DepED
DEPARTMENT OF EDUCATION

K to 12 in Southeast Asia

Regional Comparison of the Structure, Content, Organization, and Adequacy of Basic Education

K TO 12 EDUCATION IN SOUTHEAST ASIA

Regional Comparison of the Structure, Content, Organization, and Adequacy of Basic Education

Department of Education and SEAMEO INNOTECH

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FOREWORD

"We need to add two years to our basic education. I want at least 12 years for our public schoolchildren to give them an even chance at succeeding."

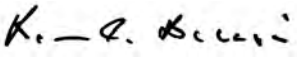
—President Benigno Simeon S. Aquino III

The widespread international commitment to realize Education for All (EFA) solidifies the inherent value of quality basic education not only for individual development but also for the overall social development of any nation. At the very least, governments are providing quality basic education to meet the basic learning needs of children, the youth, and adults. More recently, governments are pursuing "world class education" to improve their performance in international surveys such as the Trends in International Mathematics and Science Study (TIMSS) and Programme for International Student Assessment (PISA). In some countries, this review led to fundamental changes in curriculum with a view to improving educational policies and outcomes.

In the Philippines, the education goal is closely linked to the *Philippine EFA Plan of Action 2015* that includes Critical Task No. 5, mandating the expansion of basic education so that by 2015 the Philippines will have lengthened its cycle of basic education to 12 years. As such, President Benigno Simeon Aquino III, in his first State of the Nation Address (SONA) in July 2010, made it a priority to lengthen the education cycle in the country. Aligned with the current administration's commitment, the Philippines Department of Education (DepEd) has been preparing the Kindergarten to Grade 12 (K to 12) Basic Education Program with the aid of various international organizations and members of the private sector.

The Philippine DepEd, through the National Education For All Committee (NEC), as part of its international commitment to improve the quality of EFA in the Philippines, engaged the Southeast Asian Ministers of Education Organization Regional Center for Educational Innovation and Technology (SEAMEO INNOTECH) to undertake a regional review of the curricula of four Southeast Asian countries—Brunei Darussalam, Malaysia, Singapore, and the Philippines. The project, which began in February 2011, gathered information from several sources, including interviews, a review of literature; a survey; a workshop; as well as dialogs with country experts, educators, school officials, and curriculum development officials from Brunei Darussalam, Malaysia, Singapore, and the Philippines. Additional data on assessment models was obtained from Hong Kong, which provides seamless secondary education, for comparison.

By benchmarking the Philippine education curriculum's content and structure, we now affirm that basic education in the country must undergo reforms to meet the demands of the twenty-first century. We are grateful to the education officials from Brunei Darussalam, Malaysia, Singapore, and the Philippines who provided us with the data to analyze. We trust that this research report will contribute valuable information to the Department of Education as it embarks on the challenging task of implementing the K to 12 basic education reform agenda in the Philippines.



Dr. Ramon C. Bacani
Center Director

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This report was prepared under the general guidance of SEAMEO INNOTECH Center Director, Ramon C. Bacani, and Manager of Programs, Philip J. Purnell. Led by Senior Specialist, Ethel Agnes Valenzuela, the team's members include Mary Sylvette Gunigundo, Specialist; Cristina Moreno and Elaissa Marina Mendoza, Senior Research Associates; Rhea Christina Rabin, Project Associate Researcher; and Merjielyn Calimag, Project Research Assistant.

GLOSSARY OF TERMS

"A-Level" Certificate of Education	An advanced (level 3) qualification normally taken in Senior High Schools or junior colleges.
Applied Education Program	Caters to less academically inclined students by offering less study time compared with the General Education Program (GEP).
Art school	A secondary school that implements a special curriculum and support programs for artistically gifted and talented children and adolescents.
Assembly	A school meeting of several classes for a group activity such as community singing.
Assessment	Any process or means that aims to identify the knowledge, skills, and attitudes of a learner.
Bahasa Melayu	Literally means "Malay" or the "Malaysian language," which is spoken by the Malay people who are native to the Malay Peninsula. It is the official language of Malaysia and Brunei Darussalam and is one of the four official languages of Singapore. It is also a mother tongue/national language subject in the said countries.
Basic education	The education intended to meet children's basic learning needs, which lays the foundation on which subsequent learning can be based. It encompasses early childhood, Elementary, and high-school education as well as Alternative Learning System (ALS) for Out of school youth (OSY) and adult learners and education for those with special needs (GOBEA, 2001).
Broad-based curriculum	Delivers learning in literacy, numeracy, bilingualism, the sciences, humanities, aesthetics, PE, and CME.
Broad banding	An approach to grouping learners wherein perceived abilities are not the only criterion used even though these may be the most significant. Other factors in constructing groups may be influential such as gender, race, and ethnic balance as well as perceived motivations, efforts, and behaviors of the learners involved.

Civic and Moral Education	Focuses on developing the moral well-being of students by helping them acquire and live by values that will guide them to make appropriate choices and to determine the proper behavior and attitude to exhibit to others and the environment.
Co-curriculum	A modern term for a program of extracurricular activities, which may be optional or compulsory. In Malaysia, a co-curriculum extends the teaching and learning process beyond the classroom, providing students opportunities to increase, reinforce, and put into practice the knowledge, skills, and values they acquired. In Singapore, co-curricular activities enrich students' experience through clubs and societies, music and dance, outdoor education, sports, sea sports, and uniformed groups.
Common curriculum	The educational program which all state-run institutions are expected to follow.
Comparative education	The study of similarities and differences between national education systems.
Content standards	Identify the knowledge, skills, and values related to a particular course discipline within a stipulated duration of schooling.
Compulsory education	A period of educational attendance required in a certain country. It usually covers ages 6–16 or up to a certain grade level.
Compulsory subjects	Refers to subjects required by the government for state-funded schools.
Core subject	The main essential part of a curriculum or an activity. It is often mandatory for all types of educational institutions.
Curriculum	A course of study in a school or college. More properly, it is defined as the overall rationale for or essential principles and features of an educational program. It refers to a list of educational outcomes that need to be covered and completed during a specific training program.
Curriculum alignment	Curriculum alignment matches the curriculum and one or more of the following elements: state standards, standardized tests and/or state tests, curriculum-embedded tests, student assignments, lesson plans, textbooks and instruction.

Curriculum design	Refers to an educational philosophy or philosophies underlying a course of study in a school or college. It may be categorized as student-centered, problem- based, integrated, community-based, elective-driven, systematic, teacher-centered, subject discipline-based, or uniform.
Curriculum organization	Curriculum content and the process of selecting curriculum elements for a subject, the existing social life, and the students' experience then arranging selected curriculum elements to form a curriculum structure and type.
Curriculum structure	Competencies and learning outcomes, time allocation, and levels and degrees of assessment. It is like the skeleton of a body that gives direction and support to activities and determines outcomes.
Daycare	The provision of daytime training, supervision, recreation, and often medical services to children of preschool age.
Differentiation	In education, this is the process wherein teaching is adapted to suit the needs of different learners within a course, lesson, or classroom. It can involve modifying things such as the topic or subject matter, tasks, or levels of support provided.
Elective	An optional course that students select from a number of choices. It is rarely central to a course of study but is more likely to offer opportunities for specialization or to follow particular interests.
Elementary education	The first stage of compulsory formal education primarily concerned with providing basic education and usually corresponding to six or seven grades.
Evaluation	Evaluation is the process of determining the value or worth of a program, course, or other initiative, toward the ultimate goal of making decisions about adopting, rejecting, or revising the said program, course, or initiative.
Extracurricular activities	Conducted outside an institution's regular program or course of study. Certain sports, choir, or orchestra practices, which take place at lunchtime or after school are viewed as extracurricular, also known as co-curricular, activities.

Foundation stage	The elementary level in Singapore from grades 1–4 (6–10 years old), which aims to provide children "a firm foundation in English, their mother tongue (Chinese, Malay, or Tamil), and mathematics."
Functional literacy	The ability to effectively communicate, scientifically solve problems, think critically and creatively, sustainably use resources, be productive, develop a sense of community, and expand one's world view (LCC).
General Certificate of Education	An academic qualification that examination boards in the United Kingdom and a few of the Commonwealth countries confer on students. It traditionally comprises two levels—the ordinary level ("O-Level") and the advanced level ("A-Level").
General Education Program	Offers a generic curriculum for secondary school students.
Higher education	The stage of education beyond the secondary level, especially in a college or university.
Horizontal articulation	This refers to "thematic teaching" exemplified when a topic taught by different groups (e.g., year 1, year 2, and or year 3) without undue information overlaps.
Integrated education	An interdisciplinary approach to teaching or learning as opposed to a subject-specific one.
Integrated living skills	A technologically-based subject in forms 1–3 in Malaysia, providing useful and functional skills which the students can apply in the most productive way to adapt to technological changes in their daily lives.
Integrated Program	Seamless secondary school and junior college enriched education in Singapore, which does not require students to sit for the GCE "O-Level" Examinations.
Islamic religious study	A learning area under the SPN 21 of Brunei Darussalam for Muslim learners, which aims to foster and promote Islamic education.

Intermediate education	A phase of education in the Philippine elementary level comprising grades 4–6.
Junior college	A two-year postsecondary program in Singapore that students take prior to university education.
Kindergarten	A program or class for children aged 4–6, which serves as introduction to school. It literally means "children's garden."
Learning goals	This refers to educational outcomes or achievements toward which teaching and learning are consciously directed.
Learning outcomes	Aims or objectives of a learning experience, usually a list of the knowledge, behaviors, or attitudes that learners are expected to possess or display at the end.
Learning standards	It is a set of prescribed measurable criteria or indicators to assess the quality of learning and learning achievements of students.
Lower secondary	Level 2 education offering in Brunei Darussalam, which comprises years 7 and 8. In Malaysia, lower education comprises forms 1–3. In Singapore, it refers to the secondary 1 and 2 levels.
Madrasah (plural, madaris)	The Arabic term for an Islamic school.
Makabayan	Literally translates to "nationalism." It is an integrated subject in the Philippine DepEd curriculum comprising social studies, HE, livelihood education, music, arts, PE, health, and character education. It aims to provide practical knowledge, life skills, and appreciation of the Filipino culture.
Melayu Islam Beraja	Translates to "Malay Islamic monarchy," which inculcates virtues as well as praiseworthy and moral values, and develops love of religion, monarchy, and nation in Brunei Darussalam.
"N-Level" Examinations	This level is taken after four years in the normal academic or normal technical stream. Students with GCE "N-Level" certificates can also enter vocational and technical institutes.

National Career Assessment Examinations	A national-level examination in the Philippines that evaluates students' general scholastic abilities, technical-vocational aptitudes, occupational interests, and entrepreneurial skills. The result of the test can be used to determine suitable career paths for students.
National Achievement Test	A national-level examination given to grade 4 and second year high-school students in the Philippines to test their achievement in subjects such as mathematics, English, science, Filipino, and social studies.
National schools	Government-operated Malaysian schools where the MOI is Bahasa Malaysia and English.
National-type schools	Government-assisted vernacular Malaysian schools divided into Chinese and Tamil national-type schools.
National Enrolment Ratio	This refers to enrolment of the official age-group for a given level of education expressed as a percentage of the corresponding population.
Normal academic course	A four-year course in Singapore with subjects similar to a special/express course. It leads to the GCE "N-Level" examinations and the option to take the "O-Level" examinations.
Normal technical course	A four-year course in Singapore with general subjects and subjects with technical and practical emphasis.
Nursery education	Preschool education for children aged 2–5.
"O-Level" Certificate of Education	This certificate is given after four years of express or five years of normal academic secondary education in Singapore. The Singapore GCE "O-Level" Examination is a national test that measures student attainment upon completion of the lower-secondary level. Students who obtain good GCE "O-Level" examination ratings are admitted to junior colleges wherein they can complete the GCA "A-Level" examinations after three years. Students with GCE "O-Level" certificates can also enter vocational, technical, or polytechnic institutes.

Objectives	Intended outcomes of teaching or statements of the knowledge, skills, and attitudes of desired goals. These tend to be more specific than aims and often involve the observable or the measurable.
Options	Curriculum choices for students wherein subjects are not compulsory or where a choice of topics or modules is offered within one subject area.
Orientation stage	An elementary level of education in Singapore from elementary 5–6 (age 10–12) during which children are placed in three, sometimes four, different streams according to ability (EM1, EM2, EM3, and ME3) in order to prepare them for the secondary sector course best suited to their abilities.
Polytechnic institute	An institution that offers courses of diploma levels or below, often associated with vocational or technical specializations.
Postsecondary education	Designed to prepare students for university education.
Preschool	The organized instruction for infants to children aged 5–6.
Pre-university	A postsecondary nontertiary program that offers more advanced education than upper secondary to prepare students for higher education that lasts from six months to two years such as predegree foundation courses or vocational programs.
Primary education	Refers to level 1 education as per the UNESCO ISCED for children between five and 12 years of age.
Project work	A subject in the postsecondary level or junior college level that aims to provide students the opportunity to synthesize their knowledge from various areas of learning and to critically and creatively apply this to real-life situations.
Religious or faith school	A school that has a particular religious character or links to a particular church or religious group.
Remove class or sandwich year	Refers to a transition year for students in Chinese and Tamil medium elementary schools in Malaysia. Its objective is to give students sufficient proficiency in Bahasa Malaysia.

Science school	Specialized education offering advanced science curricula for gifted students.
Secondary education	Refers to Level ISCED 2 of formal education following the elementary level that is primarily concerned with continuing basic education and expanding it to include learning employable gainful skills and is usually attended by students from age 15 (UNESCO ISCED).
Special schools	Schools that provide special education to children with special educational needs.
Special/Express course	A four-year course of general subjects and practice-oriented applied grade subjects leaning toward a polytechnic program in Singapore.
Special Needs Education Program	Offered to students in Brunei Darussalam who are visually and auditory impaired, mentally and physically challenged, and facing learning difficulties.
Specialized Education Program	Offered to students who possess special gifts in a particular field such as science or mathematics or who have talents in sports, music, or performing and/or fine arts.
Specialized schools	Provide specialized teaching or support in a particular curriculum area usually in addition to, rather than instead of, the general curriculum. These are typically associated with sports, culture, and the arts (dance or music schools).
Spiral curriculum	A term from the work of Jerome Bruner (1915), which refers to the way by which areas of learning are systematically revisited within a planned curriculum so that more detailed and more complex activities can be undertaken and related knowledge and skills developed.
Sports school	A specialized educational and training institution for highly skilled and athletic students.
Streaming	It refers to the system of organizing learners in school wherein some test of ability is applied to determine the class learners will be assigned/allowed to proceed for further study.

Subjects	Coherent bodies of knowledge (see disciplines, domains, and forms of knowledge). Educational provision, particularly beyond the elementary sector, was traditionally organized around the content of subject areas such as mathematics, science, and language.
Subject-based banding	In Singapore, this refers to a scheme wherein both schools and parents decide on a suitable mix of standard or foundation subjects, which a student should take based on his/her needs and abilities.
Standards-based curriculum	In Malaysia, this provides competencies that the students need to master in a clearly defined and stipulated duration and stage of schooling.
Technical education	A subject discipline that covers areas such as craft and design, graphic design, and technology. It traditionally dealt with topics such as woodwork, metalwork, and mechanics.
Technical-vocational education	In addition to general education, this is the study of technologies and related sciences that can lead to the acquisition of practical skills, attitudes, and understanding and knowledge related to occupations in various sectors of economic and social life.
Technical-vocational schools	Offer instruction and practical introductory experience in skilled trades such as mechanics, carpentry, plumbing, and construction.
Technology and Livelihood Education	A subject in Philippine Secondary Schools that aims to develop work habits, work ethics, and skills to develop one's productivity.
Tertiary education	Level of education after secondary school in universities and colleges. It is a form of postsecondary schooling that leads to a degree in a specific profession or discipline.
Trends in International Mathematics and Science Study	An international assessment carried out in countries around the world that measures trends in mathematics and science learning in the fourth and eighth grade levels.
Upper secondary education	Offers more specialized programs with teachers who specialize in subject areas and students who completed more or less nine years of full-time education.

Vertical articulation	A topic revisited throughout the duration of the curriculum with further information added to the sum of knowledge by years. It also refers to a process called "concentric spiral learning."
Vocational	Related or pertains to a vocation or an occupation. Vocational aspects of the curriculum require particular application to the world of work.

ACRONYMS AND ABBREVIATIONS

ADB	Asian Development Bank
AEP	Applied Education Program
ALS	Alternative Learning System
APEX	Applied Academics for Excellence
BEC	Basic Education Curriculum
BESRA	Basic Education Sector Reform Agenda
CDD	Curriculum Development Division
CHED	Commission on Higher Education
CME	Civics and Moral Education
DepEd	Department of Education
ECCE	Early Childhood Care and Education
EDCOM	Congressional Commission on Education
EDI	Educational Development Index
EFA	Education for All
ELT	English Language Testing
EPP	Edukasyong Pantahanan at Pangkabuhayan
GCE	General Certificate of Education
GDP	Gross Domestic Product
GEP	General Education Program
GMRC	Good Manners and Right Conduct
GNP	Gross National Product
HE	Home Economics
HEKASI	Heograpiya, Kasaysayan, at Sibika
HKEAA	Hong Kong Examination and Assessment Authority
HOTS	Higher-Order Thinking Skills
HRD	Human Resource Development
ICT	Information and Communication Technology
IP	Integrated Program
iPSLE	International Primary School Leaving Examination
IRE	Islamic Religious Education
IRK	Islamic Religious Knowledge
ISCED	International Standards of Classification in Education
ITE	Institute of Technical Education
LGU	Local government unit
MAPEH	Music, arts, physical education, and health
MCYS	Ministry of Community Development, Youth, and Sports

MES	Malaysian Examination Syndicate
MOE	Ministry of Education
MOI	Medium of Instruction
MTL	Mother Tongue Language
NAT	National Achievement Test
NCAE	National Career Assessment Examination
NEC	National Education for All Committee
NER	National Enrolment Ratio
NETRC	National Education and Testing Research Center
NGO	Nongovernment organization
NITEC	National Institute of Technical Education Certificate
OECD	Organization for Economic Co-operation and Development
OSY	Out-of-school youth
PCER	Presidential Commission on Educational Reforms
PCSPE	Presidential Commission to Survey Philippine Education
PDR	People's Democratic Republic
PE	Physical education
Phil-IRI	Philippine Informal Reading Inventory
PISA	Program for International Student Assessment
PMTDP	Philippine Medium-Term Development Plan
PMR	Penilaian Menengah Rendah
PPP	Public-private partnership
PSLE	Elementary School Leaving Examination
PSR	Penilaian Sekolah-Sekolah Rendah
RA	Republic Act
SEAB	Singapore Examinations and Assessment Board
SEAMEO INNOTECH	Southeast Asian Ministers of Education Organization Regional Center for Educational Innovation and Technology
SONA	State of the Nation Address
SPN 21	Sistem Pendidikan Negara Abad Ke-21
SReA	School-Readiness Assessment
SSP	Seamless Secondary Program
STPM	Sijil Tinngi Persekolahan Malaysia
StuFAP	Student Financial Assistance Program
SY	School year
TESDA	Technology Education and Skills Development Authority
TIMSS	Trends in International Mathematics and Science Study
TLE	Technology and livelihood education

TVE	Technical-vocational education
UCLES	University of Cambridge Local Examination Syndicate
UNESCO	United Nations Educational, Scientific, and Cultural Organization
UPSR	Ujian Pencapaian Sekolah Rendah

EXECUTIVE SUMMARY

PART I. INTRODUCTION

The Philippines is the only country in Southeast Asia that requires 10 years of combined elementary and secondary education prior to entering a college or a university. This relatively short period of time spent in school has been said to contribute to graduates' unpreparedness for work and to poor recognition of college degrees that consequently curtail their contributions to overall national development.

