Illiterate population aged 15 years and over: 2,004,000 (1995 estimates)
percentage of illiterates: 15.5%
Public current expenditure on education (1996)
Ringgit 9,940,000,000
as percentage of GNP: 4.2%
Public current expenditure by level of education (1997)
pre-primary: 1.2%
primary: 31.5%
secondary: 30.6%
tertiary: 25.5%
Gross enrolment ratios by level of education (1997)
pre-primary: ...
primary: 101%
secondary: 64%
tertiary: ...
CONTENTS

- Brief introduction/background on the national curriculum
  - Pertinent Laws and Policies bearing on the National Curriculum for Basic Education
  - Underlying philosophy and rationale for the national curriculum
  - Major goals and objectives of basic education
  - Vision of a student completing a primary level, an elementary level, and a secondary level education

- Changing structures and organisation of learning content
  - Description of the prevailing organizational structures and mechanisms and consultation processes
  - Integrating the Principle of Learning throughout Life
  - Integrating/incorporating the four pillars of learning
    - The knowledge and concepts to be learned/acquired by students (learning to know)
    - The practical application skills and work-related experiences and competencies
    - The mental (thinking, reasoning, etc.) faculties, emotional skills and qualities, the creative/aesthetic sense, the spiritual well-being or the self-knowledge, discovery and development to be encouraged among students (learning to be)
      - The attitudes and values to be imparted to students

- Promoting interdisciplinarity in the basic education curriculum
  - Reconceptualizing subject-matter content into interrelated themes or topics
  - Reorienting instructional methods and pedagogies

- Designing and Implementing localised curricula
  - Existing infrastructure support for the national curriculum (i.e., adequacy of classrooms and physical facilities, and of equipment, laboratories and libraries in schools and learning centres)
    - The state of textbooks and instructional materials
    - The training of teachers
  - Feedback mechanisms on the implementation of the national curriculum
    - Institutional supervision and reporting systems
    - Achievement indicators

- Strengths and Weaknesses of the National Curriculum

- Some major recommendations for improving the national curriculum

- Recent and ongoing curricular reform initiatives
  - Factors in the implementation of curricular reform initiatives
  - Assessment of the national curriculum for basic education

- Proposals for advancing the new framework for a basic education curriculum
1.1 Brief Introduction/Background on the National Curriculum

1.1.a Pertinent Laws and Policies bearing on the National Curriculum for Basic Education

Legislation

The Education Act 1996 covers all levels of education under the national education system, which comprises preschool, primary, and secondary education. Section 18 of the Act stipulates the use of a national curriculum to be used in all schools. Specifically, section 18 stipulates the following:

1. The Minister shall prescribe a curriculum to be known as the National Curriculum which, subject to subsection (3), shall be used by all schools in the National Educational System.

2. The National Curriculum prescribed under subsection (1) shall specify the knowledge, skills and values that are expected to be acquired by pupils at the end of their respective periods of schooling and shall include the core subjects as set out in the Schedule and such are the subjects as may be prescribed.

3. In the case of private schools, subsection (1) shall be deemed to have been complied with if the core subjects of the National Curriculum as set out in the Schedule are taught in the schools.

4. The Minister may from time to time by order published in the Gazette amend or alter the Schedule.

In the Education (National Curriculum) Regulations 1997, the National Curriculum is defined as:

an educational program that includes curricular and co-curricular activities which emphasizes all the knowledge, skills, norms, values, cultural elements and beliefs to help develop a pupil fully with respect to the physical, spiritual, mental and emotional aspects as well as to inculcate and develop desirable moral values and to transmit knowledge.

The Education Regulations provide list of subjects for all levels of schooling as prescribed in the National Curriculum. The list of subjects are categorized into:

- **Elective subjects** which are subjects other than the compulsory and the core subjects chosen by pupils in government and government-aided schools according to their interests, talents, abilities and potential.

- **Compulsory subjects** that include all subjects other than the core subjects that must be learned by all pupils in government and government-aided schools;
• **Core subjects** which are subjects that must be learned by all pupils in government and
government-aided schools and private schools; and

• **Additional subjects** are subjects taught in accordance with the Act in government and
government-aided schools.

**Core Subjects for Primary Level**

Malay Language  
English Language  
Chinese Language, for pupils in national-type schools (Chinese)  
Tamil Language, for pupils in national-type schools (Tamil)  
Mathematics  
Science  
Local Studies  
Islamic Education, for pupils professing the religion of Islam  
Moral Education, for pupils not professing the religion of Islam

**Compulsory Subjects for Primary Level**

Physical and Health Education  
Living Skills  
Art Education  
Music Education

**Additional Subjects for Primary Level**

Chinese Language  
Tamil Language  
Arabic Language (Communication)

**Subjects for Transition Class**

Malay Language  
English Language  
Chinese Language/Tamil Language  
Practical Use of the National Language  
Art Education  
Physical Education

**Core Subjects for Secondary Level**

National Language  
English Language  
Mathematics  
Science  
History  
Islamic Education, for pupils not professing the religion of Islam  
Moral Education for pupils not professing the religion of Islam

**Compulsory Subjects for Lower Secondary Level**

Geography  
Physical and Health Education
Living Skills
Art Education/Music Education

Compulsory Subjects for Upper Secondary Level

Physical and Health Education

Additional Subjects for Secondary Level

Chinese Language
Tamil Language
Arabic Language (Communication)

Elective Subjects for Upper Secondary Level *

Group I (Humanities)
  Malay Literature
  Literature in English Language
  Geography
  Art Education
  Advanced Arabic Language

Group II (Vocational and Technology)
  Principle of Accounts
  Basic Economics
  Commerce
  Agriculture Science
  Home Economics
  Additional Mathematics
  Mechanical Engineering Studies
  Civil Engineering Studies
  Electrical and Electronic Engineering Studies
  Engineering Drawing
  Engineering Technology
  Invention

Group III (Science)
  Additional Science
  Physics
  Chemistry
  Biology

Group IV (Islamic Studies)
  Tasawwur Islam
  Al-Quran and As-Sunnah Education
  Syariah Islamiah Education

(* The list of subjects was revised in 1999 with the introduction of the open certification system)

1.1.b Underlying philosophy and rationale for the national curriculum

Malaysia’s emphasis on education provides equal opportunity to all school-age children. Equality and right to education are fundamental liberties enshrined in the Federal
Constitution. These aspirations are manifested in the National Philosophy of Education, which states that:

Education in Malaysia is an ongoing effort towards further developing the potentials of individuals in a holistic and integrated manner in order to produce individuals who are intellectually, spiritually, emotionally and physically balanced and harmonious, based on a firm belief in and devotion to God. Such an effort is designed to produce Malaysian citizens who are knowledgeable and competent, who possess high moral standards, and who are responsible and capable of achieving a high level of personal well being as well as being able to contribute to the betterment of the family, the society and the nation at large.

The National Education Policy laid the foundation for achieving a national system of education using a common curriculum. In line with the National Philosophy of Education, the curriculum is aimed towards achieving the desired educational goals and objectives of promoting overall individual development in a holistic manner integrating the spiritual, emotional, intellectual, and physical aspects of development. Individual potentials to be developed are those relevant to national needs, which include individual, social, economic, political, modernization, and globalization. In addition, the curriculum also aims to further strengthen one’s belief in God and places great emphasis on universal noble values in order to meet the national aspiration of producing Malaysians with high moral standards.

1.1.c Major goals and objectives of basic education

The role of the school curriculum is to ensure the holistic development of the individual mentally, physically, spiritually and emotionally by imparting general knowledge and skills; cultivating, instilling and fostering healthy attitudes and accepted moral values. The curriculum aims to bring forth the Malaysian citizen who is a balanced and well-rounded individual, trained, skillful, and cherishes the national aspiration for unity.

