The following section was designed to find out the kinds of support materials coun-

tries are using to assist teachers implement curriculum change.

Textbooks

Countries use a variety approaches for the development and supply of textbooks. Table 12 shows how countries develop and distribute textbooks and some comments on textbooks and other teaching/learning resources.

Textbooks are used in most education systems to ensure that all students are able to learn basic curriculum content. Most countries report that a government agency is responsible for the provision or approval of textbooks (Fiji, Indonesia, Lao PDR, and Sri Lanka). In some countries, schools select textbooks published by the private sector (Australia, New Zealand, and the United States), while in others they select textbooks from an approved list (Fiji, Germany, Indonesia, Japan, Malaysia and the Philippines).

Teaching/Learning support materials

There are also other teaching/learning support materials available for schools, including teacher guides, video tapes, computer software, CD-ROMs, etc.

Besides textbooks, almost all countries provide additional teaching and learning resources such as CD-ROMs, videos, workbooks, software, instructional material, supplementary reading material, resource guides, laboratory equipment, and other teaching aids to enhance learning programs.

In all countries, government funds the development of supplementary materials for teachers and students. In many countries, private publishers also produce and sell materials directly to teachers and schools. In some countries, private publishers must have their materials approved. Instances of government collaboration with the private sector are also noted.

Development process of supplementary materials

Teachers are often involved in the development of supplementary materials, whether working for the government or for private companies. In addition, a wide range of individuals, such as university professors, professionals from business and industry, and professional writers may also be involved.

Germany, France, and New Zealand also have dissemination networks of regional and local groups.

Provision of textbooks and other materials

Textbooks and other materials are either provided by the government or purchased by parents. The situation in the participating countries shown in Table 12.

Many countries provide textbooks free of charge. In some countries, students can keep the books at the end of the year, while in others they are only on loan and must be returned (Lao PDR, New Zealand, and the Philippines). Governments generally tend to provide textbooks to children during the years of compulsory schooling, but expect parents to assist in funding textbooks in the upper secondary, noncompulsory years.

Community Support

Extent of community support

Support for curriculum development is provided by parents, the local community, the business community, and nongovernmental organizations (NGOs). In the participating countries, the situation is shown in Table 13.

Most countries report a trend toward encouraging parent-teacher organizations, parents, and community members to contribute to the implementation of curriculum. In some countries, business and NGOs provide additional support for schools (New Zealand, the

TABLE 12. Provision of Textbooks and Other Materials					
Country	*Government provides*	*Free loan*	*Rent*	*Parent purchase*	*Comment*
Australia		Some primary and secondary		Some primary and secondary	
China			T (parents) [sic]	Primary and secondary	
Fiji	Primary		Secondary	Secondary and some primary	Books provided by special projects in 7 & 8 and junior secondary
France		Primary and lower secondary			
Germany (Bavaria)		Primary and secondary			
India	Government school			Private schools	
Indonesia	Primary school (government schools only	Lower and upper secondary		Lower and upper secondary	Depends on school
Japan	Primary and lower secondary			Upper secondary	
Lao PDR		Primary education	Lower secondary	Upper secondary and private schools	
Malaysia		Income-based loan scheme		Monthly income lower than $400 eligible for textbook loan	Monthly income lower than $400, textbooks are free
New Zealand		School loans			
Philippines		Public schools		Private schools	
Republic of Korea	Primary school			Secondary (low cost)	
Sri Lanka	Primary and lower secondary			Upper secondary	(No prescribed textbooks for upper secondary; supplementary materials only)
Thailand					
United States (New York)		All schools			
Uzbekistan				Primary and secondary	
Vietnam		Some primary		Secondary and some primary	

United States, and Uzbekistan). In a few countries, religious groups and alumni associations provide a range of types of assistance.