The Department of Education (DepEd), through the National Education For All Committee (NEC), adopted Critical Task No. 5 of the Philippine EFA Plan of Action 2015, which mandated the expansion of basic education so that by 2015, the Philippines will have lengthened its cycle of basic education to 12 years. As an input to its curriculum reform efforts, the DepEd engaged SEAMEO INNOTECH to conduct a comparative analysis of the Philippine education system with that of selected Southeast Asian countries that follow a 12-year basic education cycle and are recognized for meeting international standards. Moreover, the four benchmarked countries (Brunei Darussalam, Malaysia, Singapore, and Hong Kong) have also undergone reviews and modifications of their curriculum to align them with the requirements of the twenty-first century.

This report aims to map the way toward implementing K to 12 educational reforms based on the chosen benchmarks aligned with the country's national development priorities. It recommends curriculum and policy options based on the experiences of Brunei Darussalam, Malaysia, and Singapore. It specifically addresses the following questions:

A. *How do the Philippine preschool, elementary, and secondary education system compare with those of the benchmark countries in terms of?*

1. Input conditions
    - 1.1 Aims of education
    - 1.2 School Calendar
    - 1.3 Access, diversification, and progression
    - 1.4 Teacher-pupil ratio
    - 1.5 Medium of Instruction

2. Curriculum
    2.1 Curriculum structure (duration and time allocation)
    2.2 Curriculum organization (curriculum content, scope, and sequence as well as type)
    2.3 Curriculum framework and design
    2.4 Assessment and Testing

B. *What are the curriculum and policy options to align Philippine basic education with regional standards?*

Scope and Methods of Study

The study gathered comparative information from the education ministries of Brunei Darussalam, Malaysia, Singapore, and the Philippines using a range of methodologies including:

- **Review of related literature**, which involved the collection of secondary data from reports, education statistics databases, curriculum reform studies, and UNESCO education reports examining Brunei Darussalam, Malaysia, Singapore, and the Philippines

- **Curriculum survey** guided by the stated objectives of this research; survey questions were disseminated to education ministry officials who also submitted and presented country papers during a regional curriculum meeting

- **Regional BEC experts meeting**, which convened representatives of the education ministries of Brunei Darussalam, Malaysia, and the Philippines; Singapore's education ministry, meanwhile, sent general information about its education system and participated in the field study

- **Field study and validation meeting**, which involved a presentation of preliminary studies by education ministry representatives and consultative dialogs on important data outputs; comments and additional data generated from the visits were also included in this report

Apart from the Philippines, Brunei Darussalam, Malaysia, and Singapore, the study also used Hong Kong as a benchmark for the upper secondary education curriculum and assessment scheme. Reviewing the education systems of these countries played an important part in forming the research team's K to 12 reform recommendations.

Key Findings

It is clear from documentary sources and discussions during the "Regional Workshop on BEC in Southeast Asia," and from the field validation that the four Southeast Asian countries have all reformed and reviewed their curricula to stay abreast of the requirements of the twenty-first century. The review of input conditions as well as the curriculum content, structure, duration, and alignment of basic education in the four Southeast Asian countries produced the following key findings:

1. Input Conditions

1.1 Aims of Education

Brunei Darussalam, Malaysia, and Singapore gear their education toward achieving twenty-first century competencies such as civic literacy, global awareness, and cross-cultural skills; critical and inventive thinking skills; and information and communication skills. These countries support differentiation to address differences in learning talents and abilities and to help students reach their fullest potential in order that they may most effectively contribute to socio-economic development. The overall goal of Philippine basic education is functional literacy for all wherein "functional literacy" is defined as embracing 21st century learning skills and literacies.

The Philippines' new *2010 Secondary Education Curriculum* anchored on an Understanding by Design (UbD) framework, is particularly attuned with the goals of Brunei Darussalam, Malaysia, and Singapore showing common goals of developing in students twenty-first century skills, knowledge, values, and attitudes.

Malaysia and Brunei Darussalam have long-term educational development plans embodied in *Malaysia's Vision 2020* and *2035 Wawasan* or Brunei Darussalam's *2035 National Vision of Education* which provide strategic roadmaps for the national basic education curriculum of each country.

1.2 School Calendar

The school year in Brunei Darussalam, Malaysia, and Singapore starts every January and ends every November. In the Philippines, the SY starts every June and ends either every last week of March or every first week of April. The number of school days in the Philippines is, however, comparable with that of Brunei Darussalam and Singapore, which is 200 days per year. Malaysia requires 210 school days.

1.3 Access, diversification, and progression

1.3.1 Preschool education

In the Philippines, preschool education has historically been noncompulsory, optional, and excluded from the total duration of basic education at present. Under the K to 12 education reform agenda, efforts have been made to provide universal access to kindergarten for 5-year old children starting 2011. In Brunei Darussalam, preschool is open to 5-6 years old; Singapore, 4-6 years old; and Malaysia, 5-6 years old. Only Brunei Darussalam has made preschool compulsory and is considered as the first stage of primary education. There is no national examination after preschool which would screen grade 1 entrants in Brunei Darussalam, Malaysia, and Singapore.

In the Philippines, the School-Readiness Assessment (SRA) is conducted for pupils entering grade 1.

1.3.2 Elementary Education

- Brunei Darussalam, Malaysia, and Singapore call their level 1 education as primary education. In the Philippines, it is recognized as elementary education. Access to primary/ elementary education is automatic in public schools; however, in private schools, some require a preschool certificate or preschool records.

- In Brunei Darussalam, Malaysia, Singapore, and the Philippines there are commonly two phases of elementary education—grades 1–4 and grades 5–6. Elementary schoolchildren in Brunei Darussalam, Malaysia, and Singapore take end-of-cycle public examinations to determine whether they can progress to the secondary level or not. If they pass the test, they progress to diversified secondary education levels starting with 2–3 years in the General Secondary Education Program. Upper secondary education, which normally lasts 2–3 years, places students in streamed groups based on their academic abilities, talents, and interests. The Philippines, meanwhile, has a National Achievement Test (NAT) for grade 6 students for quality assurance and performance monitoring. Achievement in the NAT has no bearing on their individual academic record or eligibility for graduation and progression to the next level.

- Brunei Darussalam, Malaysia, and Singapore follow the policy of automatic progression. In Malaysia, those in Chinese and Tamil classes take remove classes if they do not perform well in the Elementary assessment test.

- In all benchmarked countries, elementary education starts at age 6/7 and ends at age 12/13.

1.3.3 Secondary Education

- Secondary education in Brunei Darussalam, Malaysia, and Singapore is categorized into two levels—lower secondary or level 2 education and upper secondary or level 3 education. Singapore provides streaming earlier than Brunei Darussalam and Malaysia do. Secondary schools in Singapore stream students in the first year, while those in Malaysia and Brunei Darussalam stream students into various programs in the upper secondary level. Brunei Darussalam offers two general pathways in year 9—General Education Program (GEP), which requires students to take four core subjects, three complementary subjects, and at least two elective subjects, one of which must be a science elective, and AEP, a path for those who failed or retook the PSR in year 6, and which requires students to take four core subjects, four complementary subjects, and at least two electives. Apart from these, some schools offer Special Education Program (SEP) for students who possess special gifts in a particular field such as science and mathematics or those who are talented in sports,

music, performing arts, and fine arts. Brunei Darussalam also provides SEP for students who are visually and auditory impaired, mentally challenged, physically challenged, and have learning difficulties.

- Brunei Darussalam offers an express path in the secondary education level for students who are highly academically inclined. Some Bruneians who are very good can take up upper secondary education in two years instead of three. The country also offers flexibility in terms of moving from one stream to another.

- Malaysia has four streams for year 10 students—the arts, science, technical, and religious streams. Secondary education students still take the same core and compulsory subjects but are offered different subjects as electives.

- The Philippines does not have a national policy on differentiated secondary education or streaming. However, in the 2010 Secondary Education Curriculum, it introduced special programs that are offered to students for an additional two hours daily in selected schools. These are the Special Program in the Arts (music, visual arts, theater arts, media arts, dance, and creative writing); the Special Program in Sports (individual or dual and team sports); the Special Program in Journalism, Engineering, and Science Education; and the Special Program in Foreign Language (Spanish, Japanese, Chinese, Arabic, French, and German). Some public and private schools also offer TVE programs.

1.4 Teacher-Pupil Ratio

- **Preschool.** The teacher-pupil ratios varied in Brunei Darussalam, Malaysia, Singapore, and the Philippines. Brunei Darussalam and Malaysia had two teachers per preschool class, one is a teacher and the other is an assistant teacher. Brunei Darussalam's teacher-pupil ratio is 1:10, while Malaysia and Singapore's teacher-pupil ratio is about 1:20. In the Philippines, as per DepEd Order No. 37 s. 2011, preschool classes should have at least 25–30 pupils per teacher with current national averages of 36:1

- **Elementary and Secondary.** Brunei Darussalam, Malaysia, Singapore, and the Philippines have different teacher-pupil ratios in the elementary and secondary levels due to differences in school population. Generally, small classes abounded in Brunei Darussalam (1:12), Malaysia (1:19), and Singapore (1:20). Although the Philippines indicated an average of 1:38 teacher-pupil ratio, some places in the country can also have 50 or more students under a single teacher.

1.5 Medium of Instruction (MOI)

- **Preschool.** Most benchmarked countries use English and the mother tongue in the preschool program as language of instruction. In Malaysia, preschools that use Bahasa Malaysia as MOI must also use English for instruction at a 50:50 ratio. This means that teaching and learning in preschools is bilingual—Bahasa Malaysia (600 minutes per week) and English (600 minutes per week). Preschools that use Tamil or Chinese as MOI, on the other hand, must conduct 400 minutes of lessons in Bahasa Malaysia, English, and Chinese or Tamil per week at a ratio of 1:3. In Brunei Darussalam, children are taught in two languages—Bahasa Malaysia and English. In the Philippines, preschool programs are required to use the child's mother tongue or first language pursuant to DepEd Order No. 74 s. 2008. Singapore teaches preschool children in English and mother tongue languages (Chinese, Tamil, or Malay)

- **Elementary and Secondary.** In Brunei Darussalam, English and Bahasa Melayu (the national language) are both used as MOI. In Malaysia, the students can either go to the national schools where the MOI is Malay and English or the vernacular schools where the MOI is either Chinese/Tamil and English.

- In the Philippines, the mother tongue (now in 12 dialects) of the students is the MOI during the early years of schooling, eventually switching to the national and English language in the later years of elementary education. The Philippines implements the bilingual education policy and in 2009, a multilingual education policy has been crafted, allowing some subjects to be taught in the mother tongue from grades 1 to 3.

- English is used as the medium of instruction (MOI) in Singapore, while the mother tongue of the students such as Chinese, Malay, Tamil, or non-Tamil Indian language is taught as a subject in order for the students not to forget their heritage.

2. Curriculum

2.1 Structure

2.1.1 Duration

- **Preschool.** Optional ECCE for 1–3 years is common, except in Brunei Darussalam, which considers this the first compulsory stage of its education system. Singapore and the Philippines offer a three-year optional Early Childhood Care and Development Program (ECCD). Malaysia offers a two-year optional preschool. A one-year compulsory preschool for all 5-year-olds is set to be implemented in the Philippines once it is legislated.

- **Secondary.** Secondary education in Brunei Darussalam, Malaysia, and Singapore is divided into two levels—lower secondary or level 2 and upper secondary or level 3. The lower secondary level is usually undifferentiated while the upper secondary level has at least two to three tracks: academic, vocational or technical and religious. The Philippines follows a four-year general secondary education program. The total number of years in secondary education for Brunei Darussalam and Malaysia is five years while in Singapore and the Philippines the total duration of secondary education is four years.

- In Brunei Darussalam, Malaysia, and Singapore, compulsory education ends when students reach the age of 15 or at the end of lower secondary school. Philippine education, as mandated by the Philippine Constitution, is compulsory until the elementary level (age 11). Thereafter, Filipino public secondary school students are provided free education until they reach the age of 15.

2.1.2 Time Allotment

- Preschool education in Brunei Darussalam, Malaysia, and Singapore consumes 3–4 hours and usually scheduled in the morning. Some preschools in the Philippines conducts classes for 2 to 3 hours only.

- In elementary schools, the amount of instructional time per subject is significantly higher in the Philippines than in the other three countries as per the intended curricula. The Philippines implements a disproportionately long amount of time for elementary subjects than in the other countries. It prescribes a total of 1,800 minutes per week for subjects in the lower elementary levels (grades 1–3) and up to 1,850 minutes per week for subjects in the upper elementary levels (grades 4–6). The time demands in the Philippines are longer for subjects like mathematics, science, makabayan (social studies, PE, arts, music, and health).

- In secondary schools, the Philippines allocates more instructional time to teaching science, mathematics, social studies, and TLE compared with the other three countries. Even though it offers more time for English, like the other countries, it considers English, national language (mother tongue), mathematics, and science crucial to learning. Similar to their centrality in the elementary level, these subjects remain core subjects in secondary schools.

- For other learning areas, Brunei Darussalam, Malaysia, and Singapore include assembly—a gathering of students and school personnel for morning rituals such as flag ceremonies, in their curricula. In Malaysia and Singapore, the prescribed amount of time allotted to this is 30 minutes per week. In Brunei Darussalam and the Philippines, schools also hold assemblies, but the amount of time allotted for these is not counted as part of the curricula.

2.2 Curriculum Framework

- **Preschool education:** Preschool in the Philippines follows a national competency-based curriculum. The learning areas include language and literacy skills, basic number concepts, social skills development, problem-solving skills, appreciation of music and movement, and values education. These also include outdoor play and aesthetic appreciation classes. Preschool in Brunei Darussalam is a playschool, which is generally described as an informal program. Brunei Darussalam aims to impart among children socio-emotional and personality development in preparation to primary 1. Malaysia follows a Standards-based preschool curriculum designed to develop personalities of the child, while Singapore uses an MOE design standards that develop children holistically, in moral, cognitive, social and emotional, aesthetic, and physical domains through play and interaction.

- **Elementary education** in Brunei Darussalam, Malaysia, Singapore, and the Philippines all follow a nationally prescribed curriculum. A national curriculum is followed not only by state-run schools but also by privately owned independent and specialized schools. In some instances, nonstate-funded schools can determine the coverage of the nationally prescribed curriculum. Singapore is the only country where elementary schoolchildren are formally streamed according to ability in the last two years of elementary education—the orientation stage. At the end of Elementary 4, students undergo "banding" and are streamed according to learning ability. Brunei Darussalam, Malaysia, and the Philippines use a similar curriculum throughout six years of elementary education. Brunei Darussalam implements SPN 21; Malaysia, the National Competency Standards; and Singapore, a nationally prescribed curriculum. The Philippines uses the 2002 Basic Education Curriculum(BEC), the core subject learning areas of which include English, mother tongue or national language, science, and mathematics. Compulsory education includes social studies or Civic and Moral Education (CME) and Music, Arts, Physical Education and Health (MAPEH). The Philippines also offers Technology and Livelihood Education (TLE), while Brunei Darussalam and Malaysia offer design and technology and Information and Communications Technology (ICT).

- **Secondary education:** In Brunei Darussalam, Malaysia, and Singapore, the required lower secondary curriculum content is common for all students, but upper secondary programs offer more differentiated and specialized education to respond to the different capabilities and interests of students. In Brunei Darussalam and Malaysia, the curricula's structure and content differ between the lower and upper secondary levels. In the first 2–3 years, the curriculum in each country remains common for all. In the upper secondary years, students take subjects according to their appropriate streams. This entails taking core, complementary, and elective subjects.

- Secondary education in Brunei Darussalam, Malaysia, and Singapore utilizes the streaming strategy based on students' school-leaving examination results, academic abilities, talents, and interests. End-of-level assessment is conducted to match students to appropriate education streams, which vary in terms of duration, curriculum content, and mode of progression to postsecondary schooling.

- In Singapore, students are already streamed into one of four courses upon entering secondary school. The curriculum is highly differentiated, especially in the upper secondary level wherein only five subjects are compulsory while the rest are considered electives. Students in the special or express course and the normal academic course follow the same curriculum and take the same required subjects. Students in the latter, however, take an additional year to complete secondary education. The curriculum content for the normal technical course prescribes the same core subjects—English, mother tongue, mathematics, and science—and prescribes elective subjects of a technical and a practical nature.

- The curriculum for Philippine secondary education is less differentiated and less complex than those for Brunei Darussalam, Malaysia, and Singapore. Students essentially follow a common curriculum with limited options for streaming of students into particular education tracks is not practiced.

- Elementary and secondary levels in the three benchmarked countries follow a spiral curriculum wherein students repeat a subject at different grade levels, each time with a higher level of difficulty and in greater depth. The spiral approach is also used in preschool, elementary, and secondary curricula whose content and topics show a progressive sequence of learning topics and experiences designed to move students to higher applications of the same key concepts.

2.3 Curriculum Organization

- **English:** The amount of time allotted to learning the English language in elementary grades in the Philippines is relatively high (450 minutes per week). The same amount of time is required by Singapore for children from Elementary 1 to 2. Elementary 3–4 levels children receive less time for English language learning at 300 minutes per week while those in Elementary 5–6 levels receive even less time at 360 minutes per week. In Brunei Darussalam, the amount of time allocated for English and Bahasa Melayu is equal (300 minutes per week), while Malaysia allocates 330 minutes per week for Elementary 1–3 and 300 minutes per week for Elementary 4–6 levels children. English language subject in the four aims to develop competence in listening, speaking, reading, and writing. Singapore's focus is on language application, such as language for information, language for literacy, and language for social interaction. The Philippines extends content to literary appreciation.

- **Mathematics:** Mathematics subject in the Philippines is allocated more time than the three other benchmark countries. The four Southeast Asian countries had common learning strands such as the study of whole numbers, addition and subtraction, basic multiplication and division, basic geometry, fractions, metric and local measurements, the use of money, and their applications to practical problems based on real-life activities. In the upper elementary grades, the pupils are expected to master the four fundamental operations of whole numbers, to perform operations on decimals and fractions as well as to conceptualize the meanings of ratio and proportion, percentages, integers, simple probabilities, polygons, spatial figures, measurements, and graphs. Singapore requires more data analysis, while Brunei Darussalam and Malaysia teach algebra even in the elementary level. As in the case of Singapore, it has three learning strands: numbers, algebra, geometry and measurement. Brunei Darussalam, Malaysia and Singapore continue a spiral approach. The Philippines departs from a spiral approach in secondary, Instead, the four year levels are divided into a more discipline-based curricular approach.

- **Science:** The Philippines allot more time in science education even if this subject is offered as a stand-alone subject only in grade 3. Only Brunei Darussalam offers science as a stand-alone subject throughout the six years of elementary schooling. In the Philippines, science is taught as part of science and health only from grade 3 onward. Singapore also offers science from elementary grade 3 onward while in Malaysia, it begins in elementary grade 4. Science and technology in Malaysia puts emphasis on the acquisition and mastery of scientific knowledge and skills needed to study and understand the world (Zamzaimitul, 2011). The emphasis of science and technology in other countries lies on the acquisition and mastery of scientific knowledge and skills needed to study and understand the world. The challenges of the twenty-first century necessitate the offering of science subjects that are relevant in developing scientific and technological knowledge, skills, and values. Science is offered as one of the core subjects. The three benchmark countries are focusing on developing the science process of investigation, discovery, and exploration. A discipline-based science curriculum is observed in the Philippines in the secondary level. The spiral approach is evident in the science curriculum design and content of the benchmark countries.