To fulfill this aspiration, the National Curriculum is formulated around a number of principles as follows:

- Continuity of education from primary to secondary schools;
- General education for all;
- Integration of the intellectual, spiritual, emotional, and physical aspects;
- Emphasis on values and attitudes development;
- Upgrading the use of Malay Language and English Language; and
- Life-long education.

In sum, the underlying theoretical principle of national curriculum formulation is that of general education using an integrated approach to curriculum planning.

The curriculum is ‘contents’ and ‘skills’ based. The contents of each subject reinforce and facilitate further the development of the basic skills, the acquisition of knowledge and thinking skills. Each subject must also incorporate the inculcation of moral values and attitudes and the correct use of Malay Language and other languages, such as English, Chinese and Tamil.

The integrated approach is the main focus in the design of the Integrated Curriculum for Primary School (ICPS) and Integrated Curriculum for Secondary School (ICCS). The elements of knowledge, skills and values are incorporated so as to bring about the integrated development of the intellectual, spiritual, emotional and physical aspects of the individual.
Pre-school Education

In the pre-school curriculum emphasis is on the socialization process, personality development and the preparation of children for primary schooling.

Primary Education

The ICPS emphasizes the mastery, reinforcement and application of the 3Rs, acquisition of complex skills and knowledge, pre-vocational education as well as the development of personality, attitudes and values.

Secondary Education

In the ICSS emphasis is on general education, the consolidation of skills acquired at primary and pre-vocational level, the development of aptitude and interests, personality, attitude and values as well as specialization, career and higher education.

- Revisiting the Goals and Objectives of Basic Education

The education and training systems will continue to be geared towards molding individuals to become better Malaysians with the right attitudes, and to equip them with the knowledge and skills necessary in the twenty-first century, and to make Malaysia a developed nation by the year 2020. To meet the challenges of the twenty-first-century and Vision 2020, teaching and learning practices and school management will have to be reviewed in order to prepare individuals who are technologically literate, creative and innovative workforce. This transformation will entail changing the school culture, from one that is predominantly memory-based to one that stimulates thinking and creativity, and innovative, caring and informed.

The goals and objectives of education will therefore

- Provide well-rounded development with provision for individual abilities offering a curriculum that is integrated, multidisciplinary and interdisciplinary.
- Emphasize intellectual, emotional, spiritual and physical growth, concentrating on thinking, developing and applying values, and using correct language across the curriculum.
- Produce a technologically literate workforce that can think critically, are creative, innovative and are able to use technology effectively.
- Democratize education by offering equal access to learning opportunities and accommodating different abilities, styles and paces of learning.

1.1.d Vision of a student completing a primary level, an elementary level, and a secondary level education

The National Curriculum ensures that students will be able to acquire the essential intellectual, affective and psychomotor skills in a holistic and integrated manner.

Profile of Pre-school Children

A child completing pre-school education will have the ability to:

- show love for the country
- be well-mannered and practice moral values
• master basic communication skills
• respect the national language
• master the basics of the English language
• appreciate physical activities as a basis for good health
• develop critical thinking skills through enquiry and the use of all the senses.

Profile of a Primary School Student

A student completing primary school education would have acquired the following:

• Mastery of the Malay language
• Mastery of language skills
• Mastery of arithmetic skills
• Mastery of study skills
• Mastery of ability to speak, read, write and understand the English language as a second language
• Ability to seek and acquire knowledge
• Leadership qualities and self-confidence
• Sensitivity towards man and his environment
• Mastery of scientific and technical skills
• Ability to look after one’s health and physical fitness
• Ability to read, recite and understand the meaning of selected verses from the al-Quran (Muslim students)
• Strong basic Aqidah (belief in God)
• Patriotism
• Developed talents and creativity
• Good manners and practice of moral values

Profile of Secondary School Student

A student completing secondary school education would have acquired the following:

• Ability to express patriotic feelings and love for the country
• Language proficiency and ability to communicate effectively
• Competency in the Malay language and use of it as the official and national language
• Competency in the English language and use of it as a second language
• Rational, critical and creative thinking
• Strengthened the basic of Aqidah (belief in God)
• Good manners and practice of moral values

Knowledge and use of mastery skills in daily living

• Ability to cope with new areas of knowledge and development in technology
• Confidence and resilience to face challenges in life
• Ability to look after his or her health and physical fitness
• Appreciation and care for the environment
• Constant desires to acquire knowledge.
Visioning, or imaging the growth and development of students in the new millennium

The central theme of the Malaysian educational policy is national development. To support this effort, school leavers from the education system shall possess the following characteristics:

- Knowledgeable
- IT literate
- Skillful and competent
- Patriotic
- Possess high moral values
- Able to live in the community
- Appreciative and concerned with the environment
- Creative and possess critical thinking
- Persevering and resilient
- Innovative

1.2 Changing structures and organization of learning content

1.2. a Description of the prevailing organizational structures and mechanisms and consultation processes

Decisions related to curriculum matters at the national level lie with the Central Curriculum Committee under the chairmanship of the director general of Education, sitting with the heads of all professional divisions and relevant administrative divisions of the Ministry of Education (MOE). Selected State Education directors and deans of the faculties of education of local universities are also members of this committee. In wider policy matters or where there are significant financial implications, approval is required from the Educational Planning Committee under the chairmanship of the minister of Education.

The national curriculum prescribes flexibility in methodology. The responsibility for curriculum policy, however, remains largely centralized, with the Curriculum Development Centre (CDC) playing the major role in curriculum development. In developing the curriculum, various agencies at the national and state levels, professional bodies and stakeholders are actively involved in the consultation process. The views and recommendations of the different stakeholders are taken into consideration at various stages of curriculum development. In curriculum planning, development and design, the service of competent moderators and experts/specialists available locally are sought. This is to ensure the development of high-quality curriculum. Figure 1 shows a flowchart of the curriculum development processes.
Primary Education (Year 1 to Year 6)

The Integrated Curriculum for Primary School (ICPS) is divided into two phases of three years each. Phase I comprises year 1, 2 and 3 while phase II of years 4, 5 and 6. The ICPS consists of three areas, namely, communication, man and his environment and self-development. These three areas are subdivided into six components, namely:

- Basic Skills
- Humanities
- Arts and Recreation
- Spirituality, Values and Attitudes
- Living Skills
- Co-Curriculum

The subjects taught in national primary schools and the time allocations in minutes per week are as follows:
<table>
<thead>
<tr>
<th>Subjects</th>
<th>Time Allocations per Grade per Year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PHASE I (Years 1–3)</td>
</tr>
<tr>
<td></td>
<td>PHASE II (Years 4–6)</td>
</tr>
<tr>
<td>Malay Language</td>
<td>450</td>
</tr>
<tr>
<td>English Language</td>
<td>240</td>
</tr>
<tr>
<td>Mathematics</td>
<td>210</td>
</tr>
<tr>
<td>Islamic Education</td>
<td>180</td>
</tr>
<tr>
<td>Moral Education</td>
<td>180</td>
</tr>
<tr>
<td>Music</td>
<td>60</td>
</tr>
<tr>
<td>Art Education</td>
<td>60</td>
</tr>
<tr>
<td>Health Education</td>
<td>30</td>
</tr>
<tr>
<td>Physical Education</td>
<td>30</td>
</tr>
<tr>
<td>Science</td>
<td>120</td>
</tr>
<tr>
<td>Local Studies</td>
<td>60</td>
</tr>
<tr>
<td>Living Skills</td>
<td>60</td>
</tr>
<tr>
<td>Assembly</td>
<td>30</td>
</tr>
<tr>
<td>Total</td>
<td>1,280</td>
</tr>
</tbody>
</table>

For the national-type schools (Chinese/Tamil), the subjects and time allocations in minutes per week are as follows:

<table>
<thead>
<tr>
<th>Subjects</th>
<th>Time Allocations per Grade per Year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PHASE I (Years 1–3)</td>
</tr>
<tr>
<td></td>
<td>PHASE II (Years 4–6)</td>
</tr>
<tr>
<td>Malay Language</td>
<td>270</td>
</tr>
<tr>
<td>Chinese/Tamil</td>
<td>450</td>
</tr>
<tr>
<td>Language</td>
<td>-</td>
</tr>
<tr>
<td>English Language</td>
<td>90</td>
</tr>
<tr>
<td>Mathematics</td>
<td>210</td>
</tr>
<tr>
<td>Islamic Education</td>
<td>210</td>
</tr>
<tr>
<td>Moral Education</td>
<td>150</td>
</tr>
<tr>
<td>Music</td>
<td>60</td>
</tr>
<tr>
<td>Art Education</td>
<td>60</td>
</tr>
<tr>
<td>Health Education</td>
<td>30</td>
</tr>
<tr>
<td>Physical Education</td>
<td>30</td>
</tr>
<tr>
<td>Science</td>
<td>-</td>
</tr>
<tr>
<td>Local Studies</td>
<td>60</td>
</tr>
<tr>
<td>Living Skills</td>
<td>60</td>
</tr>
<tr>
<td>Assembly</td>
<td>30</td>
</tr>
<tr>
<td>Total</td>
<td>1,280</td>
</tr>
</tbody>
</table>

**Secondary Education**

Secondary education is basically an extension of primary-level education. Education at this level is general in nature and is divided into lower and upper secondary levels, and a special year transition program known as “Remove Class” for pupils from the National-Type Chinese and Tamil Primary Schools.
Remove Class

Remove Class is a transition year for pupils from the Chinese and Tamil medium schools to acquire sufficient proficiency in Bahasa Melayu. However, pupils who have performed well in the Primary Assessment Test (UPSR) are allowed to proceed directly to Form 1.

The subjects taught in “Remove Class” and the time allocated for them are as follows:

<table>
<thead>
<tr>
<th>Subjects</th>
<th>Total time per week (minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C Malay Language</td>
<td>520</td>
</tr>
<tr>
<td>O English Language</td>
<td>200</td>
</tr>
<tr>
<td>M Chinese/Tamil Language</td>
<td>120</td>
</tr>
<tr>
<td>P Practical Use of Malay</td>
<td></td>
</tr>
<tr>
<td>U Language</td>
<td>440</td>
</tr>
<tr>
<td>L Art Education</td>
<td>80</td>
</tr>
<tr>
<td>S Physical Education</td>
<td>40</td>
</tr>
<tr>
<td>O Health Education</td>
<td>40</td>
</tr>
</tbody>
</table>

Lower Secondary Level (Form I–Form III)

This level covers a period of three years. The list of subjects for the lower secondary level and the time allocation for each subject are as follows:

<table>
<thead>
<tr>
<th>Subjects</th>
<th>Total time per week (minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C Malay Language</td>
<td>240</td>
</tr>
<tr>
<td>O English Language</td>
<td>200</td>
</tr>
<tr>
<td>M Mathematics</td>
<td>200</td>
</tr>
<tr>
<td>P Islamic Education*</td>
<td>160</td>
</tr>
<tr>
<td>U Moral Education+</td>
<td>120</td>
</tr>
<tr>
<td>L Science</td>
<td>200</td>
</tr>
<tr>
<td>S Integrated Living Skills</td>
<td>160</td>
</tr>
<tr>
<td>O Geography</td>
<td>120</td>
</tr>
<tr>
<td>R History</td>
<td>120</td>
</tr>
<tr>
<td>Y Health Education</td>
<td>40</td>
</tr>
<tr>
<td>Physical Education</td>
<td>40</td>
</tr>
<tr>
<td>Art Education/Music</td>
<td>80</td>
</tr>
<tr>
<td>Chinese/Tamil Language ++</td>
<td>120</td>
</tr>
<tr>
<td>Arabic Language++ (Communication)</td>
<td>240</td>
</tr>
</tbody>
</table>

* For Muslim students
+ For non-Muslim student
++ Optional

Upper Secondary Level (Form 4-5)

Education at this level covers a period of two years. Besides following the general education program, students begin to specialize in the sciences, arts, technical, vocational and religious disciplines. Specific schools are designated for each discipline. These schools are academic, technical and vocational.
The list of subjects for upper secondary level are as follows:

<table>
<thead>
<tr>
<th>Subject</th>
<th>Time Allocation PER WEEK (MINUTES)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CORE SUBJECTS</strong></td>
<td></td>
</tr>
<tr>
<td>C Malay Language</td>
<td>240</td>
</tr>
<tr>
<td>O English Language</td>
<td>200</td>
</tr>
<tr>
<td>M Islamic Education*</td>
<td>160</td>
</tr>
<tr>
<td>P Moral Education+</td>
<td>120</td>
</tr>
<tr>
<td>U Mathematics</td>
<td>200</td>
</tr>
<tr>
<td>L Science</td>
<td>160</td>
</tr>
<tr>
<td>S History</td>
<td>120</td>
</tr>
<tr>
<td>O Physical Education</td>
<td>40</td>
</tr>
<tr>
<td>R Health Education</td>
<td>40</td>
</tr>
<tr>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>

* For Muslim students
+ For non-Muslim students

<table>
<thead>
<tr>
<th>Subject</th>
<th>Time Allocation PER WEEK (MINUTES)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ADDITIONAL SUBJECTS</strong></td>
<td></td>
</tr>
<tr>
<td>Chinese Language</td>
<td>120</td>
</tr>
<tr>
<td>Tamil Language</td>
<td>120</td>
</tr>
<tr>
<td>Arabic Language (Communication)</td>
<td>240</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Subject</th>
<th>Time Allocation PER WEEK (MINUTES)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ELECTIVE SUBJECTS</strong> *</td>
<td></td>
</tr>
<tr>
<td>Pure Science</td>
<td></td>
</tr>
<tr>
<td>Biology</td>
<td>160</td>
</tr>
<tr>
<td>Physics</td>
<td>160</td>
</tr>
<tr>
<td>Chemistry</td>
<td>160</td>
</tr>
<tr>
<td>Additional Science</td>
<td></td>
</tr>
<tr>
<td>Additional Science</td>
<td>160</td>
</tr>
<tr>
<td>Islamic Studies</td>
<td></td>
</tr>
<tr>
<td>Al-Quran &amp; As-Sunnah Studies</td>
<td>160</td>
</tr>
<tr>
<td>Syariah Islamiah Studies</td>
<td>160</td>
</tr>
<tr>
<td>Applied Arts</td>
<td></td>
</tr>
<tr>
<td>Home Economics</td>
<td>120</td>
</tr>
<tr>
<td>Principles of Accounting</td>
<td>160</td>
</tr>
<tr>
<td>Commerce</td>
<td></td>
</tr>
<tr>
<td>Home Science</td>
<td>160</td>
</tr>
<tr>
<td>Information Technology</td>
<td></td>
</tr>
<tr>
<td>Information Technology</td>
<td>160</td>
</tr>
<tr>
<td>Languages</td>
<td></td>
</tr>
<tr>
<td>Arabic Language (Communication)</td>
<td>240</td>
</tr>
<tr>
<td>Higher Arabic Language</td>
<td>160</td>
</tr>
<tr>
<td>Chinese Language</td>
<td>120</td>
</tr>
<tr>
<td>Tamil Language</td>
<td>120</td>
</tr>
<tr>
<td>Technology</td>
<td></td>
</tr>
<tr>
<td>Additional Mathematics</td>
<td>160</td>
</tr>
<tr>
<td>Agricultural Science</td>
<td>160</td>
</tr>
<tr>
<td>Engineering Drawing</td>
<td>160</td>
</tr>
<tr>
<td>Mechanical Engineering Studies</td>
<td>160</td>
</tr>
<tr>
<td>Civil Engineering Studies</td>
<td>160</td>
</tr>
<tr>
<td>Electrical &amp; Electronics</td>
<td></td>
</tr>
<tr>
<td>Engineering Studies</td>
<td>160</td>
</tr>
</tbody>
</table>
Invention 160  
Engineering Technology 160  
Humanities  
  Malay Literature 120  
  Literature in English 120  
  Geography 120  
  Art Education 120  
  Music 120  
  Tasawwur Islam 160

* The list of subjects is offered with the introduction of the open certification system

Secondary Vocational Schools

Secondary vocational schools provide courses in pre-employment skills as well general education in order to give its leavers flexibility and mobility in working life. These schools offer courses in two streams, namely, the vocational education stream and the skills training stream.