Classroom Strategies

Strategies to introduce new teaching approaches

Most countries provide in-service training to teachers to encourage the use of new teaching approaches. In addition, there are many other ways for teachers to access professional development of new teaching approaches. These methods include peer group teaching, the training of expert facilitators to work with other teachers, pilot schools demonstrating new approaches, and modeling of these methods in guidebooks, professional development programs, and other media. These opportunities can be provided by the government, teachers' unions, professional organizations, and private enterprises.

TABLE 13. Community Support for Curriculum Development

Country	Parents	Local community	Business community	NGOs	Other
Australia	Involved in school management and school programs	Used as resource	Sometimes develops curriculum materials	Sometimes develop curriculum materials	
China	Involved in school management	Children's Palaces for additional learning experiences; provision of additional equipment in rural areas	Donation to schools	Assistance to develop informal education	
Fiji	PTA management of school	Local government research institutions	Reviews curriculum and supplies materials	Reviewing curricula Assist in nonformal education	Religious bodies (support moral education), parents, leaders
France		Provision of additional equipment	Tax for technical and vocational education purposes		
Germany (Bavaria)	PTAs		Sponsor schools		
India	PTAs	Set up own schools outside of government funding			
Indonesia	PTA	Local government	Private business	Many different groups, depends on district	Religious groups assist in schools; PTA meets 3 times/year)
Japan	PTAs (small role)	Use of local environment as resource			
Lao PDR	Consultations with parent and student associations		Education Foundation For Needy Students		
Malaysia	PTAs	Financial/material support	Scholarships/ material support	Material support	
New Zealand	Consultation; helpers in class; fund-raising; school development committee; PTAs	Sponsor schools; experts provided for class programs; learning experience outside class	Collaboration in resource development; school-industry links; sponsorship; donations	Other ministry resource material; research agency donations	
Philippines	PTAs in each school (provide general support)	Provision of additional help, finance and materials	Provision of additional help, finance, and materials	Provide instructional aids	
Republic of Korea	Parents interested in school operations and management	Revising and enlarging curriculum, materials development			
Sri Lanka	Participate in school development committee	Participate in school development committee	Occasional donations (library books, infrastructure, other resources)	Occasional donations (library books, infrastructure, other resources)	Students and alumni participate in school development committee
Thailand					

TABLE 13. Community Support for Curriculum Development *(continuation)*					
Country	*Parents*	*Local community*	*Business community*	*NGOs*	*Other*
United States (New York)	PTAs	Local school boards manage school	Collaborative projects with school	Grant programs for schools and teachers	Various groups can have power if opposed to curriculum
Uzbekistan				Sponsor competitions and study programs; introduces curriculum materials	Ustoz Republican Foundation
Vietnam	Give comments and financial support to curriculum	Give comments and financial support to curriculum; maintain school buildings			

Issues and concerns about teaching methods

Countries report several major trends in issues and concerns about teaching methods. Most report a shift from teacher-centered instruction to child-centered learning, which involves encouraging problem solving, creative thinking, learning to learn, and activity-based classroom programs. In a few countries, there is a refocus on the balance between learning processes and subject content (Australia, New Zealand, and the United States).

School-based Student Assessment

The key issue for effective implementation of the curriculum involves students and their learning assessment at the school level. Countries use a variety of strategies to assess student learning. School-based assessment provides feedback to teachers with respect to the effectiveness of their teaching and provides students and parents with essential information about student progress.

The following table shows the methods of assessing student performance in the elementary, and lower and upper secondary school levels. Also included are the purposes or uses of the results of assessment and the methods of reporting the assessment.

Developments in assessment

At the elementary level, the most common ways of collecting data on student assessment are the paper-and-pencil tests, practical work, and teachers' observations. The situation is almost the same at the lower secondary level with the introduction of laboratory work, authentic assessment (Thailand), including project specifics and portfolios, and school-based assessment for specific year levels in Sri Lanka.

At the upper secondary level, the trend is a shift from written tests to more performance tests across the subject areas. In France and Uzbekistan, student assessment includes projects in professional, technical, and vocational education.