- **Social studies:** The amount of time allotted for teaching social studies in the Philippines, under the term makabayan, is disproportionately high compared with those in the other countries (300 minutes per week in grades 1–3). Social studies is not taught in Brunei Darussalam and Malaysia until grade 4 while Singapore offers it for only 30 minutes per week. Starting from grade 4, under humanities, 60 minutes per week is allocated by Malaysia and 90 minutes per week by Brunei Darussalam and Singapore.

  Social Studies subject emphasizes the internalization of patriotism and fostering the spirit of unity. Social studies classes in Brunei Darussalam, Malaysia, and Singapore put greater emphasis on maintaining national unity, preparing citizens to internalize knowledge, skills, and values related to social and environmental issues that take place within their local

surroundings globally. The thematic models aim to expose students to various traditions and customs of different races in Malaysia as well as to involve them in the festivals celebrated by different communities. History is offered as a core content of the social studies subjects in the Philippines. The benchmark countries offer geography and historiography as elective subjects in upper high school.

- **MAPEH:** Music, Arts, Physical Education, and Health Education (MAPEH) subjects are considered as core and compulsory subjects. Brunei Darussalam, Malaysia, and Singapore put more emphasis on developing physically, emotionally, and balanced individuals. Hence, more time is allotted to PE, music, and health. These countries offer MAPEH at an average of 190 minutes per week. The Philippines offers MAPEH starting grade 4 for 100–200 minutes per week. The child's physical and personal health is developed through psychomotor, cognitive, and affective domains. Aesthetic development in Brunei Darussalam, Malaysia, and Singapore develop creativity, talent, and appreciation for the arts, which can be used for self-expression.

  Art subjects are integrative in both Brunei Darussalam and the Philippines. Creativity and technology (lower elementary) in Brunei Darussalam focuses on three distinct modules—Information and Communications Technology (ICT), art and design, and music and drama. In the upper elementary grades, this subject is called design and technology. In the Philippines, arts, music and PE are integrated in makabayan (civics and culture) from grades 1 to 3 and offered together as one subject from grades 4 to 6. In Malaysia, art education is taught as a stand-alone subject throughout elementary school. This is the same for arts and crafts in Singapore.

- **ICT:** Brunei Darussalam and Singapore allocates time for ICT as a separate subject. The Philippines does not have any specific ICT subject requirement but it is integrated in the Technology and Livelihood Education (TLE) course coverage. Coverage of ICT as a 21st century competency learning skill appears inadequate in the Philippines as compared to the benchmark countries.

- **Values education:** This is universally taught in the four countries. In Brunei Darussalam, it is called Malay Islamic Monarchy (Melayu Islamic Beraja) and is initially integrated in Islamic Religion Knowledge (IRK) in the lower elementary grades then later taught as a stand-alone subject in years 4 to 6. The different terms used for the subject are moral education in Malaysia, character education in the Philippines, and Civic and Moral Education (CME) in Singapore, which is integrated in mother tongue from Elementary 1 to 4. The time allotted to values education is sufficient at both primary and secondary levels. The benchmark countries offer few but focused values. Singapore inculcates six values from grades 1-upper high school, namely: respect, responsibility, integrity, care, resilience, and harmony. The Philippines espoused about 36 distinct values in the curriculum from

preschool to secondary. Owing to their demographic composition, with a significant Islamic portion of the population, Islamic and Religious Education (IRE) is offered as a subject in both Brunei Darussalam and Malaysia. The subject is called IRK in Brunei Darussalam.

- **Edukasyong Pantahanan at Pangkabuhayan (EPP) and Technology and Livelihood Education (TLE):** EPP aims to develop among learners industry and passion for work. In Singapore, and Brunei Darussalam no subject called Home Economics (HE) and livelihood education exists. Malaysia offered living skills. HE is offered as a separate subject only in Malaysia and the Philippines in the upper elementary level. In the Philippines, it is taught as Home Economics and Livelihood Education (HELE). The subject is called living skills in Malaysia. However, Brunei Darussalam offers ICT, design and technology, which compensates for EPP and TLE.

- **Mother tongue or national language:** The amount of time allotted for the national language in the Philippines is comparable with Singapore and Malaysia (350 minutes per week). As in Brunei Darussalam, Malaysia, and Singapore, the amount of time allocated for learning the mother tongue decreased starting grade 4. Interestingly, in Malaysia, more time is allotted to teaching the national language (Malay) over English. The Filipino language subject in the elementary level focuses on grammatical component while at the secondary level, focus is more on processes and discourse of language. At the secondary level, literature serves as the springboard for teaching Filipino language.

- **Elective Subjects:** Brunei Darussalam, Malaysia, and Singapore offer at least eight major clusters of elective subjects. These are languages, mathematics, science, humanities and social science, religion, arts, ICT, and Technical and Vocational Education (TVE). Students are required to choose elective subjects based on their interest and future higher education program. There is a strong career, guidance and counseling program in place to enable the students to choose their elective subjects well. Sample elective subjects include the following:

    - *Languages:* Arabic, French, Chinese (Mandarin), and Tamil

    - *Mathematics:* Advanced and higher mathematics

    - *Science:* Physics, chemistry, biology, and additional sciences

    - *Humanities and social science:* IRK, Malay literature, Tamil literature, English literature, geography, principles of accounting, economics, commercial studies, development studies, commerce, and accounting

    - *Religion:* Higher Arabic, Tasawwur Islam, Al-Quran dan Assunnah Education, and Syariah Islamiah Education

- *Arts:* Arts and crafts, music, design and technology, arts and design, drama, higher arts, and higher music

- *ICT:* IT, computer studies, and ICT

- *TVE:* Food and nutrition, business studies, woodwork, fashion and fabrics, agriculture, and PE

Upper secondary schools offer students more specialized educational programs that cater to specific abilities, talents, skills, career inclinations, or learning paces.

2.4 Assessment and Testing

- Brunei Darussalam, Malaysia, and Singapore implement end-of-cycle national examinations with international recognition such as the Cambridge General Certificate of Education (GCE) "O-Level" and "A-Level" Examinations while the Philippines does not.

- The Philippines is the only country that does not administer a national end-of-level assessment test after secondary education. At the end of upper secondary education in Singapore, students take the Cambridge GCE "A-Level" Examinations. In Brunei Darussalam, graduates of basic education receive the "O-Level" certificate of education. Prior to transitioning to the tertiary level, students need to pass the "A-Level" Examinations or obtain other certificates and diplomas. In Malaysia, after completing forms 4 and 5, students take the Malaysian Certificate of Education, which is equivalent to the GCE "O-Level."

PART II. CURRICULAR OPTIONS AND POLICY RECOMMENDATIONS

Despite the strengths of Philippine basic education, there remain challenges for further improvement. Policymakers may wish to consider a variety of strategies by which to shape these improvements, including:

1. **Amend current educational goals to make them clear, focused, and relevant and anchored on the development of 21st century competencies.** The present educational goals are bent on developing functionally literate Filipinos by 2015. While the national definition of functional literacy is anchored on the UNESCO Four (4) Pillars of Learning, it would be beneficial to refocus education goals on the development of 21st century literacies. Given the realities of the knowledge society, the goals may need to be revisited and redirected toward a long-term set of goals around which current program improvements and strategies can be developed

2. **Revisit core and compulsory subjects to streamline content and to align this with more focused objectives for better outcomes.** The study revealed that subjects in the Philippines are overcrowded and tend to cover too much technical content. There are also observations that the time allotment for all subjects is longer than that of the benchmark countries.

3. **Improve the modes and mechanisms for assessment to support effective learning and teaching.** The benchmark countries implement a national level examination which are recognized internationally. Strengthening the testing system and using internationally-recognized assessment such as those of Brunei Darussalam, Malaysia, and Singapore will provide for better transferable diplomas and certificates. The DepEd should spearhead end-of-cycle assessment that provides evidence of academic qualifications and record of performance in school for the purpose of employment or higher studies. Greater use of formative assessment to diagnose learning goals and guide instructional interventions is very much needed.

The following are specific recommendations for each level of education:

3.1. **Preschool education**: Strengthen government support for early childhood education in order to build a strong foundation for learners. Kindergarten should be made mandatory for all children aged five with nationally prescribed standards for early childhood education. The Philippines offers the shortest time for preschool (3 hours) while our counterparts spend 4 hours. It is recommended that the country strengthen its preschool program by having a comparable learning time with the rest of the region.

3.2 **Elementary education:** Decongest elementary level subjects. The data gathered shows that Philippine elementary education subjects are aligned with core and compulsory subjects in Brunei Darussalam, Malaysia, and Singapore; however, some subjects in the Philippines appear to have a generally congested content. The study further recommends a close interphase with the 2010 Secondary Education Curriculum. The following subjects should be decongested in the elementary level: mathematics, sciences, Social Studies, and EPP. As for MAPEH, it should be strengthened and ICT should be introduced at the elementary level to develop the 21st century skills.

3.3 **Secondary education:** Decongest secondary education subjects and support spiral progressive curriculum model. Curriculum content is congested in secondary education in the Philippines compared with that of the other three countries. Some strategies that can be implemented are:

- Decongesting the present curriculum, thereby improving mastery of key skills, knowledge, and content areas. There should be a genuine consistency in the secondary education curriculum.

- Lengthening the cycle of secondary education to substantially increase the amount of time allotted to learning core and elective subjects in order to enhance students' abilities and competence.

- Promoting spiral progressive curriculum at the secondary level. The K to 12 curriculum must be aligned with the world's standard of offering an integrated science and technology approach, integrated mathematics, civic education which is not devoted solely on history but trains a child to think critically and participate actively in the 21st century.

- Developing an upper secondary system with multiple channels and diversity to provide learning opportunities for those who will pursue higher education and for those who will take the technical and vocational track.

- The new secondary education curriculum should emphasize the end goals of preparation for higher education and workforce development. Thus, the new curriculum should ensure pathways from high school to postsecondary competency certification in order to keep them seamless and flawless.

- Emphasizing the new secondary education curriculum's end goals of preparing for higher education and workforce development. Thus, the new curriculum should ensure pathways from high school to postsecondary competency certification in order to keep them seamless.

- Helping prepare students for decisions regarding career options/choices, the secondary education curriculum should include an enhanced career preparation and guidance program. This will be essential to support government's plan for adding upper secondary level with elective subjects.

4. **Enhance assessment and certification practices and implementation in basic education.** End-of-cycle assessments on year 10 and year 12 are recommended to determine students' performance in different learning activities, and to allow the students to have a lower high school certification which they can use in case they would not push through with upper secondary education. At the same time, an upper high school leaving certificate is recommended which may also serve as their own admission to higher education institutions. The DepEd should study the implementation of end-of year 10 and year 12 examination based on the K to 12 curriculum. As mentioned in recommendation 3, DepEd should strengthen formative assessment to encourage "assessment for learning" and expand range of assessment methodologies used.

5. **Strengthen the link between the elementary and secondary levels.** There is a need to strengthen the link between elementary and secondary goals, thus ushering a unified framework to ensure smooth progression for K to 12 learners. Whereas the elementary level adheres to the 2002 BEC, the secondary level utilizes backward design approach or UbD. The curricular programs, practices and framework in the two levels should complement each other for the holistic development of the Filipino learners.

6. **Develop multiple pathways for upper or senior high school:** To develop graduates with "Digital Age" literacy, inventive thinking and effective communication skills, high productivity, and essential values, the Philippine secondary education curriculum should undergo significant reform. The new secondary curriculum should aim to strengthen the knowledge base of students so they can have twenty-first century competencies that the "Net Generation" requires.

7. **Years 11 and 12 should not follow a one-size-fits-all program.** Upper secondary levels or Year 11 and 12 programs should be offered with different specializations and tracks. It is proposed that upper secondary high school adopt common subjects such as languages (English and the mother tongue), mathematics, science, social studies, humanities, and MAPEH but will offer more elective subjects, particularly in eight areas—languages, advance mathematics, advance sciences, humanities and social science, religion, art, ICT, and TVE. The specific model tracks presented below draw, to a large extent, on the research on models of secondary education that SEAMEO INNOTECH conducted. These include:

    - **Track 1: Six-year general secondary education.** The curriculum will follow the enhanced secondary curriculum known as the 2010 Secondary Education Curriculum. The core and compulsory subjects in the first four years will be the same as the subjects in the present 2010 SEC; however, it will offer career-oriented elective subjects such as business studies, bookkeeping, travel and tourism management, and animation in its TLE subjects. More flexibility will be given to schools on the elective subject offerings to suit the needs of the students and the local needs.

    - **Track 2: Applied secondary education.** The curriculum is composed of a general secondary (with traditional core and compulsory subjects) in the first four years and a specialized two-year career-oriented track leading to some technical and vocational certification.

    - **Track 3: Integrated secondary education.** This offers an integration of the four-year general secondary (2010 SEC) and two-year junior college levels, which mostly covers the general education subjects in college. An Integrated program is a combination of a four-year 2010 SEC curriculum followed by a two-year of pre-baccalaureate course or program. The IP is designed for students who intend to pursue higher education. The two-year pre-baccalaureate course would offer liberal education, communication

subjects (English and Filipino), advanced mathematics, advanced sciences and compulsory subjects offered in the first two years of college course or first degree courses (e.g. Taxation, Rizal, NSTP, to name a few).

The proposed three upper secondary education program models will redound to a review of the Bachelors degree program or the first degree program as the case maybe, as some subjects will already be taken up in the proposed upper secondary education subjects. The general education subjects will be minimized and higher education may focus on professional subjects with a view to achieving excellence in the profession. Higher education should determine the duration of study of each program according to practical circumstances and needs.

Curriculum review and reform are constant elements of educational policies and provisions. At the heart of the K to 12 reform initiative should be consciously mandated and regularly implemented reviews of curricula in order to consistently ensure alignment with national education goals and development plans.

8. **A Proposed New Structure with Assessment Pathways.** The proposed new structure would be divided into three stages—the elementary level, which will end with an assessment; the lower secondary level, which will lead to the awarding of a lower high school diploma based on the results of a national examination; and the upper secondary level, which will have core, compulsory, and elective subjects.

   The upper secondary level should ensure that students follow a coordinated study program leading to advanced or higher polytechnic or university courses. At the end of year 12, they will undergo standards-based assessment, which will lead to the awarding of an advanced high school diploma. This assessment could also be used for merit scholarship programs under the CHED. Those who will make it to the top 25% of the Advanced High School Assessment Test could automatically qualify for merit scholarship slots. The remaining qualifiers who belong to lower socio-economic profiles may qualify for StuFAPs.

CHAPTER ONE INTRODUCTION

1.1 Background and Rationale

Education plays a fundamental role in poverty alleviation and in promoting economic and social growth (Hanushek & Woessmann, 2008). It expands the range of opportunities available to individuals and equips them with the tools to make better-informed choices (World Bank, 2011). It increases an individual's earning potential, opens avenues for social mobility, improves personal and family health and nutrition, and enables women to control their fertility (Schultz, 1993). At the societal level, education raises labor productivity, drives innovation, and contributes to the smooth functioning of democratic institutions (Bloom, Hartley, and Rosovsky, 2006).

The Philippines is no exception to countries that seek economic growth and progress through education. As such, the Philippine Medium-Term Development Plan (MTPDP) aims to strengthen education for global competitiveness (2011–2016). The country thus seeks to make the formal basic education structure adequate and responsive to meet the requirements of the labor market. The country also promotes global comparability and better-prepared graduates for higher levels of learning within the framework of EFA and the BESRA.

The effectiveness and quality of the education system has been a continuing concern in the Philippines, as evidenced by the following:

- The performance of the Philippines in the TIMSS in 2003 reflects a problematic state of science and mathematics education of Filipino students. The country ranked twenty-third out of 25 countries in terms of the average score of fourth graders in both mathematics and science assessment tests. The scores of eighth graders for math placed the country in thirty-fourth place out of 38 countries and for science, forty-third out of 46 countries.

- Aside from the TIMSS results, and the results of National Achievement Test (NAT) also revealed the students' poor performance in core subjects such as English, Filipino, mathematics, science, and social studies. The NAT passing rate for grade 6 in SY 2009–2010 was only 69.21%, around 5% lower than the standard passing rate of 75%. That same year, secondary school NAT participants correctly answered only 50% of the questions in the mathematics and science sections of the test. The secondary school NAT score in SY 2009–2010 was 46.38%, which slightly decreased from 47.4% in SY 2008–2009.

- In addition to the poor student performance, SEAMEO INNOTECH's *2006 Policy Notes on Access to Education* also revealed the distressing statistics of student progression to higher education that warranted a comprehensive review of the BEC and its relevance to the overall development goals of the country. Out of 100 students who entered grade 1, only

66 finished grade 6, only 43 finished high school, and only 14 completed higher education. There is, therefore, an urgent call to improve the BEC framework to make it more relevant. Moreover, the Policy Notes revealed that a large group of students fall out of the formal education system. The dropouts do not complete secondary vocational courses with proper caveats, lessening their chances of getting better jobs due to lack of occupational skills.

Considering that human capital is an essential component of economic growth and development (ADB, 2008) and the fact that education contributes to capital formation and is associated with higher income levels (OECD, 2004), having a longer education cycle is expected to increase GDP by as much as 2%. Those with higher income levels have higher savings rates and contribute more to capital formation. Those with higher income levels also make greater contributions to providing funding to education because the percentage of expenditure for such is closely associated with income levels (Arcelo, 2003).

The *OECD Education Indicators* (2010) reported an increase in earnings with each level of education. Those who attained upper secondary and postsecondary nontertiary or tertiary education enjoyed substantial earning advantages compared with individuals of the same gender who did not complete upper secondary education. The earning premiums for tertiary education are substantial in most countries and exceeded 50% in 21 out of 31 European countries.

Recommendations push for the extension of the Philippine basic education duration even as early as the post-World War II days. The cumulative clamor of these recommendations has been documented in Table 1.

TABLE 1. Summary of Recommendations for the Educational Structure, Duration, and Alignment of the Philippine BEC

Year	Source	Recommendation
1949	UNESCO Mission Survey	Restore grade VII in elementary education
1953	Education Act	Revise the elementary school system by adding one year (grade VII)
1960	Swanson Survey	Restore grade 7 in elementary education
1970	PCSPE	Extend secondary education by one year to better prepare students who have no plans to take up university education
1991	EDCOM Report	Retain the 10-year basic education phase while institutionalizing career counseling in elementary and secondary schools in preparation for higher education
1998	Philippines Education Sector Study (World Bank and ADB)	Prioritize student learning through curricular reforms, the provision of textbooks, the use of the vernacular in lower elementary grades, and the institution of a longer basic education cycle
2000	PCER	Implement a compulsory one-year pre-baccalaureate stage as prerequisite for students interested in enrolling in higher education degree programs
2006	Philippine EFA 2015 National Action Plan	Lengthen the educational cycle by adding two years to formal basic education (one each for elementary and high school)

Since 1949, several changes in the Philippine education structure, content, cycle, curriculum, and MOI have been suggested. The country aims to learn from the high-performing education systems and policies of its neighbors in Southeast Asia. Conducting a regional comparison was seen to assist the country in identifying the appropriate structure, organization, duration, content, and alignment of basic education, which, according to the Republic Act 9155 or the Governance of Basic Education Act (GOBEA), encompasses early childhood, elementary, and high school education as well as the ALS for OSY and adult learners, including those with special needs. The K to 12 reform proposal will focus on reforming the basic education structure, curricula, and assessment prior to progression to another level. This comparative research study was conceptualized as an input to this important basic education reform process.