In the vocational education stream, emphasis is given to general and technical subjects in order to provide students with a firm foundation for admission into polytechnics or other institutions of higher education, without significantly affecting their vocational skills development.

Vocational Education Stream

Students in the vocational stream pursue courses with greater emphasis upon academic subjects. The subjects offered at the Vocational Education Stream are as follows:

<table>
<thead>
<tr>
<th>ACADEMIC</th>
<th>VOCATIONAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core Subjects</td>
<td>Areas</td>
</tr>
<tr>
<td>Malay Language</td>
<td>Engineering Trades</td>
</tr>
<tr>
<td>English Language</td>
<td></td>
</tr>
<tr>
<td>Science</td>
<td></td>
</tr>
<tr>
<td>Practise</td>
<td>Courses</td>
</tr>
<tr>
<td>Mathematics</td>
<td>Electrical</td>
</tr>
<tr>
<td>Islamic Education</td>
<td>Electronics</td>
</tr>
<tr>
<td>Moral Education</td>
<td>Machine Shop</td>
</tr>
<tr>
<td>Construction</td>
<td>Welding and Metal</td>
</tr>
<tr>
<td>Conditioning</td>
<td>Fabrication</td>
</tr>
<tr>
<td>(Syllabus is similar to that offered in academic schools)</td>
<td>Automotive</td>
</tr>
<tr>
<td></td>
<td>Building</td>
</tr>
<tr>
<td></td>
<td>Refrigeration &amp; Air</td>
</tr>
<tr>
<td>Design/Dressmaking</td>
<td>Home Economics</td>
</tr>
<tr>
<td></td>
<td>Catering</td>
</tr>
<tr>
<td></td>
<td>Fashion</td>
</tr>
<tr>
<td>Confectionery</td>
<td>Beauty Culture</td>
</tr>
<tr>
<td></td>
<td>Child Care</td>
</tr>
<tr>
<td></td>
<td>Bakery and</td>
</tr>
<tr>
<td></td>
<td>Commerce</td>
</tr>
<tr>
<td></td>
<td>Office Management</td>
</tr>
<tr>
<td></td>
<td>Business</td>
</tr>
</tbody>
</table>
Skills Training Stream

In the skills training stream, more emphasis is given to practical work to develop competency in trade skills, as required by related industries. Students are prepared for the National Vocational Training Certificate (NVTC), a skills assessment conducted by the National Vocational Training Council, Ministry of Human Resources. These students are expected to pursue industrial employment after completing their training. Two types of courses are conducted, namely, (1) the two-year course and (2) the one-year course.

The two-year course prepares upper secondary students for the NVTC Certificate in the areas listed in the table below.

| Refrigeration and Air-Conditioning Mechanic (Domestic) | Carpentry and Joinery |
| Refrigeration and Air-Conditioning Mechanic (Commercial) | Furniture Making |
| Motor Mechanic | Radio and Television |
| Arch Welding | Electrician (Domestic and Industry) |
| Gas Welding | Agriculture Machinery |
| General Machinist | Dressmaking |
| Turner | Hairdressing |
| General Mechanical Filter | Beautician |
| Building Construction | Food Preparation |
| Processing | Food Service |

The one-year course in specific trades offers holders of SPM certificates and NVTC certificate skills training in the areas listed in the following table.

| Domestic Plumbing | Tool and Dye Making |
| Draftsman – Civil Engineering | Millwright |
| Draftsman – Architecture | Mechanical Drafting |
| Signcraft | Advanced Automotive (Diesel) |
| Tiling and Flooring | Advanced Automotive (General) |
| Advanced Furniture Making | Advanced Refrigeration and Air Conditioning |
| Instrument Maintenance (Electronics) | Advanced Welding |
| Industrial Electronics | Foundry Practice |
| Spray Painting and Panel Beating | |

Integrating the Principle of Learning throughout Life

In view of the challenges of the twenty-first century and other changing needs, the whole school curriculum was revised in 1999. The newly revised curriculum will be implemented in stages nationwide beginning in 2002.
The basis of the revised curriculum have considered the following aspects:

- National development—economy, unity, ICT, science and technology, socio-cultural, K-economy;
- Individual’s development—human/personal development, citizenship development;
- Learning theories—multiple intelligences, emotional intelligence, mastery learning, contextual learning, constructivism;
- National Philosophy of Education—learning as a life-long effort, overall and integrated individual’s development (intellectual, spiritual, emotional and physical); and
- UNESCO’s four pillars of learning to know, learning to do, learning to be and learning to live together.

These aspects are translated into:

- Learning areas (subject disciplines)—languages, humanities, sciences, technology, vocational, arts, religious and moral education;
- Special programmes—drug education, environmental education, family health education, values education; and
- Co-curricular activities—uniform bodies (Cadet, Girl-guide, St. John Ambulance), clubs and societies, sports and games.

(a) Integrating/incorporating the four pillars of learning:

**The knowledge and concepts to be learned/acquired by students (learning to know)**

The underlying theoretical principle in the formulation of the Malaysian National Curriculum is that of general education using an integrated approach in curriculum planning for knowledge, skills and values. A combined use of the contents-based and outcome-based approaches to curriculum design is employed. In both primary and secondary levels, a variety of courses or subjects are offered. The aim of all these learning experiences is to enable students to acquire subject-content knowledge, skills and positive attitudes. Examples of knowledge and concepts to be learned/acquired by students are listed below:

i. **Languages (Malay Language, English, Chinese, Tamil)**

   - for interpersonal purposes
   - for information purposes
   - for aesthetic purposes.

ii. **Social Studies (History, Geography)**

   - Citizenship and national unity
   - International understanding
   - Cultural understanding.

iii. **Science**

   - Scientific knowledge (biology, chemistry, physics)
   - Science process skills
• Manipulative skills.

iv. Mathematics
• Arithmetic
• Problems-solving skills.

v. Arts and Aesthetic
• Cultural understanding
• Art appreciation
• Arts and crafts.

vi. Vocational
• Manipulative skills
• Creativity
• Career options.

vii. Technology
• Manipulative skills
• Technological applications
• Computer literacy
• ICT skills.

viii. Physical and Health Education
Physical development
Safety
Health and nutrition.

• The practical application skills and work-related experiences and competencies

Technical and vocational education aims to provide basic employable skills and work ethics required in the work place. They are also used to provide a strong academic foundation for the preparation of technical subjects and specialization; to provide individuals with competencies that meet industrial standards.

The components of the curriculum consist of:
• Basic employable skills and work ethics (academic skills, personal management skills, teamwork skills)
• Technical courses common to a career (engineering, technology, business, etc.)
• Specialty areas (courses selected for specialization).
• Practical application of skills and work-related experiences are developed through:

Work-based learning activities which provide learning experiences, such as work shadowing, mentoring, cooperative learning, community services, internship, and apprenticeship.
School-based learning activities, which provide academic foundations, career education, work-based experiences (occupational knowledge, skills, simulations, etc., contextual learning).