Main purposes of assessment at the school level

School-based assessments are used to diagnose strengths and weaknesses of students, in which case, diagnostic tests are administered at the beginning of the school year or a year level. Assessments are also used to determine student performance and progress in school, most of the time leading to promotion or admission to the next grade/year level. Furthermore, assessments are used to report the child's progress in school to parents. The evaluation

Country	Elementary level	Secondary level		Purposes/Uses	Methods of reporting
		Lower	Upper		
Australia	Structured observation; written and standardized test	Structured observation; written and standardized test	Structured observation; written and standardized test	Report student progress; curriculum development	Percentage and letter grading; checklist of criteria; descriptive assessment
China	Paper-and-pencil tests; observations; interviews; portfolios	Paper-and-pencil tests; observations; interviews; portfolios	Paper-and-pencil tests; observations; interviews; portfolios	Diagnosis; selection of contestants; determination quality of instruction; examination of student progress; deciding professional direction	Comments; behavior marks; percentage; place in competition; grade
Fiji	Paper and pencil tests; project works	Paper and pencil tests; project works	Paper and pencil tests; project works, practical and laboratory work	Evaluate student performance; for promotion purposes; prepare for national and external examinations	Percentage
France	Paper-and-pencil tests; portfolio; tests	Paper-and-pencil tests; portfolio; tests; laboratory work	Paper-and-pencil tests; portfolio; tests; laboratory work; projects in TVE	Diagnosis; monitor student progress; decision for promotion	Grading and comments on achievement
Germany (Bavaria)	Oral/written tests	Oral/written tests	Oral/written tests; point-graded system	Diagnosis; assessment for promotion; reporting to parents	Verbal certification for grades 1-2; written plus point-grades in upper secondary
India	Continuous comprehensive evaluation paper-and-pencil tests; projects and practical work; school based	Internal reporting; external examination	Internal reporting; external examination	Monitor learning achievements; and effectiveness of instruction	Progress report cards. Observations (elementary); marks (secondary)
Indonesia	Paper-and-pencil tests; performance tests	Paper-and-pencil tests; performance tests	Paper-and-pencil tests; performance tests	Promotion; reporting to parents; diagnosis	Grades
Japan	Paper-and-pencil tests; practical work	Paper-and-pencil tests; practical work	Paper-and-pencil tests; practical work	Diagnosis; requirement for admission	Grade and comments
Lao PDR	Paper-and-pencil tests; oral tests observations; tele-record	Paper-and-pencil tests; oral tests; observations; tele-record	Paper-and-pencil tests; oral tests; observations tele-record	For parents to help children; for remediation; to improve the teaching/ learning performance	Ten score grading
Malaysia	Paper-and-pencil tests; teacher observation folios; practical work	Paper-and-pencil tests; teacher observation folios; practical work	Paper-and-pencil tests; teacher observation folios; practical work	To report student progress; diagnosis; teaching effectiveness	Grade; percentage; descriptive