1.2 The Study

The DepEd, through the NEC, tasked SEAMEO INNOTECH to examine and compare the basic education systems of the Philippines with those of three Southeast Asian countries—Brunei Darussalam, Malaysia, and Singapore. These countries recently reformed their education systems by aligning them with international standards in pursuit of developing in students their twenty-first century skills. Their education systems are also performing well. In fact, Singapore placed first in terms of having a quality education system (Global Competitiveness Report, 2010–2011) and ranked among the top placers in reading, mathematics, and science in the PISA in 2009 and in mathematics and science in TIMSS in 2007.

Additional insights were taken from a review of Hong Kong's *New Secondary Education Curriculum*. Hong Kong, like the three aforementioned Southeast Asian countries, also boasts of a high-performing education system, according to the Global Competitiveness Report (2010–2011), and has one of the world's best-performing school systems like Singapore, according to the *McKinsey Report* (November 2010).

This study aims to inform the DepEd about the current condition of basic education in Brunei Darussalam, Malaysia, Singapore, and the Philippines in order to identify policy and curriculum options with regard to adding two years of secondary education to the country's current system, in accordance with President Aquino's education reform agenda.

This report aims to map the way toward implementing K to 12 educational reforms based on the chosen benchmarks aligned with the country's national development priorities. It recommends curriculum and policy options based on the experiences of Brunei Darussalam, Malaysia, and Singapore. It specifically addresses the following questions:

A. *How does the Philippine preschool, elementary, and secondary education system compare with those of the benchmark countries in terms of:*
    1. Input conditions

1.1 Aims of education
1.2 Access, diversification, and progression
1.3 Teacher-pupil ratio
1.4 School calendar
1.5 Medium of Instruction

2. Curriculum
2.1 Curriculum structure (duration and time allocation)
2.2 Curriculum framework and articulation
2.3 Curriculum organization (curriculum content, scope, and sequence)
2.4 Assessment and Testing

B. *What are the policy and curriculum options to align Philippine basic education with regional standards?*

1.3 Scope and Methods of Study

The study gathered information from the education ministries of Brunei Darussalam, Malaysia, Singapore, and the Philippines using a series of validation meetings with key curriculum officials held at SEAMEO INNOTECH during the regional workshop and field studies conducted from March to May 2011. Comparative research was specifically undertaken through the following activities:

- **Review of related literature**, which involved the collection of secondary data from reports, education statistics databases, curriculum reform studies, and UNESCO education reports examining Brunei Darussalam, Malaysia, Singapore, and the Philippines

- **Curriculum survey** guided by the stated objectives of this research; survey questions were disseminated to education ministry officials who also submitted and presented country papers during a regional curriculum meeting

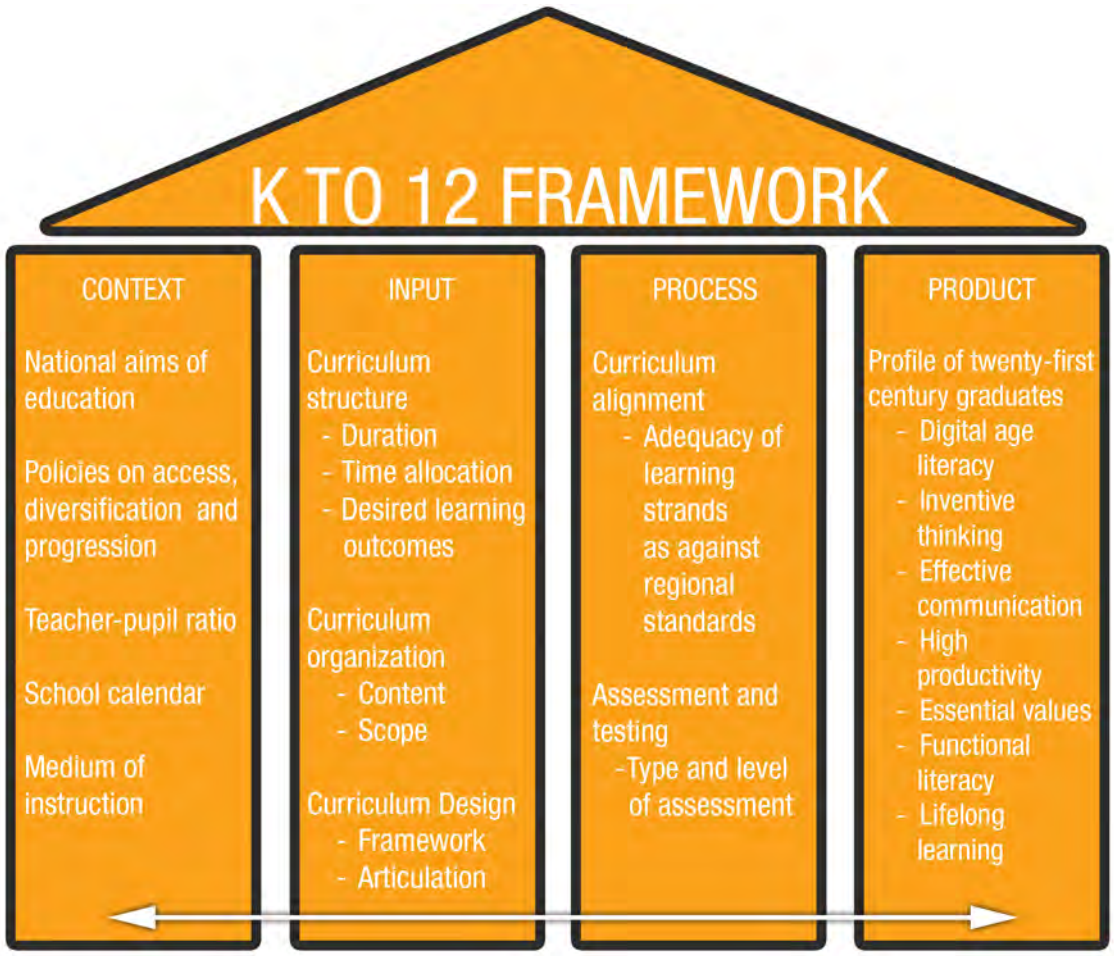
- **Regional BEC experts meeting**, which convened representatives of the education ministries of Brunei Darussalam, Malaysia, and the Philippines; Singapore's education ministry, meanwhile, sent general information about its education system and participated in the field study

- **Field study and validation meeting**, which involved a presentation of preliminary studies by education ministry representatives and consultative dialogs on important data outputs; comments and additional data generated from the visit, were also included in this report.

1.4 K to 12 Review Framework

This research study substantially focused on reviewing the education systems of Brunei Darussalam, Malaysia, Singapore, and the Philippines for the purpose of completing a comparative analysis. Elements of each country's education system such as structure, design, organization, and alignment were studied. These elements were analyzed to determine curriculum and policy options that can help the country realize its planned K to 12 reforms.

FIGURE 1. K to 12 Framework



1.5 Organization of the Report

This report has the following seven sections:

Chapter 1 sets out the introduction, which explains the rationale, objectives, and methodologies used in this study.

Chapter 2 provides an overview of the national contexts and relevant educational backgrounds of Brunei Darussalam, Malaysia, Singapore, and the Philippines.

Chapter 3 presents insights on the regional comparison, which highlights similarities and differences in the countries' preschool education systems.

Chapter 4 presents a comparison of the countries' elementary education systems, focusing on input conditions and curriculum reviews.

Chapter 5 presents a comparison of the countries' secondary education systems, covering both lower and upper secondary programs.

Chapter 6 presents the types and levels of assessment implemented in Brunei Darussalam, Malaysia, Singapore, and the Philippines.

Chapter 7 summarizes the results of the regional comparison and presents conclusions and recommendations through the proposed curriculum and policy options.

CHAPTER TWO OVERVIEW OF K TO 12 EDUCATIONAL SYSTEMS

Basic education is the rock upon which all human resource development (HRD) is founded. It must be made available to everyone for growth and development to be inclusive (ADB, 2008). Children in school in Southeast Asian countries total 207 million, making the region one of the most successful in terms of expanding access to and enhancing the quality of education. This section plots the basic education systems of four Southeast Asian countries, focusing on structure, content, duration, and alignment of curricula. It provides a context of basic education in terms of level of development, quality, and relevance.

As this research endeavor serves to support the extension of schooling in the Philippines, it is necessary to lay out the country's school structure in terms of number of years relative to those of its three chosen neighbors. A comparison of the number of years children spent in school prior to entering a college or a university is shown in Table 2.

TABLE 2. Duration of Basic and Pre-University Education in Selected Asian Countries

Country	Years of Elementary Education	Years of Secondary Education		Total Elementary and Secondary	Pre-university	Total Basic and Pre-University Education Duration
		Lower	Upper			
Brunei Darussalam	6	2/3	3	11	2/3	13/14
Cambodia	6	3	3	12	1 *	13
Indonesia	6	3	3	12	1 *	13
Lao PDR	5	3	3	11	2 *	13
Malaysia	6	3	2	11	2/3	13/14
Myanmar	5	4	2	11	1	12
Philippines	**6**	**4**		**10**	**-**	**10**
Singapore	6	2	2/3	10/11	2/3	12/13
Thailand	6	3	3	12	-	12
Timor-Leste	6	3	3	12	-	12
Vietnam	5	4	3	12	2-3**	14/15
Hong Kong	6	3	3	12		12

Source: SEAMEO INNOTECH, as of May 2011 | *Legend: *Foundation Years **Junior College*

2.1 Context of Basic Education in Brunei Darussalam, Malaysia, Singapore, and the Philippines

Basic education encompasses early childhood, elementary, and secondary school education as well as ALSs for OSY and adult learners, including those with special needs (GOBEA, 2001). Strictly looking at the elementary and secondary education levels, only the Philippines has a minimum of 10 years of basic education. Even though Singapore also has only 4–5 years of secondary education, it also has 2–3 years of required postsecondary education in the form of junior college, polytechnic, or ITE prior to entering the university system.

The profiles of Brunei Darussalam, Malaysia, Singapore, and the Philippines illustrate the range of differences and achievements within Southeast Asia as a whole, as identified in the UNESCO 2008 Global Monitoring Report. The four countries were a mixture of high and midrange performers in terms of economic development. In particular, Singapore and Brunei Darussalam posted high GDP rates compared with the Philippines. However, looking at the youth and adult literacy situation, the four countries were all high performers. Among them, the Philippines and Malaysia had the most common contexts and features, as both had bigger populations and have made greater strides in terms of literacy rate. Brunei Darussalam and Singapore were both small countries, hence the excellent achievement rate (100%) with regard to the youth literacy rate. More progress in relation to adult literacy is expected to occur in order to universalize adult literacy by 2015.'

TABLE 3. Country Profiles and EDIs

Country	Population (Millions)	GNP per Capita	Youth Literacy Rate	Adult Literacy Rate
Brunei Darussalam	.392	40,160	100	95
Malaysia	27	13,740	98	92
Singapore	4.62	47,940	100	94
Philippines	90.35	3,900	95	94

Source: EFA Global Monitoring Report, 2008

All of the countries are committed to ensuring that children have access to quality and relevant education and that an increasing number of them progress to postsecondary education.

In Brunei Darussalam, everyone is enjoined to study with the enactment of the Compulsory Education Order in 2007, which mandated that "every child residing in the country above the age of six who has not yet attained the age of 15 receives compulsory education."

Malaysia's education is based on thrusts such as access to education, equity in education, quality in education, efficiency, and effectiveness of educational management. Its educational policies aim

to develop the potential of individuals in a holistic and integrated manner in order to make them physically, emotionally, spiritually, and intellectually balanced. It aims to nurture creativity and innovativeness and to enhance a positive learning culture among students. It also has a provision for acculturalizing science and technology as well as lifelong learning, along with a bolder goal of making Malaysia a center of educational excellence in the region.

Progress has been good in Malaysia, Brunei Darussalam and the Philippines in terms of Net Elementary Enrolment. No data on Net Enrolment was available from Singapore. Progress in terms of net secondary enrolment is challenging for the Philippines and Malaysia while Brunei Darussalam has a good NSR of 88.24%.

TABLE 4. Net Elementary and Secondary Enrolment Ratios

Country	Net Elementary Enrolment, 2005-2009 (Percentage)	Net Secondary Enrolment Ratio, 2008 (Percentage)
Brunei Darussalam	93	88.24
Malaysia	96	68
The Philippines	92	60.5

Source: UNESCO Institute of Statistics, May 2011

2.2 Profiles of Brunei Darussalam, Malaysia, Singapore, and the Philippines

2.2.1 *Brunei Darussalam*

Population and composition: Brunei Darussalam has 392,000 citizens comprising Malays, Chinese, expatriates, and members of indigenous tribes. Its population is almost entirely Muslim. A British protectorate from 1906 to 1983, the country's post-independence government was transformed into a sovereign democratic Malay-Muslim monarchy. In 2007, its expenditure on education as a portion of its GDP was only 2.3%, ranking 162 out of 186 countries in terms of educational spending. Its literacy rate is pegged at 92.6%.

Institutional governance: Brunei Darussalam's education ministry supervises the basic education system in the country. It mandates that each child undergo at least nine years of mandatory schooling (CDD, 2009). Free government schooling is provided to all Brunei citizens from age five. Tuition fees are waived while textbooks, food, means of transportation (where necessary), and accommodation in hostels (for students from rural areas) are provided by the state. Noncitizens who attend public schools are charged a nominal fee. The state also provides subsidies to a number of nongovernment-run schools.

Educational policy: Following the release of the national development vision, Wawasan 2035, and the necessity to respond to globalization demands, the education ministry introduced the *National Education System for the Twenty-First Century* or *SPN 21*. SPN 21 was brought about by Brunei Darussalam's vision of having educated, highly skilled, and accomplished citizens with a better quality of life amid a dynamic and sustainable economy. The change was also brought about by globalization and the recommendations of His Majesty Titah on education, which states that, "National education should provide a dynamic, forward-looking educational program to provide knowledge and skills required by industry and services without ignoring values." His Majesty Titah also stated that the goal of education is to "prepare a curriculum with the objective of inculcating a lifelong learning culture so that the Bruneian society is well-educated."

Under SPN 21, some students in years 7 and 8 now have the option to fast-track their progress and to complete basic education a year earlier, bringing the total number of academic years down to 11. SPN 21 was piloted in year 7 in 2008. A year later, the new system was implemented in years 1 and 4.

SPN 21 promotes a vision of quality education toward a developed, peaceful, and prosperous nation. It has made it a mission to provide holistic education in order to allow everyone to achieve his or her fullest potential. The educational policy focuses on four strategic areas—teaching and learning excellence, quality education, professional and accountable organization, and efficient organization. Placing the learner at the core of all teaching and learning processes, SPN 21 considers certain knowledge and understanding, essential skills, and the right attitudes and values as key ingredients to holistic and effective education (Chong, 2011). Key knowledge areas such as IRK, science, and mathematics should envelop learners. Elements such as entrepreneurship and co-curricular programs, meanwhile, should complete their holistic educational experiences.

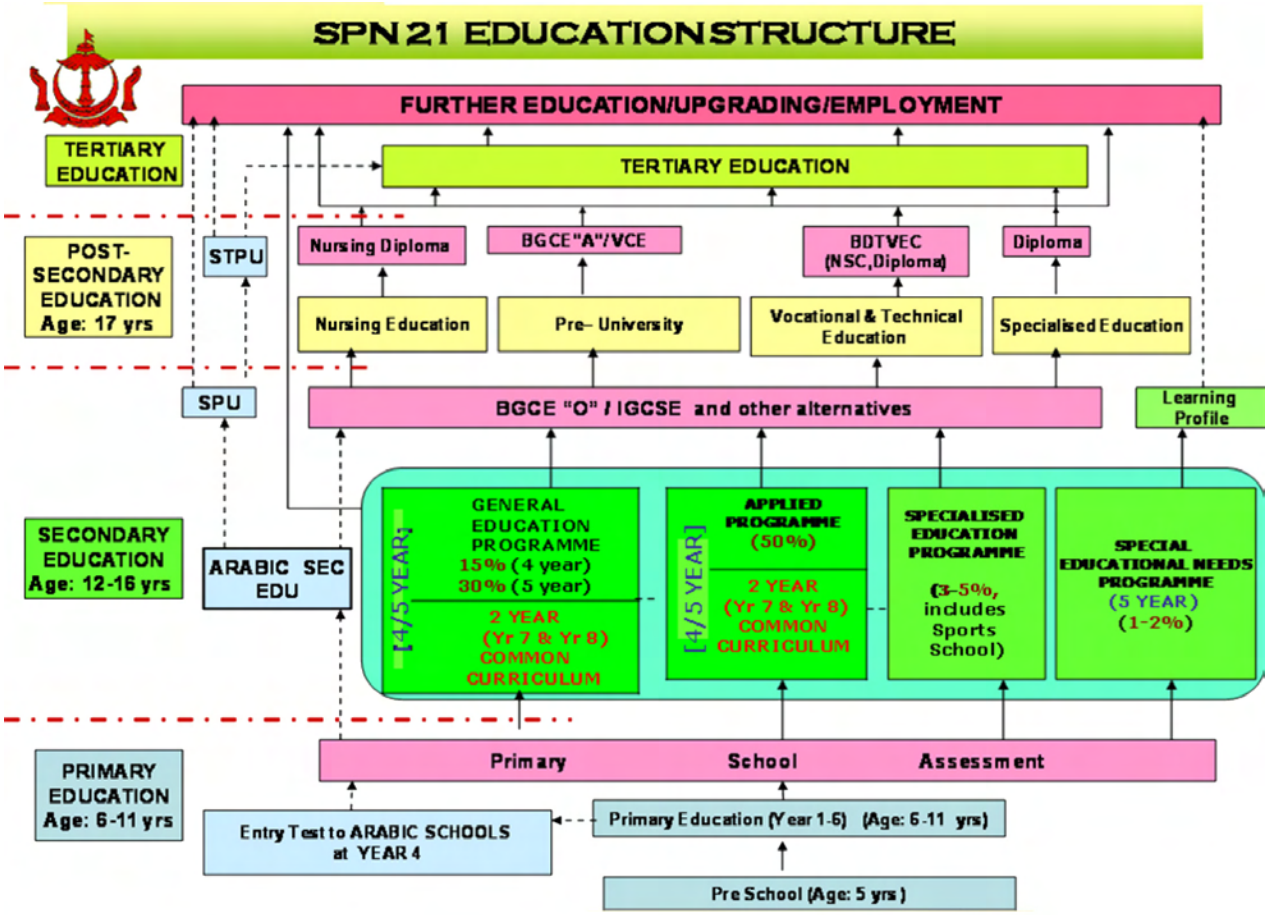
The shift from the old educational framework to SPN 21 was a decision that takes into consideration key aspects of quality education through the provision of a balanced, relevant, and differentiated curriculum which is benchmarked against credible quality assurance or assessment systems of international standards. The new system offers flexibility with its range of educational programs tailored to better suit the interests, needs, and abilities of different students. Cutting down the total number of years of schooling from 12 to 11 has also been integrated into SPN 21.