Recent efforts are made to introduce vocational subjects into academic schools. A new subject for upper secondary, known as basic industrial skills, will be introduced. Syllabi to be offered include domestic construction, furniture making, domestic electrical services, designing and sewing, food catering, landscaping and nurseries and cultivation of food crops. These subjects will be initially implemented in 2002 in fifty selected schools benefiting six thousand students who lack interest in academic studies.

- **The mental (thinking, reasoning, etc.) faculties, emotional skills and qualities, the creative/aesthetic sense, the spiritual well being or the self-knowledge, discovery and development to be encouraged among students (learning to be)**

  The thrust of the national education philosophy is the development of the “good man” who is intellectually, spiritually, emotionally and physically balanced and harmonious. Accordingly, the “good man” should have a firm belief in and obedience to God; be knowledgeable, possesses living skills; possesses high moral standards; responsible to himself/herself, society and nation; contributes to the well being of society; the nation and to mankind; and has a balanced personality.

  To equip individuals with the appropriate knowledge, skills, strong moral and ethical values, emotional skills and spiritual well being (learning to be), the curriculum design focuses on several components, namely:

  - Basic skills (languages, mathematics)
  - Spirituality (religious education)
  - Values and attitudes (moral/ethical education)
  - Humanities and environment (social science, science)
  - Self-development (vocational skills, co-curriculum)
  - Aesthetics and creativity (arts, music).

Pedagogical approaches in the classroom place emphasis on thinking and creativity through:

- Activity-based teaching and learning processes, such as problem solving, analytical decision making, critical and creative thinking using high level questions; and
- Student-centred strategies such as inquiry and discovery, self-access learning, self-paced, and self-directed.

**The attitudes and values to be imparted to students**

Attitudes and values are given emphasis to produce virtuous individuals who are responsible and able to contribute towards the prosperity and development of the nation. Values education is taught through Islamic Religious Education and Moral Education in both the elementary and secondary levels. The national curriculum stipulates that Islamic Education is compulsory for Muslim students, and moral education is compulsory for non-Muslim students.

The Islamic education curriculum places emphasis on values and attitudes as follows:

- Appreciation and promotion of peace for mankind;
Internalization of desirable values, such as tolerance, cooperation, respect for each other in international relations;
Promotion of a caring and cooperative society;
Appreciation of peace, harmony and solidarity in the Muslim world;
Ways and means to promote cooperation among the Muslim world;
Awareness and internalization of desirable values such as patience, diligence, caring and loving towards others; and
Promotion of honesty, inter-personal communication and interest in entrepreneurship.

Values imparted in Moral Education cut across different social, ethnic, and religious interests. The core values are compassion, self-resilience, humility, respect, love, justice, freedom, courage, physical and mental cleanliness, honesty, diligence, cooperation, moderation, gratitude, rationality, and public spiritedness.

(b) Promoting Interdisciplinarity in Basic Education Curriculum

Reconceptualizing subject-matter contents into interrelated themes or topics

The school curriculum is subject-based and is designed for using both content-based and outcome-based approaches. The content-based approach lists the topics or themes of the subject area and lists of abilities or skills that students are expected to acquire or master for the topics or themes.

Coherence and integration between and across subject areas are emphasized. The concept of integration is manifested as follows:

- Integration of skills in a subject, e.g., in language teaching, oral skills, aural skills, reading and writing are incorporated in a lesson;
- Integration of skills across a number of subjects, e.g., drawing in mathematics;
- Integration of subject contents, e.g., elements of science in a language lesson;
- Integration of values in subjects, e.g., cleanliness and safety in science experiments;
- Integration of knowledge and practice, e.g., food and nutrition in health education—put into practice in eating habits;
- Integration of old experiences and newly acquired experiences; and
- Integration of classroom learning and co-curriculum activities, e.g., language skills in a Debating Society.

Reorienting instructional methods and pedagogies

To make learning more interesting, motivating and meaningful, instructional methods and pedagogies will be oriented towards more holistic approaches. In the newly revised curriculum, due emphasis will be on classroom teaching and learning processes. Teachers will be required to

- Use an appropriate mix of learning strategies;
- Use a wide range of teaching and learning resources;
- Accommodate different learning styles according to students’ needs; and
- Employ different classroom activities in small groups or individually.

A list of teaching and learning strategies that have been identified include
• Mastery learning
• Creative and critical thinking skills
• Inquiry and discovery
• Learning how to learn
• Self-access learning
• Integrative learning system
• Contextual learning
• Web-based learning
• Computer-aided learning/instruction (CAL/CAI).

1.3 Designing and implementing local curricula

The national curriculum specifies the knowledge, skills and values that are expected to be acquired by pupils at the end of their respective periods of schooling and includes the core subjects and other elective subjects as set out in subsection (1) of the Education Act. Administrative circulars are sent to all schools detailing out the adoption of the National Curriculum.

The national curriculum is implemented using the decentralized mode. At the Ministry level, the Central Curriculum Committee, the highest policy-making body in the organization, established the working committee, the Committee for Implementation of Primary and Secondary School Programs. It is supported by a Technical Working Committee to coordinate and to ensure that reforms would be well implemented from every aspect.

At the state level, the State Curriculum Committee is headed by the state director of Education who

• Monitors, assesses and guides principals, headmasters and teachers in the implementation of the curriculum;
• Coordinates the implementation of activities policymakers and implementers at the Ministry, division/district and school levels;
• Coordinates the use of resources for curriculum implementation;
• Plans, manages and coordinates courses organized for teachers by the State Education Department;
• Plans, manages and implements innovative projects; and
• Improves professionalism among teachers.

At the district level, the District Curriculum Committee carries out the planning and implementation activities. Similarly, at the school level, the School Curriculum Committee provides guidance and assistance for implementing the curriculum at the school and classroom levels, as shown in figure 2.

• Existing infrastructure support for the national curriculum (i.e., adequacy of classrooms and physical facilities, and of equipment, laboratories and libraries in schools and learning centres)

To ensure effective teaching and learning at all levels schools are provided with better facilities, for example, science laboratories, computer laboratories, and workshops for living
skills and home science are provided. The number of primary schools and secondary schools with such facilities in year 2000 is shown in table 1 below:

Table 1: Laboratories and Workshops In Primary and Secondary Schools (Year 2000)

<table>
<thead>
<tr>
<th>Types of School</th>
<th>Science Laboratories*</th>
<th>Computer Laboratories</th>
<th>Workshops Workshops</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Schools</td>
<td>5,447</td>
<td>1,860</td>
<td>4,184</td>
</tr>
<tr>
<td>Secondary Schools</td>
<td>9,846</td>
<td>1,340</td>
<td>3,255</td>
</tr>
</tbody>
</table>

Source: Education Blueprint 2001-2010, Ministry of Education Malaysia.
*The laboratories are based on the ratio of 5 laboratories to 36 classes.

Figure 2. Curriculum Implementation Process

- The state of textbooks and instructional materials

Textbooks

Textbooks prescribed are in the recommended lists released by the Ministry of Education. A range of alternatives is available for the secondary level. In Malaysia, textbooks continue to be useful as the main resource for teachers and students alike. The textbooks produced by the Textbooks Division of the Ministry of Education are transformation or interpretation of the syllabus given to the students. The syllabus forms the integral framework of which the textbooks are conceived and produced. Several main factors have been taken into consideration and strongly emphasized in the development of Malaysian textbooks, i.e., local Malaysian context and universal moral values. The textbooks are free from sensitive/negative/subversive elements and stereotyping.

All students have access to approved textbooks, either by availing themselves of the Textbook Loan Scheme or by purchasing their own books. The Textbook Loan Scheme provides free textbooks on loan to needy pupils especially those from the rural and poor areas in order to equalize educational opportunities in line with the National Educational Policy. The scheme also aims to reduce the financial burden on poor parents who have school-age children. Beneficiaries are determined by parents’ income. Pupils’ parents with monthly income of less than RM1,000 are eligible to receive textbooks on loan.