TABLE 14. Types, Purposes and Methods of Reporting

TABLE 14. Types, Purposes and Methods of Reporting *(continuation)*

Country	Elementary level	Secondary level		Purposes/Uses	Methods of reporting
		Lower	*Upper*		
New Zealand	Paper-and-pencil test, practical work, observation standardized assessments, parent interviews	Paper-and-pencil test, practical work	Paper-and-pencil test, practical work	Measure of performance; to report to student and parents on progress. Diagnostic and formatic to improve learning and teaching	Grading system
Philippines	Paper-and-pencil tests; projects; observations	Paper-and-pencil tests; projects; observations	Paper-and-pencil tests; projects; observations	Improve teaching/ learning; diagnosis; improve student performance; report to parents	Percentage rating
Republic of Korea	Paper-and-pencil tests; performance	Paper-and-pencil tests; performance	Paper-and-pencil tests; performance	Reporting to parents; requirement for admission	Written comments for elementary level; grade and percentage in secondary level
Sri Lanka	School-based assessment; paper-and-pencil tests; practical work; assignments; observations	School-based assessment from 1998 in grade 6; from 1999 in grade 7-11; public exams in grade 11	Public examination in grade 13	To improve learning, teaching, and assessment practices	Grade; progress records; students profile; polar gram and subject -based reports
Thailand	Paper-and-pencil test at the end of year	Paper-and-pencil test at the end of semester; authentic assessment	Paper-and-pencil test at the end of semester; authentic assessment	Measure performance (elementary and secondary) and making new pass at end of year (secondary only)	Grading system; end of level report to parents and concerned authorities
United States (New York)	Observation; homework and projects; written exams	Observation; homework and projects; written exams	Observation; homework and projects; written exams	Describe performance; incentive for students for promotion	Percentage and grades
Uzbekistan	Paper-and-pencil test; ob-servations; portfolio	Paper-and-pencil test and practical work	More paper-and-pencil test; laboratory work in professional and technical education	Evaluation of student learning; promotion for next grade	Percentage rating
Vietnam	Paper-and-pencil tests	Paper-and-pencil tests	Paper-and-pencil tests	Diagnosis (elementary level), assessment for promo-tion (secondary level)	Percentage or grades

of student performance is also a means to review the curriculum and results are therefore used to improve not only the curriculum but the teaching and learning process, as well.

Methods for reporting on students' performance

Student performances are reported quantitatively and qualitatively. Comments and observations describing student performance and progress in class are reported to parents. The comments maybe motivational or may say something about the potentials of the student. In India, exclusive use of observations on student performance are for the elementary level only while in Germany, there is a verbal certification for Grades 1 and 2.

A grading system is adopted in many countries. The letter, numerical equivalents, or percentages are used for recording results.

External examinations

Table 15 explains the types and purposes of external examinations as well as their impact on curriculum implementation.

Most of the countries report a system of external evaluation except for Indonesia and Thailand. This evaluation is usually at specific levels and at the end of levels, such as the elementary or secondary level.

The purposes of the external evaluation are to determine promotion or certification to the next level of education, student performance, and school accountability.

External evaluation has positive or negative impact on curriculum implementation because it provides feedback and data which may be used for curriculum development and improvement.

Barriers and Constraints to Effective Curriculum Implementation

The effective implementation of curriculum is dependent on a multitude of factors. Countries report the difficulties and barriers that have been identified as constraints to effective curriculum implementation include inadequate support instructional materials; large class sizes; language of instruction; out-of-date materials; teacher qualifications, teachers' availability; teachers' knowledge, skills, and attitudes; and the performance of teachers and principals.

Barriers and constraints to curriculum implementation

Countries reported potential obstacles to effective curriculum implementation:

- Lack of personnel resources (not enough teachers to reduce overcrowding, lack of staff qualifications, and not enough training regarding new reforms); lack of quality instructional materials related to new content and approaches; and lack of appropriate infrastructure.
- Difficulty of managing change; unrealistic expectations of policymakers, desire for immediate results, and inappropriate or lack of implementation strategies.
- Resistance to change among teachers, administrators, and the public, often stemming from an overabundance of reform initiatives.
- Conflict between reform goals and pressure on students to do well on entrance examinations.

Curriculum Monitoring and Evaluation

This section is devoted to overall curriculum evaluation and not to individual student evaluation, which was covered in the previous section.

Monitoring and Evaluation

There are a number of ways in which the curriculum can be monitored and evaluated.