The design of SPN 21 aims to provide learners with broad, balanced, relevant, and differentiated learning experiences and takes into account each learner's needs while making provisions for progression and continuity. It has been characterized as more responsive to changes in the society and the economy and will lead learners toward lifelong learning. The individual needs of learners are appreciated as the core of learning experiences. The curriculum framework is a general guide and schools are encouraged to use it in line with identified specific needs and characteristics of learners.

Educational organization: Basic education in Brunei Darussalam lasts for 11–12 academic years. At age five, children start going to school with one year of preschool (kindergarten). They then move up to the Elementary education level, which spans six academic years. At the end of year 6,

students take a public examination to determine whether they can progress to the secondary level or not. If the students pass, they progress to either 4–5 years of secondary education—two in the lower secondary level and 2–3 in the upper secondary level.

FIGURE 2. SPN 21 Education Structure



Source: Dr. Chong Kui Kian, Ministry of Education, Negara Brunei Darussalam, 2011

At the end of the lower secondary level (year 9), the students have the option to choose between a 2–3-year GEP and a three-year AEP, each of which offers relatively similar core and complementary subjects with varying electives.

Graduates of 11–12 years of basic education receive an "O-Level" certificate of education. Prior to transitioning to the tertiary level, students need to acquire an "A-Level" certificate of education or some other certificate or diploma.

School calendar: One academic year in Brunei Darussalam covers 26 weeks divided into four school terms, including 10 school breaks. Examination periods occur mainly over four weeks in May or June and over 10 weeks from the middle of September to the end of November.

2.2.2 Malaysia

Population and composition: Malaysia has a population of 28.8 million, mostly comprising Malays, while the rest are made up of Chinese, Indians, and members of indigenous tribes. Some 60% of the country's population is Muslim while the rest are Buddhists, Hindus, Christians, Taoists, or members of other religions. In 2007, its expenditure on education as a portion of its GDP was 4.5%, ranking ninetieth out of 186 countries in terms of educational spending. The country has a literacy rate of 93% and an unemployment rate of 3.5%.

Institutional governance: The Malaysian education ministry oversees the country's basic education system. The government provides 11 years of free schooling to its citizens, which will be expanded to 12 years by 2012 to include preschool education. Elementary education is compulsory and parents who fail to send their children to government-run elementary schools can be penalized, as mandated by the Education Act 1996.

Schools are categorized either as national or national-type schools, each differentiated by the languages taught based on their respective curricula. National schools devote a substantial amount of time to learning both Malay and English while national-type schools prioritize teaching Malay, Chinese, and Tamil while English is only taught in the latter years of elementary school.

Educational policy: The Malaysian education system is grounded on a number of national proclamations geared toward the development of the country and of individual students. The educational policy framework is a composite of fundamentals from the *National Philosophy of Education*, the *Education Development Master Plan 2006–2010*, and the *National Education Policy*. In addition, the *Education Act of 1996* and the *National Curriculum Regulations of 1997* both emphasize the production of trained manpower and the creation of citizens that uphold the nation's aspirations in achieving a national identity (*Cabinet Committee Report*, 1979). To this end, the *National Education Policy* requires that all schools use a common syllabus and similar materials. The MOE's Curriculum Development Division develops the national curriculum for all government-run and private schools.

Since 1988, Malaysia's basic education has been based on the 1982 *Integrated Curriculum for Elementary Schools* (Kurikulum Bersepaduh Sekolah Rendam). This was, however, replaced by the *National Standards-Based Elementary School Curriculum* this year to ensure that education stays relevant to the current and future needs of the country (Malaysia Country Paper for the SEAMEO Experts Meeting, 2011). This new curriculum was implemented in the preschool level in 2010 and in the elementary level in 2011. The secondary level, meanwhile, will not be using this curriculum until 2014.

The National Standards-Based Elementary School Curriculum entailed changes in content, materials, pedagogy, time allocation, assessment methodologies, and school management. In particular, greater attention was placed on developing skills like creativity, innovation, entrepreneurship, and ICT.

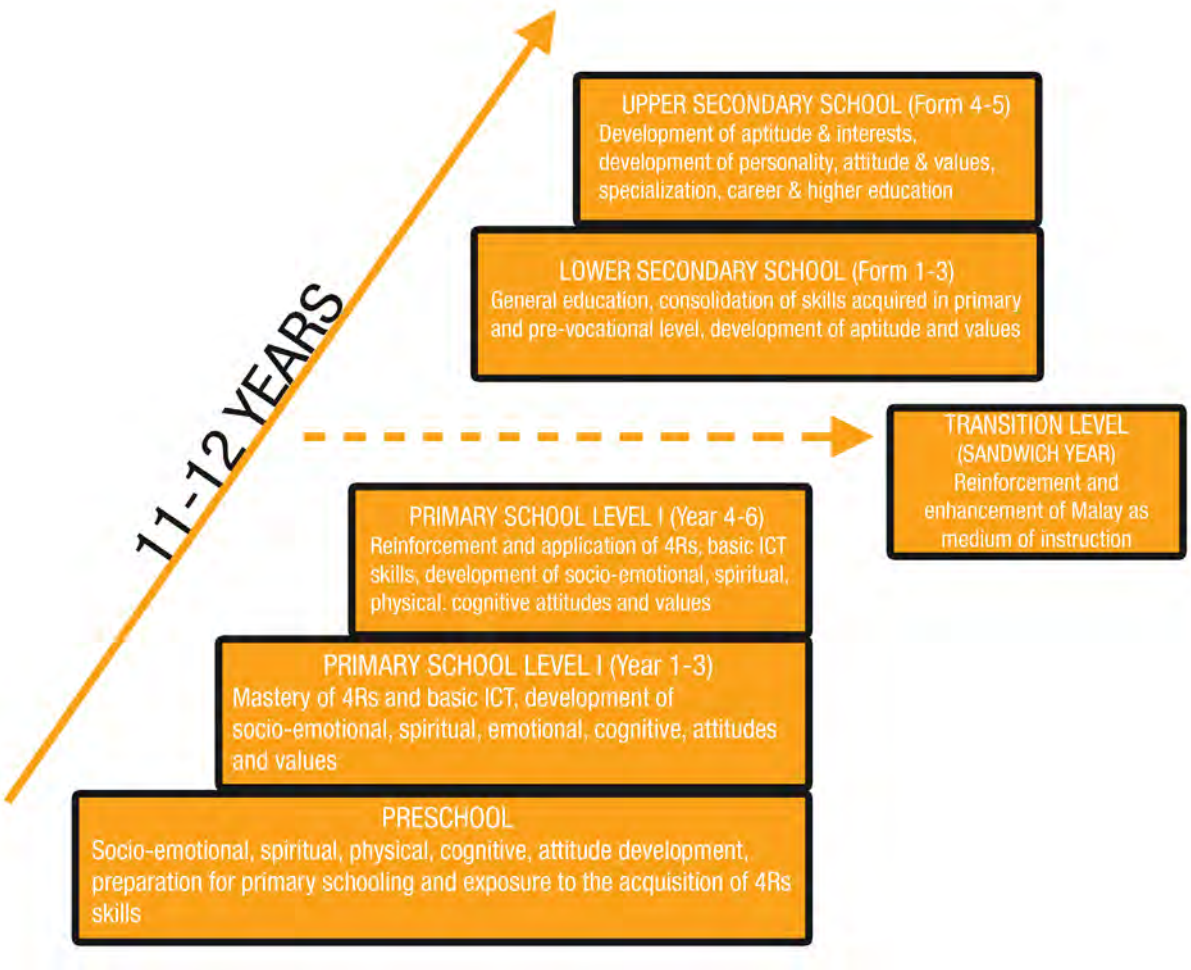
The National Standards-Based Elementary School Curriculum is based on six key thrust areas—communication; spirituality, attitudes, and values; humanities; personal development; physical and aesthetic development; and science and technology. Under the standards-based curriculum, competencies that the students need to master are clearly defined within a stipulated duration and stage of schooling. Assessment activities are designed to measure the degree by which these competencies are developed. The curriculum specifies standards for content and learning. Content standards identify knowledge, skills, and values related to a particular course discipline within a stipulated duration of schooling. Learning standards, meanwhile, prescribe measurable criteria or indicators for assessing the quality of learning and learning achievements of students.

Educational organization: Preschool education is noncompulsory in Malaysia although children usually begin preschool between the ages of four and six. Preschool education will only be formally included in the basic education cycle beginning 2012. At the age of six or above, children progress to Elementary school without the need to pass a formal or a national assessment test. Elementary education is divided into two stages. Stage 1 covers years 1–3 while stage 2 covers years 4–6. At the end of stage 2, students are required to take the elementary School Evaluation Test and an aptitude test. All students, however, are automatically promoted to secondary education after taking the said tests, regardless of results. Students from national-type Chinese and Tamil Elementary schools, however, are required to take a transition year, also called a remove class or a sandwich year, to gain proficiency in Bahasa Malaysia. Those who performed well in the Elementary School Evaluation Test are allowed to forego the transition year and to immediately proceed to secondary school.

The Malaysian secondary education system is similarly divided into two stages. The lower secondary stage covers forms 1–3 while the upper secondary stage covers forms 4 and 5. After completing form 3, students are required to take the Lower Secondary Assessment Test, which gauges their proficiency in all core subjects and guarantees automatic promotion to the upper secondary level. The last two years of upper secondary education places students in streamed groups based on their academic abilities, talents, and interests. Academically inclined students proceed to academic schools that focus on the science, arts, and religious streams. Those who are not inclined toward academics have the option to proceed to one of 55 vocational and technical schools or to any of the two art schools that cater to students interested in performing arts. After completing forms 4 and 5, students take the Malaysian Certificate of Education Test, which is equivalent to the GCE "O-Level."

School calendar: Malaysia uses two school calendars for groups A and B. The required total number of school days in Malaysia is 210.

FIGURE 3. Education Cycle of Malaysia



Source: Zamzaimitul, Akmal Hisham Ahmad, 2011

TABLE 5. SY 2011 School Calendar in Malaysia

	Group A*	Group B**
Term 1	2 January 2011 to 26 May 2011	3 January 2011 to 31 March 2011
Midyear Holiday	27 May to 11 June 2011	28 May 2011 to 12 June 2011
Term 2	12 June 2011 to 17 November 2011	13 June 2011 to 18 November 2011
Final Year Holiday	18 November 2011 to 31 December 2011	19 November 2011 to 1 January 2012

Legend:

** Group A(Kedah, Kelantan, Terengganu) | ** Group B (Perlis, Lulau Pinang, Selangor, Sabah, Sarawak, Negari Sembilan, Melaka, Johor, Pahang, Federal territories, Kuala Lumpur, Labuan, and Putrajaya)*

2.2.3 Philippines

Population and composition: The estimated 94 million population of the Philippines is greatly defined by its cultural diversity with more than 100 ethnic groups and with just as many indigenous ethnic languages (120–170). Around 80% of the population is Roman Catholic while 5% comprise Muslims and members of other religious groups such as Iglesia ni Kristo or Evangelicalism. The country is challenged by an estimated poverty rate of 32.9% and an unemployment rate of 7.3%.

Under the Philippine Constitution, the education sector needs to be prioritized and is allotted the biggest share of the public budget. Despite this, however, the Philippine allocation for education remains one of the lowest in Southeast Asia. In 2007, its expenditure on education as a portion of its GDP was only 2.3%, ranking one-hundred-sixty-second out of 186 countries in terms of educational spending. The literacy rate remained stagnant at 92.6% over recent years.

Educational policy: The Philippine education sector is legally supported by policies such as the *1987 Philippine Constitution*, the *1982 Education Act*, and the *2001 GOBEA*. The National Preschool Education Program was developed through the *Early Childhood Care and Education (ECCE) Act*. At present, the secondary level is experiencing reforms with the adoption of the 2010 Secondary Education Curriculum. Under H.E. President Benigno Simeon C. Aquino III, the commitment is to improve access to kindergarten education and adding additional years to the secondary education system. Planning for this basic education reform agenda is known as K to 12, which is currently on-going.

Educational organization: The total basic education cycle in the Philippines spans 10 years. Basic education is compulsory for children aged 6–12, which covers six years of Elementary education.

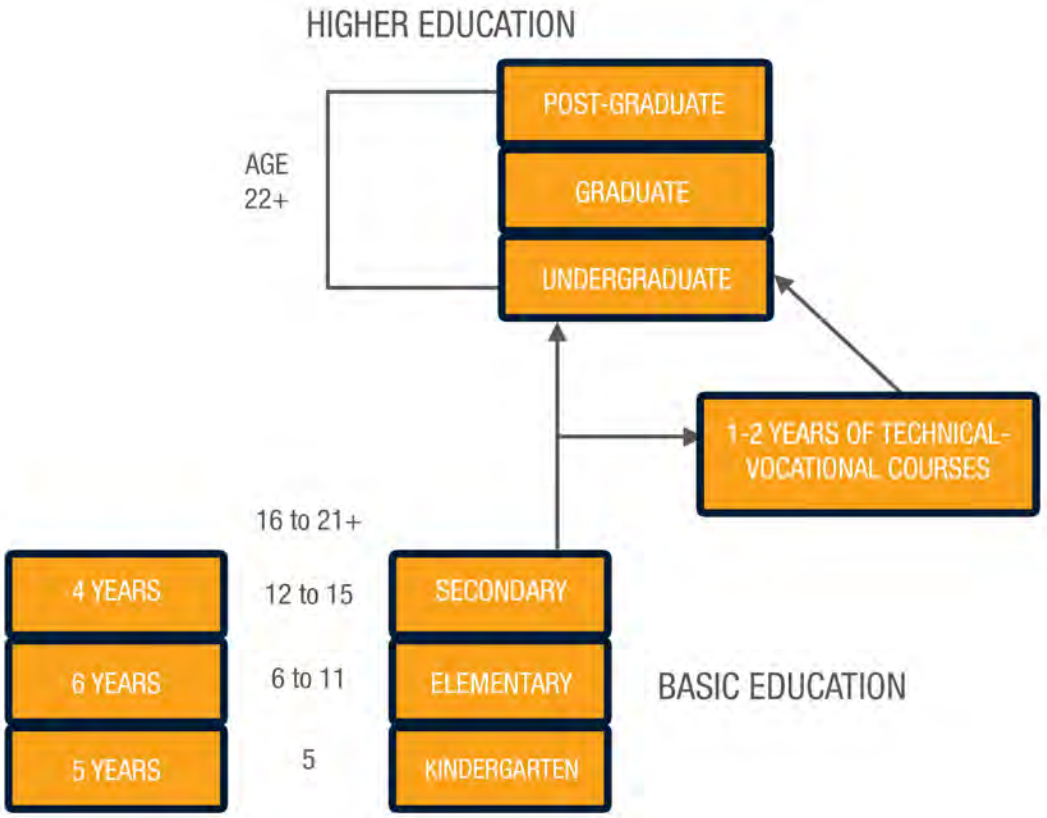
Preschool education is offered in kindergarten, nursery, and preparatory schools and daycare centers. These are mostly privately funded until RA No. 6972 or the *Village-Level Total Protection of Children Act* mandated that every LGU establish a public daycare center in every village though universal establishment of daycare centers has yet to be accomplished, especially in rural areas. Prior to entering elementary school, children are required to take a school-readiness test. Those who are not yet ready have to take up the *Eight-Week Early Childhood Care and Development (ECCD) Curriculum* in grade 1 to develop readiness skills. Those who are, on the other hand, can join classes that already utilize the grade 1 curriculum.

Elementary education utilizes the *2002 Basic Education Curriculum (BEC)*. Two tests are given to elementary schoolchildren—first is the SReA Test, which determines groupings, types of instruction, assistance, and guidance grade 1 entrants need, and second, the NAT, given to grade III and grade VI, which gauges the students' readiness for the next higher education level.

Enhancements to the secondary level BEC have resulted in the introduction of the *2010 Secondary Education Curriculum* guided by a backward design curriculum framework known as Understanding

by Design (UbD). This curriculum includes the addition of special interest programs for students, to complement compulsory subjects. Secondary school graduates are not mandated to take a national test and other school-based assessment. Secondary students in technical and vocational schools may also seek certification from the Technical Skills and Development Authority (TESDA) for vocational competencies under the Technology and Livelihood Education subjects.

FIGURE 4. Current Education Ladder in the Philippines



Source: Philippine Higher Education Guide, CHED 2003

School calendar: The Philippine SY begins in June and ends in March, covering a total of 203 school days (40 weeks) that are spread throughout four grading quarters. April and May comprise the summer break when students who have been retained are required to take up summer classes.

2.2.4 Singapore

Population and composition: Singapore has a small population of 4.7 million that is mostly composed of Chinese, Malays, Indians, and expatriates. In 2009, its expenditure on education as a portion of its GDP was only 3.2%, ranking one-hundred-forty-fourth out of 186 countries in terms of educational spending. Its literacy rate is 92.5% and unemployment rate is 2.1%.

Institutional governance: The Singapore government utilizes the Public-Private Partnership (PPP) strategy in delivering preschool education. It transferred management and operation of preschool education to the private sector in order to unburden public finances. It does, however, offer financial support to qualified preschools. The MOE also provides financial aid to students in need.

Educational policy: Basic education is compulsory in Singapore until age 15. National elementary schools in Singapore refer to any institution with any of the following characteristics:

- Organized and directly supervised by the government
- Receiving grants in aid under the Education Act
- Specified in any order made under Section 3 (1) of the School Boards (Incorporation) Act (Cap. 284A)

Singapore's broad-based curriculum strives to deliver learning in literacy, numeracy, bilingualism, the sciences, humanities, aesthetics, PE, and CME. While the need for a common set of values, competencies, and knowledge is recognized, the importance of differentiation is also acknowledged to address differences in learning talents and abilities and to help students gain their full potential. Basic education upholds a bilingual policy wherein students learn English as the recognized common working language, along with their respective mother tongues (Chinese, Malay, or Tamil).

While the MOE reiterates that the national curriculum should continue to focus on core areas such as literacy, numeracy, and the sciences, it also acknowledges that changes must be made in the future. Specifically, the national curriculum's structure will be loosened through decentralization, allowing schools to customize their respective curricula to match their students' needs. The goal is to provide autonomy and to encourage innovation through flexibility in terms of using the curriculum.

Educational organization: Basic education in Singapore covers 10–11 years, which are broken down into six years of elementary education and 4–5 years of secondary education. In Elementary 3, intellectually gifted students are invited by their schools to take a test in order to determine if they are eligible to join the Gifted Education Program, which uses a more advanced curriculum.

The Ministry of Child and Youth Services (MCYS) is tasked to issue licenses and to regulate all infant, child, and student care centers by setting the standards for setting up and running such centers. On the other hand, privately run kindergarten schools in Singapore are required to register with the Ministry of Education (MOE).

In Elementary 5, the students undergo the Subject-Based Banding Scheme wherein both schools and parents decide what the suitable mix of standard or foundation subjects is for students to take based on their needs and abilities. Foundation subjects intend to help students get the fundamentals of subjects they exhibit weaknesses in before shifting to more difficult levels of standard subjects.