Instructional Materials

There are several types of instructional materials provided by the Ministry of Education:

a. Subject syllabi (primary/secondary level), which indicate general aims, objectives and content organization.
b. Syllabus specification with detailed explanation of the learning objectives/outcomes/scope and sequence of skills/competencies/knowledge to be acquired for each level of schooling.

c. Teacher’s guidebooks, resource books for teachers, learning kits with suggested strategies/approaches and classroom activities.

d. Teaching and learning modules.

The training of teachers

There are three types of pre-service courses conducted at the teachers training colleges, namely:

- Diploma in Teaching (Primary)—3 years
- Post-Diploma Certificate in Teaching (Primary and Secondary)—1 year
- Post-Graduate Diploma in Teaching (Secondary) —1 year

The minimum entry requirements for acceptance in the programmes are:

- SPM/MCE (Malaysian Certificate of Education) or SPVM/MCVE (Malaysian Certificate of Vocational Education) with credits in Malay language and four other subjects.
- STPM/HSC (Higher School Certificate) with 3 credits, which include a pass in Malay language at SPM/MCE level.

The Malaysian Teaching Diploma (DPM) Programme is an attempt to provide quality education to student teachers. Emphasis is on upgrading the quality of training, which includes professionalism in teaching, being student-centered, literacy in Information Technology (IT) and globalization to fulfill the aspiration of the National Philosophy of Education and the Philosophy of Teacher Education.

The DPM training programme emphasizes school-based training, focusing on the integrated concept which is self-directed, usage of various media and reflective thinking to bridge the theoretical and practical aspects of teaching and learning in the classroom.

This course consists of four components: education in Malaysia (inclusive of Knowledge and the use of Teaching and Learning Resources), Educational Psychology, Pedagogy, and Guidance and Counseling. The four disciplines are interrelated, systematic and practical. This course content should actively involve student teachers in a variety of approaches and strategies. The summary of subjects components and time allocation according to semester (see page 165).

The Post-Graduate Diploma in Teaching is another course, which provides training for graduates to become teachers. Besides professional knowledge and pedagogical skills, the curriculum of this course also covers knowledge, skills and values that need to be taught to pupils in various subjects at the primary and secondary levels.

Besides preparing teachers for professional advancement as agents of change with the introduction of new programmes, special in-service training is also provided to teachers who are required to teach subjects for which they are not adequately trained. In-service professional development of teachers is on-going activities, and national plans are drawn up on long-term as well as yearly bases.

Various strategies are used to ensure that teachers effectively implement new curriculum initiative. The most common strategy is through the Cascade Training Model, which is a
quick way of getting information spread down to the roots. Selected key personnel from each state attend training courses at the national level in the Curriculum Development Centre or Examination Division of the MOE. These resource personnel then conduct courses at the state/district level. Teachers selected to attend courses will disseminate information to fellow teachers at their schools.

To help teachers implement the new curriculum programmes, instructional materials, such as teacher’s guidebook for the respective subjects and teaching-learning modules, are published by the CDC and disseminated to all schools.

<table>
<thead>
<tr>
<th>Component</th>
<th>Semester</th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
<th>V</th>
<th>Total number of hours</th>
<th>Credit (Cr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education in Malaysia I &amp; II</td>
<td></td>
<td>2 Cr</td>
<td>20hrs</td>
<td></td>
<td></td>
<td>1 Cr</td>
<td>15 hrs</td>
<td>35</td>
</tr>
<tr>
<td>Production and use of Teaching and Learning Resources*</td>
<td></td>
<td>10 hrs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Educational Psychology I &amp; II</td>
<td></td>
<td>2 Cr</td>
<td>30 hrs</td>
<td>2 Cr</td>
<td>30 hrs</td>
<td></td>
<td></td>
<td>60</td>
</tr>
<tr>
<td>Pedagogy I, II and III</td>
<td></td>
<td>2 Cr</td>
<td>30 hrs</td>
<td>2 Cr</td>
<td>30 hrs</td>
<td>2 Cr</td>
<td>30 hrs</td>
<td>90</td>
</tr>
<tr>
<td>Guidance and Counseling I, II and III</td>
<td></td>
<td></td>
<td>1 Cr</td>
<td>15 hrs</td>
<td>1 Cr</td>
<td>15 hrs</td>
<td>1 Cr</td>
<td>15 hrs</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>4 Cr</td>
<td>60hrs</td>
<td>4 Cr</td>
<td>60hrs</td>
<td>3 Cr</td>
<td>45 hrs</td>
<td>3 Cr</td>
</tr>
</tbody>
</table>

- **Feedback Mechanisms on the Implementation of the National Curriculum**

**Institutional supervision and reporting systems**

School inspectors look into and assess the teaching and learning aspects, use of teaching and learning materials, school management which includes management of school office, basic facilities, textbook loans and discipline. Also assessed is the management style, overall school climate and students’ behavior. The school inspectors guide and advice teachers and discuss recommendations with them and the school principals. Reports on the inspection are sent to the schools concerned and the State Education director.

In addition, an instrument of the Education Quality Standard Improvement (EQSI) tailored to meet individual needs of the school was formulated by the Education Ministry’s School Inspectorates with the aim of improving the quality of schools. Schools are required to assess their own quality standard and work towards its improvement. The EQSI instrument comprises four main categories, namely, management development, human resource development, educational development and organizational development.

At the state level, the subject supervisors of the State Education Departments also conduct continuous supervision to monitor the implementation of the various subjects. The District Education Offices also constantly monitor and supervise the implementation of the curriculum.
Monitoring and evaluation are normally carried out in every phase of curriculum implementation. In addition to the supervision by the school inspectors and subject supervisors at the State Education Departments, monitoring and supervision are also carried out by the various divisions within the Ministry of Education, i.e., Curriculum Development Centre, Examination Syndicate, the School Division, Teacher Education Division and Education Planning and Policy Research Division. The area of focus differs for each division.

**Achievement indicators**

The enrolment rates in government and government aided schools are shown in below.

<table>
<thead>
<tr>
<th>Level of Education</th>
<th>1990</th>
<th>%</th>
<th>1999</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pop. Age 6 –11+</td>
<td>2,451,800</td>
<td>-</td>
<td>3,019,728</td>
<td>-</td>
</tr>
<tr>
<td>Primary * 94.92</td>
<td>2,447,206</td>
<td>99.81</td>
<td>2,866,435</td>
<td></td>
</tr>
<tr>
<td>Pop. Age 12+ –15+</td>
<td>1,135,300</td>
<td>-</td>
<td>1,474,798</td>
<td>-</td>
</tr>
<tr>
<td>Lower Secondary 84.50</td>
<td>942,801</td>
<td>83.04</td>
<td>1,246,131</td>
<td></td>
</tr>
<tr>
<td>Pop. Age 16+ –17+</td>
<td>735,500</td>
<td>-</td>
<td>948,244</td>
<td>-</td>
</tr>
<tr>
<td>Upper Secondary</td>
<td>361,411</td>
<td>49.14</td>
<td>671,900</td>
<td>70.86</td>
</tr>
</tbody>
</table>


* Dropped in rate due to students enrolling in private schools

The national achievement rates in the Primary School Assessment Test (UPSR) for National Language and English (1996-1999) is shown below.