Among the participating countries, monitoring and evaluation activities exist both at

TABLE 15. External Examination System			
Countries	*External examinations (levels)*	*Purpose*	*Impact on curriculum implementation*
Australia	Yes, 12 (10 in one state)	Certification; entry to higher education	Creation of uniform curriculum; comparability in assessment
China	Yes, 5 or 6, 9, 10, 11,12	Promotion; entrance to university	Certification of proper assessment; to ensure curriculum is implemented to basic level of educational quality
Fiji	Yes, 6,8,10,12,13	Performance monitoring (elementary); promotion (secondary) and employment and higher education	For curriculum revision
France	Yes, 9, 12	Certification and higher education	Incentive for full coverage of curriculum content
Germany (Bavaria)	Yes, 10, 12	Certification and higher education	Considerable influence on curriculum
Japan	Yes, 3	Promotion for higher education	Review of implementation
Korea	Yes, 12	Entrance to university	Uniformity of curriculum; examination orientation
India	Yes, 10, 12	Certification of achievements; qualification	Basis for analysis of performance
Indonesia	None	—	—
Lao PDR	Yes, 5,8,11	Certification	Revise curriculum
Malaysia	Yes, 6, 9, 11	6, 9 – performance; 11 – certification	Review of implementation; uniform curriculum
New Zealand	Yes, 11, 13	Certification (along with internal assessment)	Achievement levels Informs school planning Review of curriculum
Philippines	Yes, 4, 6	Student achievement	Curriculum improvement
Sri Lanka	Yes, 5 (scholarship ex.), 11, 13	Certification	
Thailand	None		
USA	Yes, 3, 5, 6, (subject wise)	Assess performance	For curriculum implementation
Uzbekistan	Yes, 9, 12	Lower secondary for entrance and vocational education, upper secondary for higher education	Diagnosis of curriculum implementation
Vietnam	Yes, every level	For merit attainment certification	Under consideration to reorganize examinations

the local and system level. At the school level, the classroom observation is the most common means of evaluation. Classes may be observed by the head or a subject area specialist, a pedagogical adviser or educational supervisor from the district, province, or state education office. Staff meetings are mentioned as a means to monitor and evaluate the curriculum. Visits by inspectors or supervisors are common among the participating countries.

At the system level, national examinations are the most common means of monitoring and evaluating the curriculum. Inspection and supervision by education officers are conducted regularly. Feedback from surveys, reviews, and studies undertaken by national or regional agencies are gathered during the monitoring and evaluation of the curriculum. This feedback forms a part of the baseline data for curriculum improvement.

Curriculum Evaluation

Countries report a variety of strategies for curriculum evaluation such as analysis of curriculum documents with respect to policy statements; validation conferences with relevant stakeholders, consultations with teachers, and pilot studies in a few school settings.

Mechanisms used for curriculum evaluation

The participating countries reported a variety of mechanisms and major tools for curriculum evaluation. The most common are internal and external evaluations, pilot studies of curriculum programs prior to implementation, and research and reviews conducted by various agencies to look into the effectiveness and impact of curriculum implementation, through consultations with various stakeholders, administration of achievement tests to assess performance of students, reports from school inspectors, and government reviews.

Use of results of national curriculum evaluation

Results of national curriculum evaluations are mainly used to provide information for curriculum revision and improvement of standards; improve the quality of teaching and learning at the school and national levels; address pressures from political, social, and economic groups and ensure balance; and improve programs for the educationally disadvantaged.

Monitoring of Local Curriculum

None of the countries reported any fully locally controlled curriculum. However, in cases where there is a local curriculum, it is assumed that it is developed within the framework of the national or state curriculum. Implementation of such curriculum is monitored by concerned authorities (local school board/district/province/state).

Student Assessment for Curriculum Monitoring

Some countries use national achievement studies to evaluate the curriculum. Table 16 below shows the types of assessment, how often it is administered, and at what grade level.

Student assessment for curriculum development is a combination of school-based, national, and international tests. National tests are administered annually or periodically for selected levels (elementary, lower or upper secondary education). Most countries participate in international testing programmes.