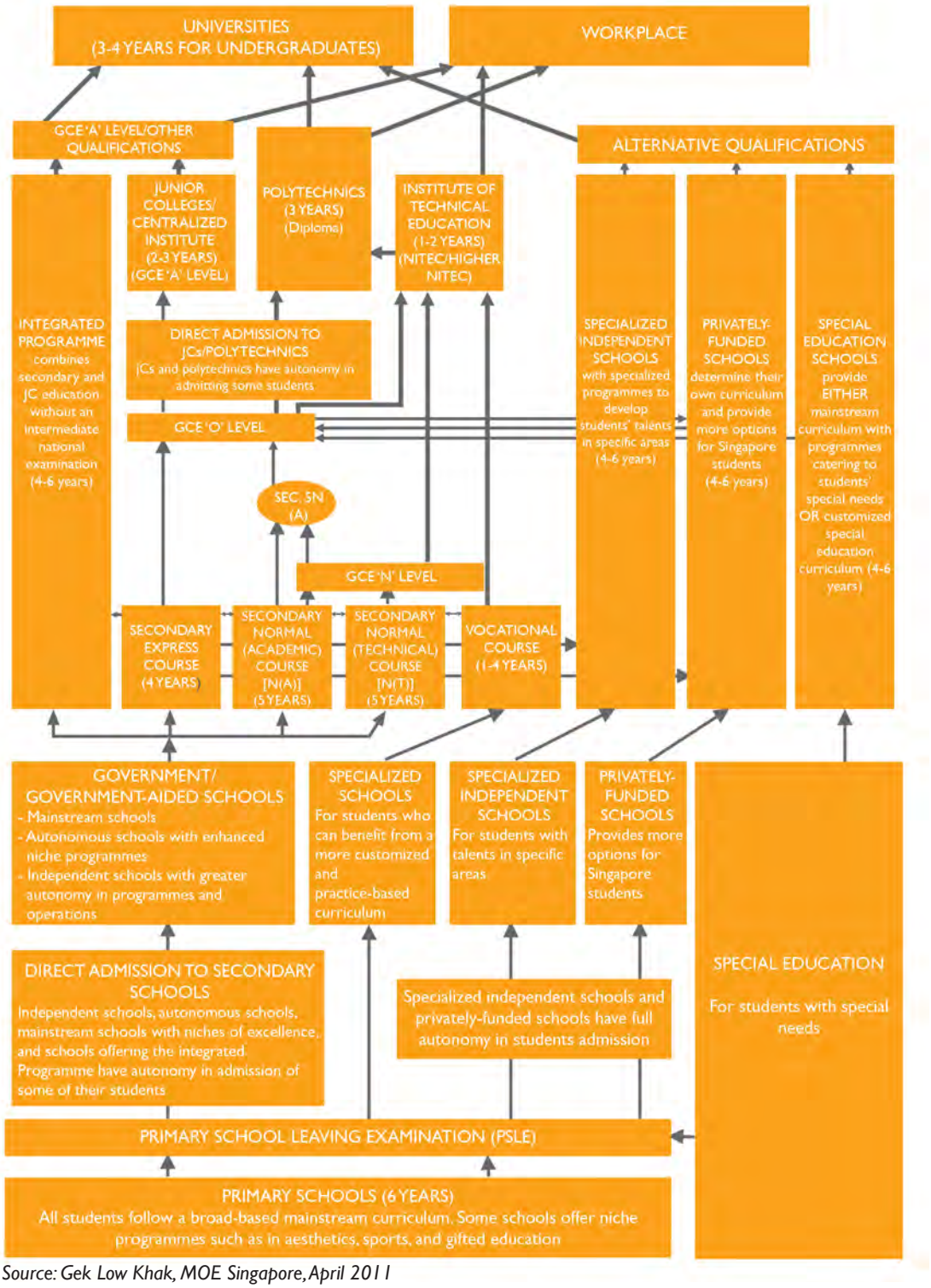
TABLE 6. Elementary Student Banding Process in Singapore

Level			
At Elementary 4	Pupil sits for school-based examinations Based on pupil's results, school recommends a subject combination. Parents fill out option form indicating preferred combination.		
At Elementary 5	Pupil takes subject combination chosen by parents English, mathematics, science and mother tongue are available at standard and foundation levels. Mother Tongue is also available at the higher level.		
End of Elementary 5	Pupil who takes 1 or more foundation subject(s) and does very well School may allow him/her to upgrade some subjects to standard level if school believes s/he can cope; or continue the same subject combination in Elementary 6	Pupil who takes 4 standard subjects and has difficulty coping School may allow him to take 1 or more subjects at foundation level in Elementary 6	All other Pupils School will allow them to continue the same subject combination in Elementary 6
At Elementary 6	Pupil takes subject combination decided by school		
End of Elementary 6	Pupil sits for Elementary Leaving Examination (PSLE)		

Source: SEAMEO INNOTECH Experts Meeting on Basic Education Curriculum in Southeast Asia, February 2011

At the end of Elementary 6, students take the PSLE, which evaluates their suitability to proceed to secondary education and accordingly places them in one of the four secondary school courses that best fits their learning pace, abilities, and inclinations. In the secondary level, students are matched to one of four courses—Special/Express, Normal Academic, Normal Technical, or Integrated Programme (IP). Depending on the stream the student takes, completion of secondary school courses can entail taking the Singapore-Cambridge GCE "O-Level" or "N-Level" Examinations.

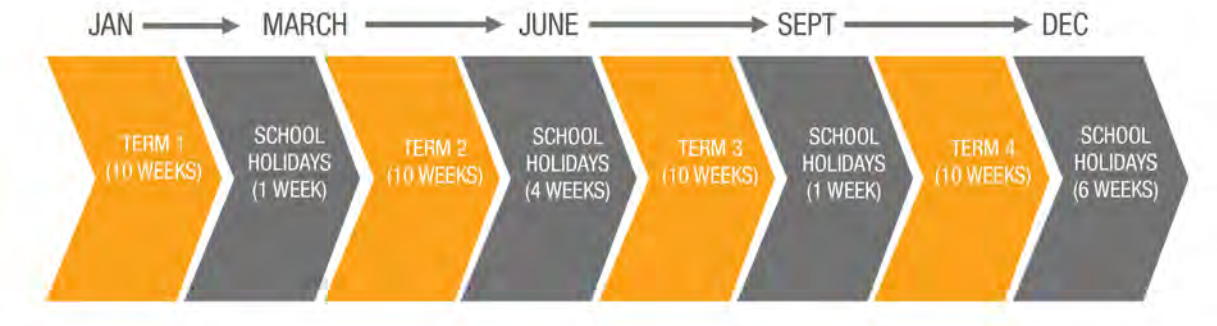
FIGURE 5. Academic Structure in Singapore



Source: Gek Low Khak, MOE Singapore, April 2011

School calendar: Singapore's school calendar is divided into four terms beginning in January and ending in November. Singapore observes a six-week break in late November and December.

FIGURE 6. School Calendar of Singapore



Source: SEAMEO INNOTECH Experts Meeting on Basic Education Curriculum in Southeast Asia, February 2011

CHAPTER THREE PRE-SCHOOL EDUCATION

This section presents a review of the contexts and curriculum structure, organization, design, and alignment of preschool education in Brunei Darussalam, Malaysia, Singapore, and the Philippines to help identify curriculum and policy options for K to 12 education. It reviews input conditions, including aims and goals of preschool education, access to education, governance of schools and teachers, teacher-pupil ratio, medium of instruction, and school calendar.

It will delve into their curriculum structure (duration, time allotment, and desired learning competencies), curriculum organization (content and scope), curriculum design (framework, articulation, and focus), and curriculum alignment (relevance of the curriculum with state standards and goals).

3.1 Input Conditions

3.1.1 Policy Context

Preschool education is classified as level 0 in the UNESCO ISCED.

In Brunei Darussalam, one year of preschool education at age five is free, as stated in *Education Act 2003*. To ensure the provision of high-quality care and education to young children and their families, the ECCE unit of the MOE was established.

In Malaysia, the *Childcare Center Act of 1984*, which was amended in 2007, standardizes and establishes minimum quality requirements for all child care centers and nurseries while the National Education Act of 1996 (Act 550) formally integrates preschool education into the national education system.

In the Philippines, *RA No. 9155* or the *2001 GOBEA* mandates that early childhood education be made part of basic education delivered in preparation for elementary school. Moreover, *RA No. 8980* or the *ECCD Act of 2000* was enacted to institutionalize an integrated and comprehensive national early childcare system. Under the ECCD Act, preschool education covers center-based programs such as public and private preschools, kindergarten or school-based programs, community or church-based ECCE programs, workplace-related childcare programs, and child-minding centers and programs initiated by NGOs. On the other hand, RA

No. 6972 or the *Day Care Act of 1990* provides the establishment of at least one daycare center in every village in the country.

Singapore's preschools are funded by private entities but these should register with the MCYS while kindergarten schools need to register with the MOE. Moreover, the MOE issues the framework for kindergarten curriculum implementation and accreditation.

3.1.2 Governance of Schools and Teachers

The education ministries of Brunei Darussalam, Malaysia, and Singapore provide preschool programs but do not heavily control the curriculum design and implementation. In Brunei Darussalam, kindergarten is part of the BEC since 1979 for children aged five or before a child enrolls in grade 1.

In Malaysia, preschool is currently noncompulsory but, by 2012, it will be included in the national education system and will turn the national education system into 12 years, from six years of elementary and five years of secondary education to seven years of elementary schooling for all children. Afterward, they will continue with five years of secondary education. The MOE or the private sector operates preschools.

Singapore's preschool education is not included in compulsory education at the moment. No government intervention exists in preschool programs and in their curriculum. However, the MOE may lend financial assistance to some parents who want to avail of good-quality preschool education for their children.

In Singapore, two sectors of ECCE for young children exists (i.e., the childcare sector and the kindergarten sector). Childcare centers provide care and education for children aged 2–6. These are licensed by the MCYS. Kindergartens provide preschool education for children aged 4–6 and are privately owned as well as have to register with the MOE.

Childcare fees are state subsidized and poor children are eligible for further financial assistance from NGOs. Kindergarten fees are much lower and are not state subsidized although financial assistance is made available to poor children (UNESCO IBE, 2007).

3.1.3 Aims of Preschool Education

Preschool is the initial stage of organized instruction primarily designed to introduce very young children to a school-type environment (i.e., to provide a bridge between the home and a school-based atmosphere). Upon completing this program, children continue to level 1 of elementary education.

TABLE 7. Aims of Preschool Education in Brunei Darussalam, Malaysia, Singapore, and the Philippines

	Brunei Darussalam	Malaysia	Philippines	Singapore
Goals/ Expectations of Preschool Curriculum	For the holistic development of children in five domains in preparation for elementary education	Develop children in holistic and integrated manner to increase skills, self-confidence, self-esteem, to adopt and excel in elementary schools.	Prepare for life and get ready for grade 1 work.	Support and foster the holistic development Preparation for the journey of the life-long learning

Source: SEAMEO INNOTECH Experts Meeting on Basic Education Curriculum in Southeast Asia, February 2011

Brunei Darussalam, Malaysia, and Singapore endeavor to provide holistic education to preschool children. They focus on developing children's cognitive, physical, and socio-emotional aspects. The Philippines, on the other hand, intends to prepare them for life and schoolwork.

3.1.4 Access and Progression

In the Philippines, preschool education had been noncompulsory and optional until the universalization of kindergarten starting from school year 2011-2012 through DepEd Order No. 37 s. 2011 which encourages all five-year old children to pursue one year of preschool. Then kindergarten for five-year old children was made mandatory and became part of basic education starting school year 2012-2013 by virtue of the Republic Act 10157 or the Kindergarten Education Act. The institutionalization of kindergarten makes one year of preschool as first stage of compulsory and mandatory formal education.

At present, one year of compulsory preschool education is implemented in Brunei Darussalam. This level is recognized as part of formal basic education with government support for children aged five. In 2010, the MOE announced plans to enhance the country's early childhood education by providing preschool education to children below the age of five.

Early Childhood Care and Education (ECCE) is offered to children as young as less than three years old in Malaysia, the Philippines, and Singapore through established daycare and childcare educational institutions. In Malaysia, children aged 4–6 have the option to obtain preschool

education. Preschools are either operated by government agencies or by private entities. By 2012, one year of preschool education will become mandatory and will be included in the national education system, extending the total number of school years from 11 to 12.

Preschool education in Singapore is divided between the childcare and the kindergarten sectors, with the former admitting children aged 2–6 while the latter caters to those aged 4–6. Kindergartens are run by the private sector, including community foundations, religious bodies, social organizations, and business organizations. They offer a structured three-year program covering nursery and kindergartens 1 and 2. Kindergartens are not government subsidized but financial assistance is offered to children from poor families.

3.1.5 Teacher-Pupil Ratio

The teacher-pupil ratios vary across Brunei Darussalam, Malaysia, Singapore, and the Philippines. Brunei Darussalam and Malaysia have two teachers—one teacher and one assistant teacher—per preschool class. Singapore's teacher-pupil ratio is 1:20 while the Philippines's, as per DepEd Order No. 37 s. 2011, is 1:25–30.

TABLE 8. Teacher-Pupil Ratio in Brunei Darussalam, Malaysia, Singapore, and the Philippines

Level	Brunei Darussalam	Malaysia	Philippines	Singapore
Preschool	2:20 (with teacher assistant)	2:25 preschool (one teacher and one assistant)	1:25/30	1:20

Source: SEAMEO INNOTECH Experts Meeting on Basic Education Curriculum in Southeast Asia, February 2011

3.1.6 Medium of Instruction (MOI)

Most of the preschools in Brunei Darussalam, Malaysia, Singapore and the Philippines use English and the mother tongue as medium of instruction. In Malaysia, preschools that use Bahasa Malaysia as MOI are also required to use English at a 50:50 ratio. This means that teaching and learning in the country is bilingual. Bahasa Malaysia is used 600 minutes per week and English is used for the same amount of time. Preschools that use Tamil or Chinese as elementary MOI, on the other hand, must conduct 400 minutes of lessons in Bahasa Malaysia, English, and Chinese or Tamil per week at a ratio of 1:3. In Brunei Darussalam, children are taught in two languages—Bahasa Malaysia and English. In the Philippines, preschools are required to use the children's mother tongue or first language pursuant to DepEd Order No. 74 s. 2008.

TABLE 9. Languages of Instruction in Brunei Darussalam, Malaysia, Singapore, and the Philippines

Level	Brunei Darussalam	Malaysia	Philippines	Singapore
Preschool	Bilingual (Malay and English)	Chinese, Tamil, Malay, English	Mother Tongue and some with English	English

Source: SEAMEO INNOTECH Experts Meeting on Basic Education Curriculum in Southeast Asia, February 2011

3.2 Curriculum Structure

The curriculum structure in this study covers schooling duration, time allocation, and desired learning competencies.

3.2.1 Duration

Kindergarten classes in Brunei Darussalam last one year for kids aged five. Optional preschool education is offered to children aged 4–5 for a span of two years in Malaysia. In Singapore, kids aged 5–6 can take kindergarten classes. In the Philippines, parents may send their children as young as 2 years old to private preschools for a fee. There are also limited number of spaces available in government-funded Day Care Centers for 2-5 years old. As mentioned earlier the Philippine government is trying to implement mandatory kindergarten for 5-year-old children. In general, kids aged 3–4 are encouraged to take up some form of preschool education.

TABLE 10. Duration of Preschool Programs and Age Ranges of Children

	0-2	3	4	5	6
Brunei Darussalam	Child Care Centers			Kindergarten	
Malaysia	Child Care Centers		Preschool Education		
Philippines		Day Care, Kindergartens, Nursery		Kindergarten	
Singapore	Child Care Education		Nursery	Kindergarten 1	Kindergarten 2

Source: SEAMEO INNOTECH Experts Meeting on Basic Education Curriculum in Southeast Asia 2011

3.2.2 Time allotment

Part of the curriculum structure is time allocation for learning. Philippine kindergarten programs require 2–3 hours of classes. In Brunei Darussalam, Malaysia, and Singapore, preschool education usually takes 3–4 hours, usually in the morning, and many preschools offer morning and afternoon shifts.

Some daycare centers and work-based child-minding programs offer to attend to children while their parents are at work throughout the day. The longest preschool program is offered in Malaysia (four hours). The Philippines had the shortest time allocation (two hours). All of the countries offer preschool classes from Monday to Friday. The contact hours per day include time for recess.

TABLE 11. Instructional Time of Preschool Classes in Brunei Darussalam, Malaysia, Singapore, and the Philippines

	Brunei Darussalam	Malaysia	Philippines	Singapore
Hours per day	3-3.5	4	2-3	3-4
Day per week	5	5	5	5

Source: SEAMEO INNOTECH Experts Meeting on Basic Education Curriculum in Southeast Asia, February 2011

3.2.3 Desired learning competencies

The four selected Southeast Asian countries' education systems designed and implemented curricula, the content of which, in totality, is intended to achieve preschool education objectives. Among the four, Malaysia is the only country that explicitly states the compulsory use of its *National Standards-Based Preschool Curriculum*. The other countries only prescribe the use of their respective national curriculum standards or frameworks. Brunei Darussalam implements *SPN 21* while Malaysia implements the *National Standards-Based Preschool Curriculum*. The Philippines follows the *National Preschool Education Program* and the *Eight-Week Preschool Curriculum* in grade 1. Singapore recommends the use of the *Framework for Kindergarten Curriculum*.

Preschool education in the four countries aims to prepare children for formal elementary schooling by providing an environment for their cognitive, physical, emotional, and social development.

The main goal of preschool in Brunei Darussalam is to make children socio-emotionally developed and prepared for Elementary 1.

Singapore's preschool educational aims and objectives aspire to train children to know what is right and what is wrong; be willing to share and take turns with others; be able to relate to others; be curious and able to explore; be able to listen and speak with understanding; be comfortable and happy with themselves; develop physical coordination and health habits; and love their families, friends, teachers, and schools.

In the Philippines, preschool education aims to develop children in all aspects (physical, social, emotional, and cognitive) so they will be better prepared to adjust and to cope with life situations and the demands of formal schooling and to maximize the children's potential through a variety of carefully selected and meaningful experiences, considering their interests and capabilities.

3.2.4 Assessment and Testing

Assessment in preschool is continuously done through reporting children's progressive development using assessment tools such as checklists, anecdotes, and narrative reports, along with individual student profiles. No formal or national assessment is, however, carried out at the end of preschool in Brunei Darussalam, Malaysia, and Singapore.

In the Philippines, the DepEd administers the SReA Examinations to determine the children's level of preparedness for Elementary 1. This test is first administered to all grade 1 entrants in public elementary schools to determine their readiness in terms of four domains—gross motor, fine motor, cognitive, and language skills. Those who score 75% or higher are considered "school ready" while those who score below are deemed "not yet ready." Those who are not yet ready undergo early childhood experience exercises in grade 1—an eight-week curriculum made up of various objectives, skills, and developmentally appropriate activities that aim to develop the entrants' readiness skills. The lessons are interesting and stimulating to make learning pleasant and enjoyable and to ease the children's transition from home to school. Those who are school ready, on the other hand, joined classes that use the grade 1 curriculum right away. See Table 12 for Preschool Objectives comparison.