<table>
<thead>
<tr>
<th>Schools</th>
<th>National Schools</th>
<th>National-Type Schools (Chinese)</th>
<th>National-Type Schools (Tamil)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malay</td>
<td>Malay (%)</td>
<td>Malay (C) (%)</td>
<td>Malay (W) (%)</td>
</tr>
<tr>
<td>1996</td>
<td>53.6</td>
<td>85.9</td>
<td>80.84</td>
</tr>
<tr>
<td>1997</td>
<td>54.0</td>
<td>87.0</td>
<td>81.6</td>
</tr>
<tr>
<td>1998</td>
<td>55.5</td>
<td>87.3</td>
<td>78.8</td>
</tr>
<tr>
<td>1999</td>
<td>56.9</td>
<td>87.5</td>
<td>78.9</td>
</tr>
</tbody>
</table>


C = Comprehension
W = Writing
In the national schools, the medium of instruction is the Malay language. The medium of instruction in the National Type School (Chinese) is Chinese Language and in the National-Type School (Tamil), Tamil language.

The Primary School Assessment Test results for mathematics and science for the years 1996 to 1999 is shown below.

Table 4: Results of the Primary School Assessment Tests (UPSR) in Science and Mathematics (1996–1999)

<table>
<thead>
<tr>
<th>Schools</th>
<th>National Schools</th>
<th>National-Type Schools (Chinese)</th>
<th>National-Type Schools (Tamil)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Science</td>
<td>Math</td>
<td>Science</td>
</tr>
<tr>
<td>1996</td>
<td>-</td>
<td>74.5</td>
<td>-</td>
</tr>
<tr>
<td>1997</td>
<td>74.9</td>
<td>75.0</td>
<td>82.4</td>
</tr>
<tr>
<td>1998</td>
<td>76.0</td>
<td>77.5</td>
<td>77.3</td>
</tr>
<tr>
<td>1999</td>
<td>74.3</td>
<td>76.2</td>
<td>82.6</td>
</tr>
</tbody>
</table>


External or commissioned reviews

In order to ensure smooth implementation of the national curriculum, several subject committees at the national level have been formed particularly for subjects like national language, English, mathematic and science. The role of such a committee is to review regularly the effectiveness of the teaching and learning of the subjects concerned. Changes in the curriculum contents are made based on the recommendations of the committees. Other subject committees are formed from time to time to review the subject curriculum and make recommendations for improvement.

From time to time, as required, special task forces/committees are commissioned by the MOE to look into specific matters concerning education. Findings and recommendations from these commissions are taken into consideration in policy revisions.

Research-based studies on the national curriculum

There is no formal organization evaluating the implementation of the curriculum. Feedback is usually reported by the School Inspectorate, State/District Education Departments. The CDC also conducts evaluation studies periodically on specific aspects of the curriculum.

However, the MOE commissions local universities to conduct evaluation studies on the implementation of curriculum in schools. For example, The Science University of Malaysia was commissioned to carry out a study on the implementation of the Integrated Curriculum for Primary Schools. The Education Planning and Policy Research Division conducted a study on the implementation of the Integrated Curriculum for Secondary Schools. The findings of these studies provide input for curricular improvement.

In general, the results of the formative evaluation are used by curriculum planners to revise and improve the implementation of a curricular programme. On the other hand, findings from summative evaluation concerned with the effectiveness of the whole curricular programme are used in making major decisions on whether to continue/expand/modify or terminate certain curricular programmes.
1.5 Evaluation of Curriculum Reform

Strengths and Weaknesses of the National Curriculum

*Its strength*

One strength in the practice of curriculum development is the collective and participative nature of decision making on curriculum matters. Although certain agencies are responsible for the school curriculum, the actual planning, development and other related activities are shared out. The participation of various stakeholders ensures that related activities are coordinated.

The national curriculum is an integrated curriculum emphasizing on the holistic development of the students. It provides opportunities for the students to develop basic skills, knowledge, values, attitudes, interests and talents. Specifically, the national curriculum develops skills in the following aspects:

- Social skills
- Intellectual skills
- Physical skills
- Spiritual skills
- Aesthetic values (creativity and appreciation)
- Moral values
- Information and Communication Technologies (ICT) skills.

The emphasis given to the curricular programmes thus expose the students to relevant skills needed by the nation. The national curriculum ensures that the nation’s youth today are well prepared to face an increasingly competitive and challenging world of tomorrow.

For the successful implementation of the national curriculum, concerted efforts are made to expand infrastructure support and physical facilities, such as libraries, science laboratories, workshops for subjects like living skills and home science to schools. Various measures aimed at improving teaching and learning processes are also implemented.

The Ministry of Education ensures the availability of suitable teachers to implement the curriculum. Qualified and trained teachers teach the students. The pre-service and in-service training courses provided to the teachers by the Ministry of Education enhance the quality of the delivery system. The professionalism of the teachers from diverse subject specializations is given emphasis.

Textbooks and other instructional materials reflecting innovative teaching and learning strategies are made available to all schools. Students from the lower income group and disadvantaged areas are given student-aid through the textbook loan scheme. In addition, specific materials have been prepared for students and reference materials are also readily available.

*Its weaknesses*

It is known that curriculum implementation cannot be ideally executed as a number of constraints operate during the process. These may include teacher factors (their qualification, motivation, skills, content, clarity, etc), pupil factors (motivation to learn, readiness for schooling, interest in school and learning, etc.), school factors (class size, management, facilities, school complex, etc.), and other factors, such as language of instruction, insufficient learning materials, teaching aids, attitude of teachers, and learners, etc.
The Curriculum Development Centre’s ICPS and ICSS guidelines for implementation strongly suggest group work as a teaching-learning strategy but large-sized classes of approximately 40-50 students hinder teachers from practicing it. Students are usually taught as a class even when they are organized into groups. Group work, which is intended to be a pedagogical change is not functioning as suggested by planners but is treated as simply a reorganization of seating arrangement of students.

Teacher attitude is another constraint to effective curriculum implementation. Most teachers prefer traditional approaches despite having been exposed to new curricular concepts and student-centred teaching approaches.

The emphasis is on examination results. Schools focus on academic excellence in public examination while parents are concerned about their children’s grades and test scores. As a result, learning is directed towards preparing students for examinations.

Teachers are over dependent on commercially produced materials rather than teacher-made materials. These commercially produced materials may not be suitable to the students’ abilities.

Wrong placement of teachers is also a barrier to effective curriculum implementation. Qualified teachers do not teach the subject of their option but are made to teach other subjects. Some teachers cannot teach effectively as they do not have the requisite knowledge and skills to teach the subjects assigned to them.

The weakness in the dissemination strategy is another constraint. The cascade system of using key personnel has resulted in the dilution of messages, which the curriculum planners and developers have conceptualized.

Some major recommendations for improving the national curriculum

To realize the goals and objectives of the national curriculum, some recommendations are made to improve the quality of the curriculum and to prepare students to meet the challenges of the twenty-first century. The following are some of the recommendations:

- Help students achieve overall balanced development;
- Integrate knowledge, skills, values and correct use of language;
- Achieve intended learning outcomes for different ability levels; and
- Acquire multidisciplinary, thematic, and continuous learning;
- Foster acquisition of knowledge, skills, and attitudes suitable for the Information Age.

Pedagogical approaches in the classroom, which emphasize thinking and creativity, should be given priority. Activity-based teaching and learning processes, such as problem solving, creative, innovative, analytical and decision making using high level questions that help generate thinking will be dominant. Student-centred strategies have to be reflected in the classroom environment where the teacher will often play the role of “a facilitator of learning.”

The use of leading-edge technology needs to be emphasized in the teaching and learning processes to foster the development of technologically literate knowledge workers for the Information Age. The Ministry of Education has ventured into various pilot projects to gauge the different approaches and possibilities for the effective use of IT in education.
The scope of assessment has to be more holistic. It will not only cover achievement progress but also readiness, aptitude and talents to provide full information regarding the student’s performance. It will also be learner-friendly and open to continuous improvement. Assessment of teaching learning will use:

- Element-based and criterion-referenced items
- Multiple approaches and instruments
- School-based assessment
- Students’ folios

**Recent and Ongoing Curricular Reform Initiatives**

Education in Malaysia operates within the context of rapid social and economic change. The curriculum must help students to be adaptable and to play their full part in this changing environment. Recent initiatives in curricular reforms are focused on enabling students to develop skills to cope with new areas of knowledge and development in technology.