Research and Development

Analysis of research and development projects over the last 10 years indicated that they focused on the effectiveness of the curriculum; student performance (proficiency in languages in France, India, and Lao PDR); mathematics and science (Japan, India, and Korea); effectiveness of teaching/learning ma-

TABLE 16. Student Assessment for Curriculum Monitoring

Country	Type	Frequency	Grade level
Australia	International assessment (IEA) State-wide School based (continuous)	Every year	Years 3, 5 (7) in some states All levels
China	National assessment	Once in the last 10 years	Primary; upper secondary
Fiji	National assessment	Every 5 years	Grade 6, 7, 10, 12, 13
France	International and national tests	Every 2 years for Grade 3, 6 Every year for Grade 10	Grade 3, 6, 10 for all + sample for other grades
Germany (Bavaria)	National exams	Every year	Grade 10
India	National (NCERT) School boards	Varying period in 10 years	Grade 5, 8, 10 , 12
Indonesia	Year-end, national	3 times a year for each grade	
Japan	National assessment	Every 10 years	Primary + lower secondary
Lao PDR	National, classroom/school visits, performance tests	Once in 2 years	Grade 1-3, 6
Malaysia	School based National assessment International assessment (IEA)	End of year Every year	All grades Grade 6, 9, 11
New Zealand	National, achievement, International assessment (IEA)	Every year	Year 4, 8
Philippines	National assessment	Every year	Grade 6, year 4
Republic of Korea	National SAT	Every year for 0.5% of	Grade 4, 6, 7, 8, 10, 11 for NL and Maths; 4,6,7,8, 10 for ST and SS; 7,8, 10,11 for English
Sri Lanka	N/A	N/A	N/A
Thailand	School based National (proposed)	Year-end, quarter-end Every 2 years	Grade 6, 9 12 Primary and secondary
United States (New York)	State-wide	Every year	Primary and secondary
Uzbekistan	School based continuous International assessment (ADB)	Every year	For all levels
Vietnam	National assessment School-based	Every year	From primary to upper secondary

terials such as studies on the use of textbooks (Sri Lanka and China); and studies on specific content areas such as reforms in vocational education (Uzbekistan); and action research on the teaching of ethnic language (Lao PDR); and choice of elective subjects (Malaysia).

Research is undertaken at the institutional, national, local, and international levels, and the findings are used to improve the curriculum.

Examples of research and studies can be found in Table 17.

Summary and Conclusion

This section provides a general summary of the trends that emerged from a consideration of the country reports. During the group and plenary discussions. This summary identifies general directions for curriculum policy and implementation being considered by many participating countries. The conclusions have been grouped under four headings that reflect the main sections of the country reports.

TABLE 17. Research Undertaken by Countries	
Country	*Research/Studies conducted*
Australia	Studies on literacy, mathematics, science, gender differences, vocational education, assessment, and outcomes education
China	Experiments on teaching materials; investigation of the implementation of nine-year curriculum
Fiji	N/A
France	Studies on several aspects of all subjects with focus on literacy and role of mathematics in selection of students
Germany	None
India	Studies on language, math, sciences, social science, work experiences, technical and vocational education, population education, values education, general curriculum
Indonesia	
Japan	Third International Mathematics and Science Study (TIMSS)
Lao PDR	Action Research on Teaching of Lao Language to Children of Ethnic Minorities
Malaysia	Effectiveness of the Integrated Curriculum for Primary/Secondary Schools, Trends in Choice of Elective Subjects of Upper Secondary Students
New Zealand	Factors Affecting School Progress, Evaluation of Teacher Development Programs, National Monitoring Projects, Curriculum Implementation, Assessment Resource Bank
Philippines	Survey of Outcomes of Elementary Education, Impact Study of the Elementary Curriculum, Monitoring and Evaluation of New Secondary Education Curriculum Student Achievement in the New Secondary Education Curriculum, Responsiveness of the Teacher Education Curriculum to the Secondary Education Curriculum
Republic of Korea	Needs Analysis, Evaluation of Current Curriculum, International Comparative Studies on Curriculum Reforms
Sri Lanka	Studies on Textbooks, Teaching Effectiveness of Mother Tongue, Studies on the GCE Examinations
Thailand	Effectiveness of Primary School Curriculum, Implementation of the Secondary School Curriculum Thai Children Potentiality
United States	Not available
Uzbekistan	Study on Social and Economic Conditions for Education, Reforms in Vocational Education
Vietnam	Effectiveness of School Curriculum from Primary to Upper Secondary