TABLE 12. Preschool Education Objectives

Brunei Darussalam	Malaysia	Philippines	Singapore
COGNITIVE DEVELOPMENT			
Enjoyment in exploring their environment Cognitive and intellectual development Language skills development Expression of creativity	Enable mastery of basic communication skills Enable mastery of basic English language Develop critical thinking skills through enquiry and use of all senses	Develop communication skills Develop sensory-perceptual and numeracy concepts and skills Explore sounds, music and rhythms Develop creative expression	Enable the differentiation between right and wrong Encourage curiosity and allow for exploration Develop aesthetics and creative expression Nurture language and literacy learning Nurture numeracy skills
PHYSICAL DEVELOPMENT			
Foster physical development	Foster appreciation of physical activities as basis for good health Enable physical development Encourage practice of good health and safety measures	Develop gross and fine motor coordination Develop health habits	Foster physical development Foster coordinate and healthy habits Enable motor skills development

Brunei Darussalam	Malaysia	Philippines	Singapore
EMOTIONAL DEVELOPMENT			
Foster emotional development	Development of love for country Instill respect for national language	Inculcate sense of independence Develop love of God, self, others and communities	Foster being comfortable and happy with themselves Inculcate love for family, friends, teachers and schools Nurture self and social awareness
SOCIAL DEVELOPMENT			
Foster social development Enjoyment in participation in creative activities	Instill good manners Inculcate the practice of moral values	Instill the value of following rules and routines	Inculcate values of sharing and taking turns with others Encourage relating to others Provide foundations for environmental awareness

Source: SEAMEO INNOTECH Experts' Meeting on Basic Education Curriculum in Southeast Asia, February 2011

3.3 Curriculum Design

Curriculum design refers to the national framework depicting every aspect of educational program in support of national education aims and standards.

TABLE 13. Brunei Darussalam, Malaysia, Singapore, and the Philippines's Preschool Curriculum Design

Countries	Curriculum Design
Brunei Darussalam	Curriculum framework describes preschool education as an informal programme. All the class activities are facilitated in Malay, except for the English language lessons.
Malaysia	National Standards-based Preschool Curriculum compulsory for use by preschool operators; curriculum based on children's developing personalities of being active, curious, needing love, attention and security; Support materials include concrete, printed, multi-sensory, interactive, and user-friendly learning tools.
Philippines	Curriculum is informal, play-based and activity-oriented; integrates content attention and emphasizes children's active participation; well-defined play or activity corners are allocated; daily schedule is divided into blocks of time for distinct activities; Medium of instruction is child's first language.
Singapore	Curriculum design was developed by MOE made available to all preschool schools and to be used as a guide for their respective programs, which advocate holistic development in moral, cognitive, social-emotional aesthetic and physical domains through play and interaction. Preschool education use English as first language and mother tongue as second language.

Source: SEAMEO INNOTECH Experts' Meeting on Basic Education Curriculum in Southeast Asia, February 2011

3.4 Curriculum Organization

Curriculum organization refers to content and selection of curriculum elements and type. In the preschool level, the content of curricular program is relatively more activity-based. Brunei Darussalam, Malaysia, Singapore, and the Philippines hone children's moral values, numeracy skills, language and literacy skills, social skills, physical and motor development, creativity, art skills, and musical talents using different methodologies through local songs, rhymes, games, dances, stories, and play activities to enrich the competencies of children.

TABLE 14. Curriculum Organization of the Preschool Curriculum

Brunei Darussalam	Malaysia	Philippines	Singapore
• Moral values/ education, Islamic education • Mathematics • Physical (health and safety, aspects of movements, games and early science) • Aesthetics/ Creativity (arts and crafts, singing, stories and drama) • ICT awareness	• Language, literacy and communication • Islamic and moral education • 3 Rs (literacy and numeracy) • Others: morning routine, recess and reflection	• Values education • Physical health and motor skills • Socio-emotional skills • Cognitive skills • Creative arts skills • Language and readiness for reading and writing • Communication skills	• Language and literacy skills • Basic number concepts • Social skills • Creative and problem solving skills • Appreciation of music and movement • Outdoor play

Source: SEAMEO INNOTECH Experts Meeting on Basic Education Curriculum in Southeast Asia, February 2011

3.5 Lessons Learned from the Regional Comparison of Preschool Education

Preschool is often associated with level 0 of education of elementary school. In Malaysia and Singapore, preschool level is not compulsory but the government provides parents support to encourage them to send their five-year old children to preschool.

In the Philippines, the government is mandated to provide accessible mandatory preschool through RA 10157 that institutionalized kindergarten into the basic education system. Provision of early childhood education comprises center-based programs such as village daycare services, public and private preschools, kindergarten or school-based programs, community or church-based early childhood education programs initiated by NGOs, workplace-related childcare and education programs, child-minding centers, health centers and stations, and home-based programs (e.g., neighborhood-based play groups, family daycare programs, parent education, and home-visit programs). Brunei Darussalam and the Philippines require all five-year-olds to enroll in pre-school.

Little children are exposed very early on to shapes and patterns that they are often attracted to and fascinated with. This appreciation should continue to be nurtured when they start going to school. This is the idea behind Singapore's kindergarten curriculum, which lists only two strands—number concepts and shapes.

In terms of values education, kindergarten education offers lessons on civic duties, nationalism, being productive, and having a positive attitude toward work. This list of values should be reconsidered.

The Philippines may consider adding more hours to preschool to align its curriculum with the regional standard of allotting at least 3–4 hours.

CHAPTER FOUR ELEMENTARY EDUCATION

4.1 Elementary Education Input Conditions

4.1.1 Aims and Goals of Elementary Education

The goals of Brunei Darussalam, Malaysia, Singapore, and the Philippines for elementary education focus on cognitive, physical, social, emotional, and spiritual development.

In Brunei Darussalam, the aim of the curriculum is to help the MOE achieve its vision and mission to provide holistic education in order to let the children achieve their fullest potential to be able build a developed, peaceful, and prosperous nation. Its specific objectives are:

- To provide holistic quality education
- To raise achievement levels
- To develop lifelong learning
- To prepare learners to gain valuable and marketable skills

In Malaysia, the National Education Policy laid the foundation for the national education system that uses a common curriculum. In line with the National Philosophy of Education, the curriculum aims to achieve desired educational goals and objectives such as promoting overall individual development in a holistic manner that integrates spiritual, emotional, intellectual, and physical development. The individuals' potentials that need to be developed are relevant to national needs, which encompass dimensions such as individual, social, economic, political, modernization, and globalization needs. In addition, the curriculum 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.

Mastery of basic skills such as reading, writing, numeracy, and ICT skills remains the utmost priority in Brunei Darussalam, Malaysia, and Singapore. In the Philippines, the elementary level has, for its goals, the acquisition of fundamental knowledge in science, civics, culture, history, geography, arts, HE, and livelihood education as well as the application of this knowledge to life situations.

Apart from cognitive development goals, Brunei Darussalam, Malaysia, Singapore, and the Philippines also aim to make elementary education the foundation of physical development. Brunei Darussalam and Malaysia aim to strengthen elementary students' emotional growth and physical fitness, while the Philippines and Singapore aim to teach them basic health knowledge and to cultivate in them the formation of desirable health habits and practices.

Moreover, Singapore aims to develop literacy and problem-solving skills as well as a strong foundation for the education journey in elementary schoolchildren.

All the four countries underscored the importance of social development and emphasized different social values such as cooperation and respect (Brunei Darussalam), leadership (Malaysia), citizenship and participation (Philippines), and sharing and friendship (Singapore). Of course, a student's social development is not rigid and is not limited to the confines of desired social values. It is, however, worth noting that the Philippines noticeably emphasized concepts of democracy, rights, participation, and citizenship—values that operate within the broad context of politics. Children of elementary school age may still be too young to understand these concepts though. As such, complicated values such as leadership and respect for the environment may be amiss. In addition, only the Philippines aims to prepare elementary students for honest and gainful work. While the three other countries focus on developing children as individuals within a social environment, the Philippines is already grooming them as part of the workforce at a very early stage.

Unanimously expressed as an emotional development objective of the four countries is the inculcation of patriotism, albeit differently stated as "love of nation" or "recognition and understanding of ... nation." The development of spiritual capabilities or sensitivities is an expressed objective only in Brunei Darussalam, Malaysia, and the Philippines due to the central role that religion plays in these countries. Thirst for knowledge, curiosity, and independent thinking are also admirable aims that can be included by the Philippines, which other countries already have.

It must, however, be stressed that these objectives have been set to serve as guide for the direction of education as well as a barometer of how far this direction has been attained. Educators and curriculum developers thus need to keep in mind that setting objectives is not the end but only a means to achieve educational goals.

4.1.2 Access to Elementary Education

The entry age for elementary school, excluding kindergarten, in Brunei Darussalam and in the Philippines is six while in Malaysia and Singapore, it is seven. Elementary education lasts six years in Malaysia, Singapore, and the Philippines. In Brunei Darussalam, it lasts seven years, as one year of preschool is part of the country's elementary education system.

Elementary education is compulsory and free for citizens of Brunei Darussalam, Malaysia, and the Philippines. The Philippines also offers free elementary education for non-Filipino citizens. In Singapore, elementary education is compulsory but not free since the children's parents are expected to pay for certain miscellaneous fees.

Brunei Darussalam, Malaysia, and Singapore do not implement student-retention systems in the elementary level. All of the students progress to the next level, regardless of their grades. The

Philippines has a student-retention policy, which mandates that those who do not attain a grade of 75% or above in compulsory subjects are to be retained in their current grade levels. They cannot progress to the next grade level unless they pass.

4.1.3 Governance in Elementary Education

Brunei Darussalam. The Ministry of Education (MOE) is in charge of supervising elementary schools. It adopted a strategy map, which serves as a visual representation of the ministry's strategy to achieve its mission and vision focusing on four strategic areas—teaching and learning excellence, quality education, professional and accountable organization, and efficient organization. These four areas are integral parts of each and every department within the ministry and tie all departments to one another in an effort to achieve common goals. In order to perform in a broader and in a more balanced approach, this strategy also identified strategic objectives and key initiatives that roll up into four perspectives of a so-called "balanced scorecard"—financial, customer, internal process (acts as a driving force), and learning growth. These are viewed as enablers and are largely related to human capital enrichment by the ministry. As such, these are essential to the driving process for the effective and efficient accomplishment of planned outcomes.

Malaysia. The MOE's role is to ensure that schoolchildren obtain holistic development as individuals mentally, physically, spiritually, and emotionally through imparting general knowledge and skills as well as by cultivating, instilling, and fostering healthy attitudes and accepted moral values in line with the mandates of the National Philosophy of Education. The Malaysian curriculum was developed to promote the development of balanced and well-rounded individuals who are knowledgeable, trained, skilful, patriotic, and highly competitive while exemplifying desirable moral values to meet the country's manpower requirements and growing social needs.

Philippines. The DepEd has been tasked to provide quality basic education that is equitably accessible to all and to lay the foundation for lifelong learning and service for the common good. Public schools are now encouraged to practice "school-based management" and have been allowed greater autonomy through the 2001 GOBEA.

Singapore. The MOE takes care of elementary schools. It designed the Elementary School Curriculum and oversees elementary education, which comprises a four-year foundation stage from Elementary 1 to 4, and a two-year orientation stage from Elementary 5 to 6. The overall aim of elementary education is to give students a good grasp of the English language, their mother tongue, and mathematics.

4.1.4 Teacher-Pupil Ratio

Brunei Darussalam, Malaysia, Singapore, and the Philippines have different teacher-pupil ratios due to varying school populations. In general, small classes abound in Brunei Darussalam, Malaysia, and Singapore. Bigger classes are, on the other hand, found in the Philippines. There are also places where teachers may handle as many as 50 or more students.

TABLE 15. Elementary Level Teacher-Pupil Ratio in Brunei Darussalam, Malaysia, Singapore, and the Philippines

Level	Brunei Darussalam	Malaysia	Philippines	Singapore
Elementary	1:12 (with teacher assistant)	1:19 is the average but in some schools the ratio is 1:50	1:36 is the average (although there are multigrade classes with smaller class sizes and other schools with very big class sizes in some areas of the country)	1:20

Source: SEAMEO INNOTECH Survey on Basic Education Curriculum in Southeast Asia, Feb 2011

4.1.5 Medium of Instruction (MOI) in the Elementary Level

English- and Malay-medium schools exist in Brunei Darussalam and in Malaysia. The Philippines implemented the Bilingual Education Policy founded on its 1986 National Constitution although, in 2009, the government crafted the Multilingual Education Policy, which allowed some subjects to be taught in the children's mother tongue from grades 1 to 3. English is the MOI in Singapore while local languages such as Chinese, Malay, Tamil, or Indian are taught so that the students will not forget their heritage.

In Brunei Darussalam, English and Bahasa Melayu (the national language) are both used as languages of instruction. In Malaysia, students can opt to go to national schools where subjects are taught in Malay, English, or the vernacular. In the Philippines, students are taught in one of eight dialects in the early years of elementary school before the teachers eventually shift to teaching in the national language and in English.

4.1.6 Curriculum Structure

Duration. Brunei Darussalam and Malaysia all have curricula closely attuned to 21st century competencies. Brunei Darussalam implements *SPN 21* while Malaysia implements the *National Standards-Based Curriculum*. The Philippines follows the *2002 Basic Elementary Curriculum (BEC)*.

Elementary education covers six years in all four countries, the levels of which are divided into two main phases. Brunei Darussalam and Malaysia has two phases of Elementary education, each of which comprises three years (years 1–3 and 4–6). In the Philippines and Singapore, the first phase of elementary education covers years 1–4. The last two years are considered intermediate grades in the Philippines and the orientation stage in Singapore. In the Philippines, the term "elementary" is also used to refer to all six years of elementary education.

TABLE 16. Elementary Education Structures in the Four Southeast Asian Countries

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Brunei Darussalam	Lower Elementary (ages 6-8)			Upper Elementary (ages 9-11)		
Malaysia	Stage 1 (ages 7-9)			Stage 2 (ages 10-12)		
Philippines	Elementary Grades (ages 6–9)				Intermediate Grades (ages 10-11)	
Singapore	Foundation Stage (ages 7 -10)				Orientation Stage (ages 111 – 12)	

Source: SEAMEO INNOTECH Survey on Basic Education Curriculum in Southeast Asia, Feb. 2011

4.1.6.1 Elementary Education Goals and Desired Learning Outcomes

The learning objectives in the Philippines are relatively general and compounded compared with the simple and targeted aims of the other three countries. One of the elementary education objectives in the Philippines is the "acquisition of fundamental knowledge, attitudes, habits, and skills in science, civics, culture, history, geography, mathematics, arts, HE, and livelihood education and their intelligent application to appropriate life situations." Moreover, the *Education Act of 1982* (Article III, Section 1) states that the objectives of elementary education are to:

- Provide knowledge and develop the skills, attitudes, and values essential to personal development and necessary for living in and contributing to a developing and changing social milieu
- Provide learning experiences that increase the children's awareness of and responsiveness to changes in and just demands of the society
- Prepare children for constructive and effective involvement
- Promote and intensify children's knowledge of, identification with, and love for the nation and the people to which they belong

- Promote work experiences that develop the children's orientation to the world of work and creativity

- Prepare the children for engaging in honest and gainful work

The learning objectives in the other countries, meanwhile, are as simple as "mastery and understanding of basic scientific and mathematical concepts" (Brunei Darussalam), "mastery of arithmetic or scientific and of technical skills" (Malaysia), or "development of language and numeracy skills" (Singapore). The approach to setting objectives bears implications on monitoring and evaluation. Simple and clear objectives facilitate the creation of clearly defined measures for indicating their achievement or non-achievement. Broad and all-encompassing objectives pose difficulties for developing specific and targeted measures of progress. In the case of the Philippine example above, measuring the acquisition of knowledge versus that of skills will require divergent indicators and methodologies. Hence, this objective can be better divided into two or more goals.

TABLE 17. Desired Learning Outcomes in Elementary Education

	Brunei Darussalam	Malaysia	Philippines	Singapore
Mastery of 3Rs			☒	
Functional literacy				
Effective communication in English and mother tongue				
Basic ICT skills				
Mastery of scientific and technical skills				
Mastery of arithmetic skills				
Problem-solving skills				
Interest and talents in culture and arts	☒			
Comprehension of verses from Al-Quran				
A successful reader				
Problem-solving skills				
Non-academic curriculum focus (sports, performing arts)				

Source: SEAMEO INNOTECH Survey on Basic Education Curriculum in Southeast Asia, Feb. 2011

Whereas the cognitive development objectives in Brunei Darussalam, Malaysia, and Singapore explicitly focus on mastery of language and numeracy or mathematical and scientific concepts (composition of core subjects), those in the Philippines emphasize mastery of all subjects, including non-core subjects such as civics, culture, HE, and livelihood education. This inability to focus, even

at the level of objective setting, on mathematics and science may partially explain the consistently poor performance of Filipino elementary students in the TIMSS.

While Filipino educators recognize the necessity of ICT in twenty-first century education, mastery of ICT skills is not an explicitly stated objective of elementary education. Meanwhile, the national ICT-related learning objectives in the other countries are facilitating their provision of free computers to eligible families in Malaysia, the equipment of all schools with computers in Singapore, and the expansion of ICT use in Brunei Darussalam.

4.1.6.2 Time Allotment for Elementary Education Subjects

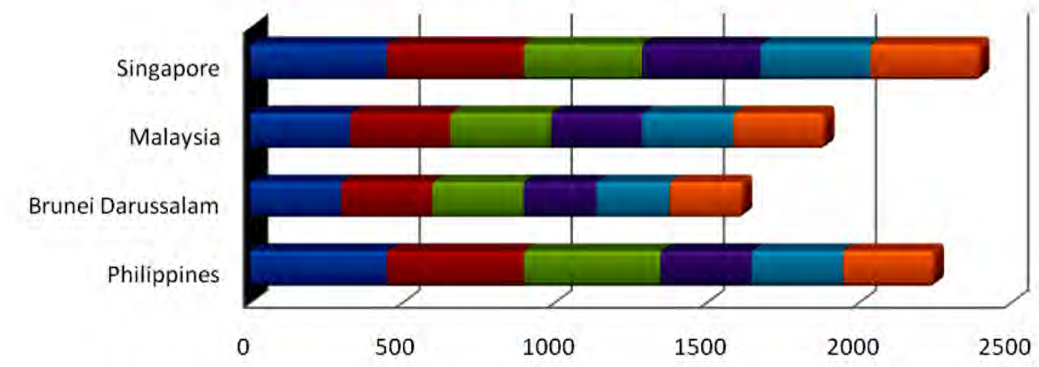
The Philippines imposes the greatest demand on elementary students' time in class, prescribing a total of 1,800 minutes per week for subjects in the lower elementary level (grades 1–3) and up to 1,850 minutes per week for subjects in the upper elementary level (grades 4–6). The time demands are mainly heavy for subjects such as mathematics, science and health, and makabayan, including arts and HE.

English: The amount of time allotted for English is comparably high in both the Philippines and in Singapore where the total number of hours per week is more than the total number of hours allotted for national languages.

The amount of time allotted for English in elementary grades in the Philippines is relatively high (450 minutes per week), signaling that learning the language is a high priority for the development of elementary schoolchildren. The same amount of time allocation is required by Singapore for children from Elementary 1 to 2. Elementary 3–4 children currently spend less time learning English at 300 minutes per week while those in Elementary 5 and 6 do so even less at 360 minutes per week.

In Brunei Darussalam, the amounts of time allocated for learning English and Bahasa Melayu are equal (300 minutes per week) while Malaysia allocates 330 minutes per week for students in Elementary 1–3 levels and 300 minutes per week for those in Elementary 4–6 levels.