**Status of Implementation**

**i. Outcome-based learning**

In 1999–2000, a major curricular review for both primary and secondary curriculum was undertaken. In the newly revised curriculum, emphasis is on outcome-based learning. The learning outcomes are set out in three levels to indicate progression and continuity of learning. All students are expected to reach level 1.

**ii. Introduction of new subjects**

At upper secondary level new subjects have been introduced progressively in selected schools nationwide. These subjects are:

- Invention
- Information Technology
- Music Education

**iii. Pedagogical changes**

To enable all students to achieve the learning objectives to the best of their ability, emphasis is on effective teaching and learning processes. Teachers are encouraged to employ a variety of pedagogical approaches which are student-centred. These include:

- Mastery Learning
- Contextual Learning
- Constructivism
- Multiple Intelligence
- Modular Learning
- Futures Studies

**iv. Introduction of new elements**

New elements listed below, are introduced into existing curriculum/subject syllabus:

- Elements of literature in teaching the national language and English language.
- Science-process skills
• Critical and creative thinking skills
• Patriotism
• Environmental Education
• Family health education.

v. Use of Information and Communication Technologies (ICT)

The use of leading-edge technology is emphasized in the teaching and learning processes. This aims to foster the development of technologically literate knowledge workers for the Information Age. Various pilot projects to gauge the different approaches and possibilities for effective use of ICT in education have been undertaken. These projects include:

• The concept of Smart School pioneered in 90 selected schools;
• Computer literacy projects aimed at enabling students to acquire basic knowledge and skills in the use of computer software applications;
• Education network whereby local area network (LAN) has been set up in participating schools;
• Electronic resource centers, which provide Internet access in the school resource centers;
• Computer-aided instruction and learning using stand-alone microcomputers and educational software as tools for learning;
• Use of application software and courseware in which selected educational software are used in the teaching and learning, e.g., computer-aided design (CAD) and AutoCAD. Courseware for science, mathematics, national language and English language are developed locally as materials for teaching and learning; and
• Web-based learning using an education portal (Malaysian School Net) set up by MOE to facilitate Internet access to schools.

Factors in the implementation of curricular reform initiatives

Several factors facilitate the implementation of curricular reform initiatives, such as the recent introduction of new subjects and programmes in schools. The facilitating factors include findings of research and studies, public opinions, world trends, social and economic needs and political pressures. In addition, curricular reform initiatives in Malaysia are further facilitated with the existence of the following supporting factors at varying degrees:

• The government’s continued efforts to expand and improve education and training through increase in the budget for education;
• The experience over the years of the nation’s education policy in enhancing quality and access to education to meet the needs of the rapid national development;
• Availability of basic infrastructure and training, i.e., in-service teacher training, seminars, forums and workshops to familiarize teachers with the curricular reforms and to upgrade teachers’ efficiency;
• Continuous training received by officers, both locally and overseas, covering a wide range of topics which helps the officers to gain more knowledge and experience in planning and implementing curricular reform initiatives;
• Public awareness and support in carrying out educational reforms to fulfill the requirements of cultural, social, and economic development;
• The nation’s aspiration to produce specialists and IT-literate workers who are technically competent to enable the nation to compete internationally and meet the demands of the K-economy in the twenty-first century;
• Efforts by both the government and private sectors to intensify the acquisition and application of information and communication technologies in all fields of life as a result of globalization and modernization; and
• The strong commitment and awareness among parents of the importance of education in producing Malaysians who are creative and innovative.

Assessment of the National Curriculum for Basic Education

The national curriculum is appropriate for the respective age groups. It is dynamic, child-centred and responsive to the diverse groups that are represented in each classroom.

The integrated approach as the main focus in the design of the national curriculum is well received. There is intra- and inter-subject integration in all the subjects in the curriculum. In the curriculum, the elements of knowledge, skills and values are incorporated in order to bring about the integrated development of the intellectual, spiritual, emotional and physical aspects of the individual.

The national curriculum provides contents which are Malaysian oriented and of much local relevance. The curriculum addresses issues of local and national concerns with more local application from the Malaysian perspective.

Revised recently, the national curriculum stresses the different levels of learning outcomes, with appropriate teaching learning approaches, strategies and instructional materials for students with different needs and capabilities. The use of ICT is given emphasis. The curriculum provides the foundation for students to cope with everyday life and life-long education.

Proposals for advancing the new framework for a basic education curriculum

For the implementation of the newly revised curriculum for basic education in 2002–2006, a number of activities have been identified in table form below.

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>YEAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-service training of master trainers (subject based—central level)</td>
<td>2002–2005</td>
</tr>
<tr>
<td>In-service training of teachers (subject based—state/district level)</td>
<td>2002–2006</td>
</tr>
<tr>
<td>Workshops to develop new curriculum materials (modules, guidebooks, etc.)</td>
<td>On-going</td>
</tr>
<tr>
<td>Workshops to develop training packages (central level)</td>
<td>2002</td>
</tr>
<tr>
<td>Seminars/Meetings/Briefings (central/state/district level)</td>
<td>On-going</td>
</tr>
</tbody>
</table>

Note: The content of in-service training focuses on pedagogical approaches and teaching learning strategies.

Proposed Framework for Primary Science Curriculum Years 1–3
<table>
<thead>
<tr>
<th>Aim and Objectives</th>
<th>Learning Outcomes</th>
<th>Teaching Approaches</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Aim</strong></td>
<td><strong>Science Process Skills (Learning to do)</strong></td>
<td>Mastery learning</td>
</tr>
<tr>
<td></td>
<td>Observation, categorization, prediction, communicate, measure and use of numbers, relate space and time, compare and contrast, sequencing, use science apparatus</td>
<td>Contextual learning</td>
</tr>
<tr>
<td></td>
<td><strong>Knowledge of Science (Learning to know)</strong></td>
<td>Inquiry and discovery</td>
</tr>
<tr>
<td></td>
<td>Self, environment, daily activities, measurement, sound, light, heat, magnet, characteristic of materials, use of materials, food, earth, moon and sun, weather, technology, invention</td>
<td>Use variety of resources</td>
</tr>
<tr>
<td></td>
<td><strong>Scientific Attitudes and Values (Learning to be/Learning to live together)</strong></td>
<td>Use of modules</td>
</tr>
<tr>
<td></td>
<td>Interest in science and technology, curiosity, critical and analytical, cooperative, rational, confident, inquisitive, appreciative, clean and healthy</td>
<td>Inculculati on of values</td>
</tr>
<tr>
<td><strong>Objectives</strong></td>
<td>Investigating the living world</td>
<td><strong>Teaching and Learning Strategies</strong></td>
</tr>
<tr>
<td>Acquire basic science process skills and thinking skills</td>
<td>Investigating the physical world</td>
<td>Mastery learning</td>
</tr>
<tr>
<td>Acquire basic knowledge in science</td>
<td>Investigating the material world</td>
<td>Contextual learning</td>
</tr>
<tr>
<td>Relate knowledge of science and technology to natural phenomena and the environment</td>
<td>Investigating the earth and universe</td>
<td>Inquiry and discovery</td>
</tr>
<tr>
<td>Possess curiosity towards natural phenomena</td>
<td>Investigating the technology world</td>
<td>Use variety of resources</td>
</tr>
<tr>
<td>Interest in science and technology</td>
<td></td>
<td>Use of modules</td>
</tr>
</tbody>
</table>

**Teaching Approaches**

- Mastery learning
- Contextual learning
- Inquiry and discovery
- Use variety of resources
- Use of modules
- Inculculati on of values