Curriculum Policies

During the last decade various efforts have been made in each country to revamp their education systems. The following general trends were reported by many countries:

- There is an on-going commitment to curriculum policy review and development to meet the challenges of the changing technological, social, economic, political, national, and global environments. Curriculum policies of participating countries emphasized the goals of social cohesion, economic well-being, and personal development.
- Countries appear to be developing curriculum, qualifications, and schooling frameworks and structures that are able to respond effectively both to national and international exchanges and more local needs.
- Participating countries recognize the importance of developing curriculum frameworks that ensure the learning of core content while providing opportunities for greater choice of elective subjects.
- Participating countries recognize the importance of a holistic approach to the curriculum. This kind of approach emphasizes the balance between mental, emotional, physical, and spiritual dimensions. Countries also mentioned the need to include child-centered and activity-based learning and teaching approaches that foster creative thinking and problem-solving, and encourage self-directed learning.
- Curriculum policy development, and/or approval, is retained centrally in most countries. However, there exists a trend to consult a wide range of stakeholders in policy development, and to devolve decision making on implementation issues to the local level.

Curriculum Design

Every country has to make decisions regarding the overall approach to curriculum design as well as to the subject area that will be included in the school curriculum. The following general trends were reported by many countries.

A trend was identified to move from content-based to varying combinations of competency and content-based curriculum frameworks that ensure the acquisition of both knowledge and skills.

The curriculum frameworks are being modified to include a range of new subject areas. These may be either integrated into existing subjects such as additional foreign languages. A significant degree of continuity of subjects offered was observed between primary and lower secondary levels in countries.

The curriculum overload was perceived to result from a variety of reasons, including too much content, too many subject areas, and the inappropriate early introduction of some content. There was also reported pressure from the community, lobbyists, and politicians to include subjects to meet immediate and emerging needs.

Curriculum Implementation

Effective strategies for the implementation of curriculum policies are required to ensure that teachers are able to develop and teach according to the planned curriculum. The following general trends were reported by many countries:

- The provision of professional development to help teachers understand content and pedagogical changes is usually supported by central and state governments. Increasingly, however, teachers are expected to undertake professional development as an integral part of their professional role.
- The supply of textbooks at primary and lower secondary levels is generally gov-

ernment or state funded while supplementary material is often developed and distributed by both government and private sources. The use of information technology to disseminate curriculum information is increasing and the utilization of a wide variety of media is apparent.

- There is evidence of increasing flexibility in curriculum requirements to enable schools to make more decisions on the best way to implement curriculum policies and to take account of local circumstances and needs.
- The lack of quality curriculum resources, inadequate infrastructure and facilities, underqualified teachers, and the rate and extent of curriculum changes remain key implementation issues for many countries.
- In many countries, the priority is to enhance the capacity of teachers and schools to undertake on-going school-based assessment. There appear to be three main purposes for this focus: to enable schools to review more effectively learning and teaching programs; to monitor student progress; and to provide internal components for public examination.

Curriculum Monitoring and Evaluation

There are a number of ways in which the national curriculum frameworks can be monitored and evaluated. The following general trends were reported by many countries:

- The range of strategies to monitor and evaluate the curriculum include participating in international surveys such as the Third International Mathematics and Science Survey; using examination results; conducting inspection and supervision; and using feedback from surveys, reviews, and studies. Only a small number of countries reported the use of systematic research to monitor the curriculum.
- They agree on the importance of continuous efforts to revise their curriculums to meet the challenges of the new age, and on the usefulness of international projects such as this study as a forum for sharing ideas.