FIGURE 7. Comparison of Time Allocation for English

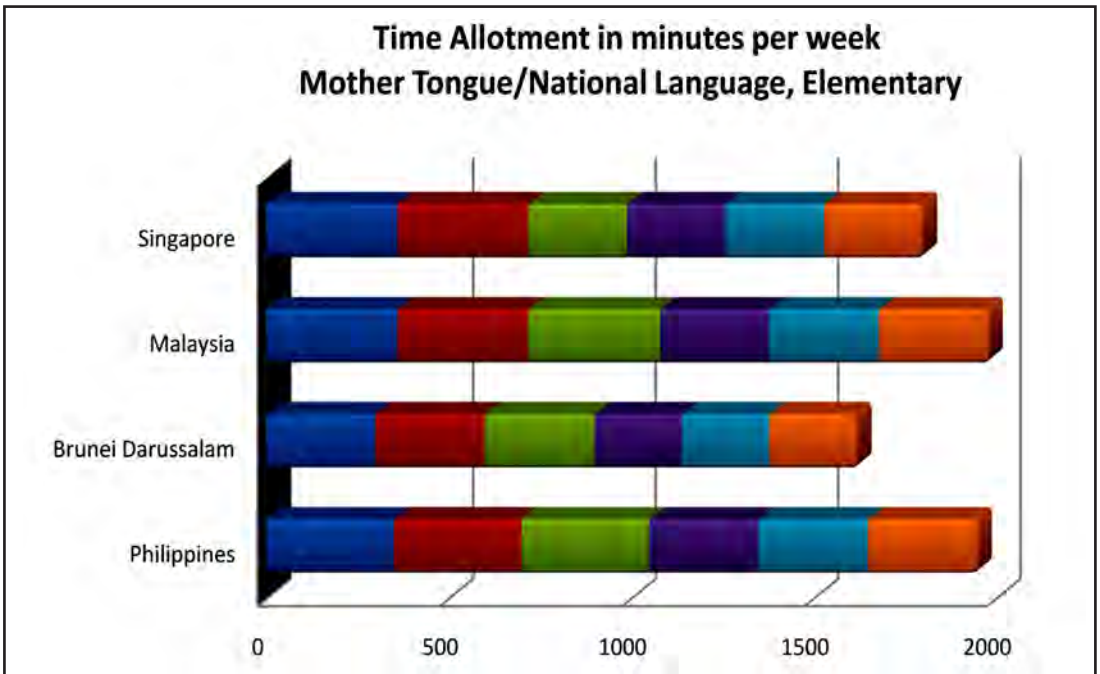


	Philippines	Brunei Darussalam	Malaysia	Singapore
Grade 1	450	300	330	450
Grade 2	450	300	330	450
Grade 3	450	300	330	390
Grade 4	300	240	300	390
Grade 5	300	240	300	360
Grade 6	300	240	300	360

Source: SEAMEO INNOTECH Survey on Basic Education Curriculum in Southeast Asia, Feb. 2011

Mother Tongue or the National Language: The amount of time allotted for teaching the national language in the Philippines is comparable with that in Singapore and in Malaysia (350 minutes per week). Just like Brunei Darussalam, Malaysia, and Singapore, the amount of time allocated for learning the mother tongue decreases starting grade 4. Interestingly, in Malaysia, more time is allotted to teaching the national language (Malay) over English.

FIGURE 8. Comparison of Time Allocation for Mother Tongue or the National Language



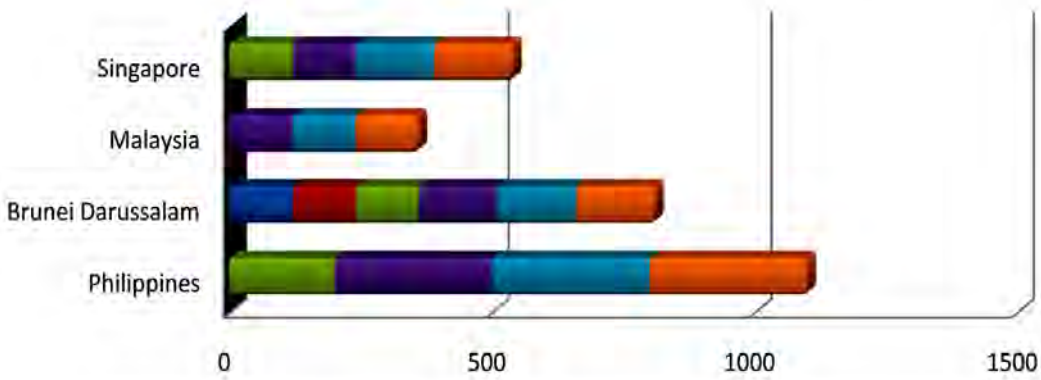
	Philippines	Brunei Darussalam	Malaysia	Singapore
Grade 1	350	300	360	360
Grade 2	350	300	360	360
Grade 3	350	300	360	270
Grade 4	300	240	300	270
Grade 5	300	240	300	270
Grade 6	300	240	300	270

Source: SEAMEO INNOTECH Survey on Basic Education Curriculum in Southeast Asia, Feb. 2011

Science: Science and technology courses in the other three countries are taught in about 120 minutes per week on average while the Philippines allocates 300 minutes per week for these.

Just like in Singapore and in Malaysia, science is not offered to students until they reach grade 3. From grades 4 to 6, the Philippines allots the longest period of time for teaching science (300 minutes per week).

FIGURE 9. Comparison of Time Allocation for Science

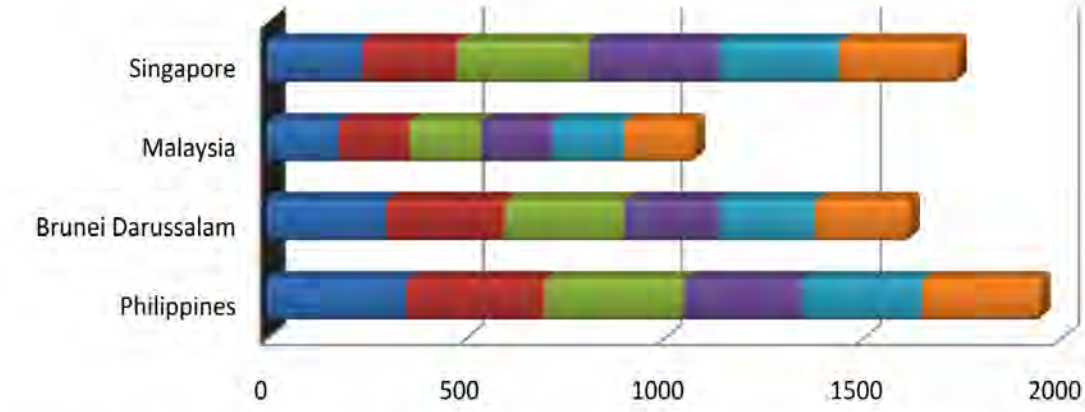


	Philippines	Brunei Darussalam	Malaysia	Singapore
Grade 1		120		
Grade 2		120		
Grade 3	200	120		120
Grade 4	300	150	120	120
Grade 5	300	150	120	150
Grade 6	300	150	120	150

Source: SEAMEO INNOTECH Survey on Basic Education Curriculum in Southeast Asia, Feb. 2011

Mathematics: The Philippines allocates the most amount of time for mathematics compared with the three other countries. Given the good performance of Singapore and Malaysia in mathematics, lesser time allocated to the subject may suggest that Malaysia and Singapore only have better time management approaches or curriculum planning. There may also be differences between the prescribed and actual amounts of time allotted to learning mathematics.

FIGURE 10. Time Allocation Comparison for Mathematics



	Philippines	Brunei Darussalam	Malaysia	Singapore
Grade 1	350	300	180	240
Grade 2	350	300	180	240
Grade 3	350	300	180	330
Grade 4	300	240	180	330
Grade 5	300	240	180	300
Grade 6	300	240	180	300

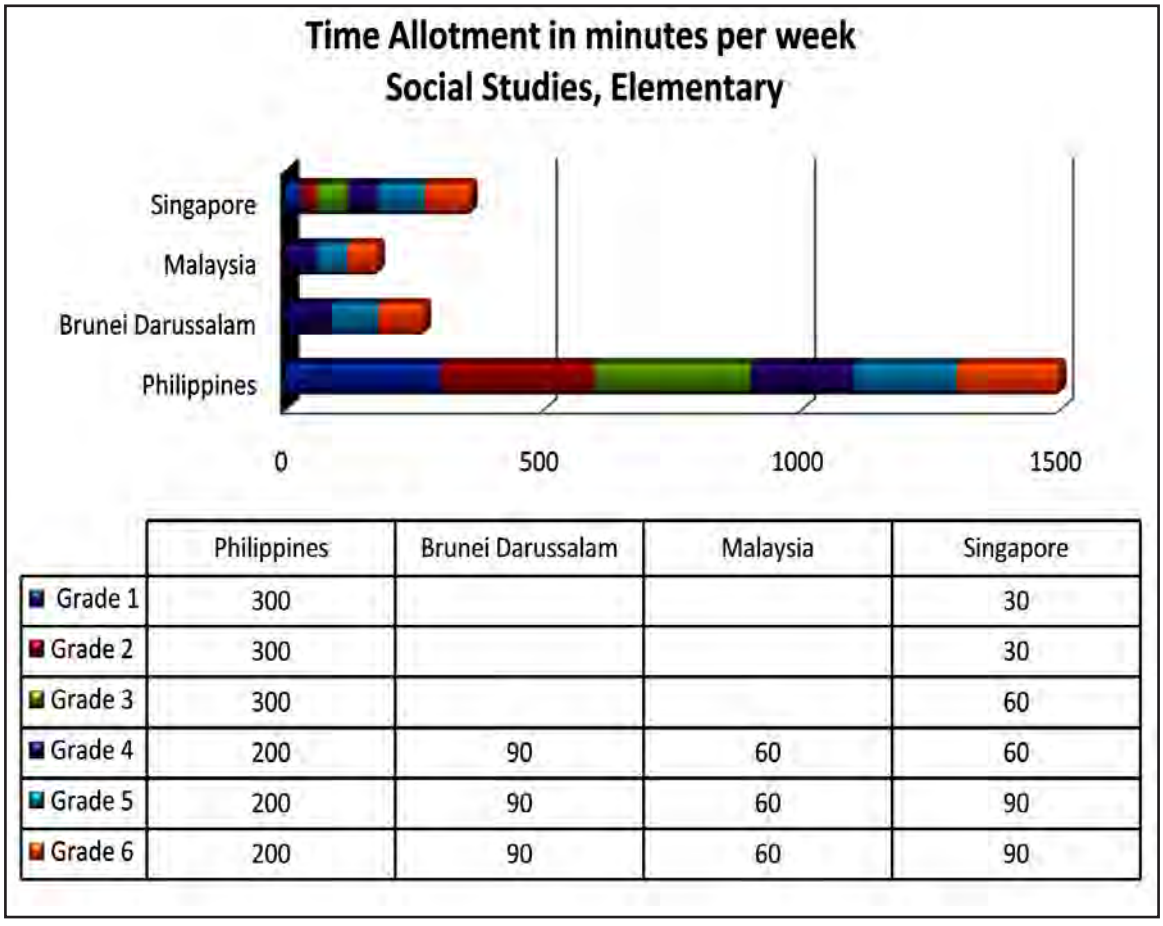
Source: SEAMEO INNOTECH Survey on Basic Education Curriculum in Southeast Asia, Feb. 2011

Social Studies (Makabayan): The amount of time allotted for teaching social studies or Makabayan in the Philippines is disproportionately high compared to that in the other three countries (300 minutes per week in grades 1–3). The high attention to Makabayan can be traced to the elementary education curriculum goals which aim to provide for the: inculcation of spiritual and civic values and the development of a good Filipino based on an abiding faith in God and genuine love of country; and training of the young citizen in his rights, duties and responsibilities in a democratic society for active participation, in a progressive and productive home and community life.

Social studies is not taught in Brunei Darussalam and in Malaysia until grade 4, while in Singapore, it is only taught for only 30 minutes per week. Starting grade 4, Malaysia teaches this subject under humanities 60 minutes per week, while Brunei Darussalam and Singapore allot 90 minutes per week, focusing on the internationalization of patriotism and fostering a spirit of unity.

Social studies in Brunei Darussalam, Malaysia, and Singapore put greater emphasis on maintaining national unity, preparing children to internalize knowledge, skills, and values related to social and environmental issues that arise within their local surroundings. The thematic model aims to expose students to a variety of traditions and customs as well as to encourage involvement in festivals that different communities celebrate.

FIGURE 11. Time Allocation Comparison for Social Studies

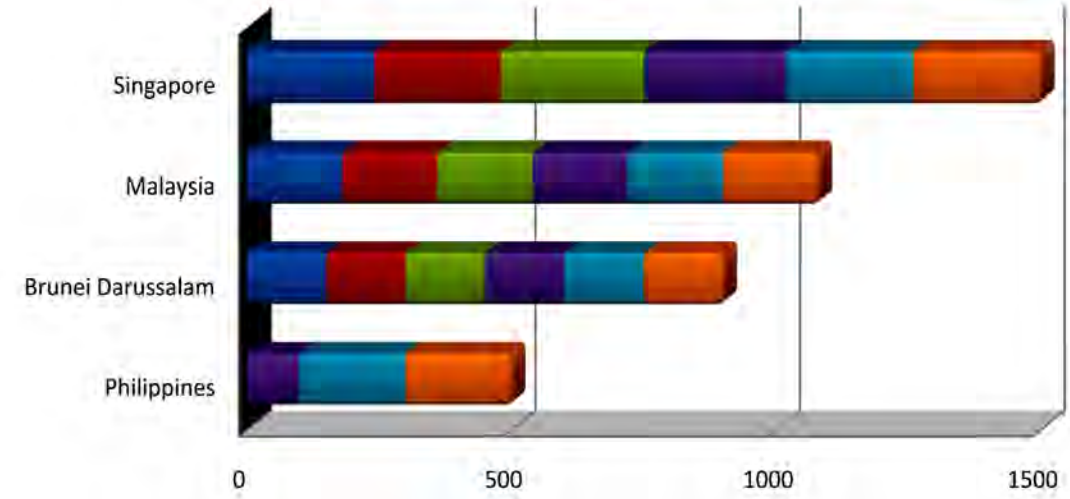


	Philippines	Brunei Darussalam	Malaysia	Singapore
Grade 1	300			30
Grade 2	300			30
Grade 3	300			60
Grade 4	200	90	60	60
Grade 5	200	90	60	90
Grade 6	200	90	60	90

Source: SEAMEO INNOTECH Survey on Basic Education Curriculum in Southeast Asia, Feb. 2011

Music, Arts, Physical Education and Health (MAPEH): MAPEH is considered a core and compulsory subject. Brunei Darussalam, Malaysia, and Singapore put more emphasis on developing physically and emotionally balanced individuals. Hence, these countries allot more time for PE, music, and health. The countries offer MAPEH classes that last an average of 190 minutes per week. The Philippines offers MAPEH from grade 4 for 100–200 minutes per week. Children's physical and personal health is developed through the enhancement of the psychomotor, cognitive, and affective domains. Aesthetic development in Brunei Darussalam, Malaysia, and Singapore develop creativity, talents, and appreciation for the arts, which can be used for self-expression.

FIGURE 12. Time Allocation Comparison for MAPEH

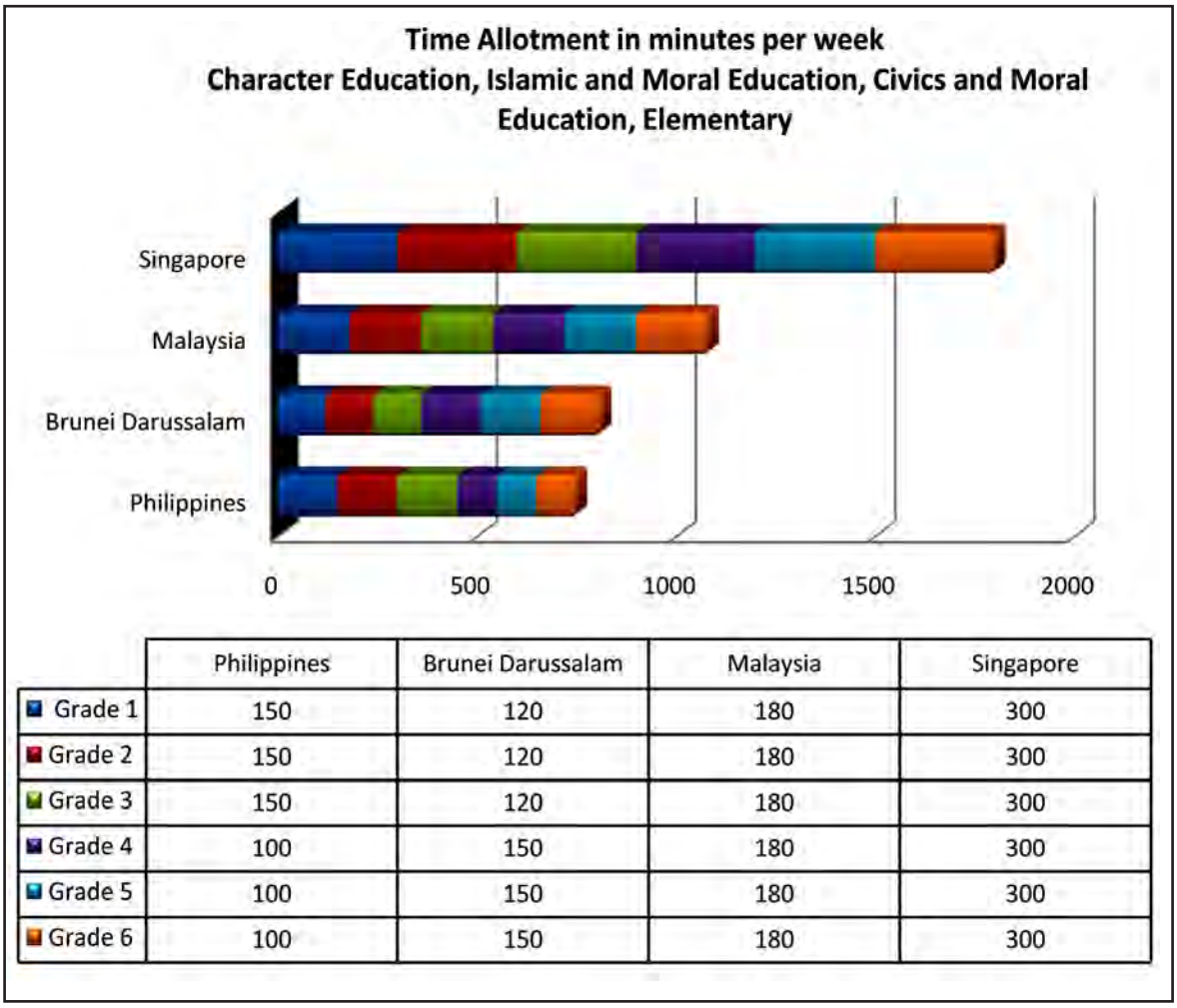


	Philippines	Brunei Darussalam	Malaysia	Singapore
Grade 1		150	180	240
Grade 2		150	180	240
Grade 3		150	180	270
Grade 4	100	150	180	270
Grade 5	200	150	180	240
Grade 6	200	150	180	240

Source: SEAMEO INNOTECH Survey on Basic Education Curriculum in Southeast Asia, Feb. 2011

Character Education: The Philippines offers a somewhat comparable time allocation of 150 minutes per week for character education with Brunei Darussalam (120 minutes per week) and Malaysia (180 minutes per week). Singapore gives more time at 300 minutes per week. Non-Muslims take up moral education in Brunei Darussalam and in Malaysia while Muslims take up Islamic education. This course teaches religious principles and practices, beliefs, attitudes, and values.

FIGURE 13. Time Allocation Comparison for Character, Moral, or Islamic Education

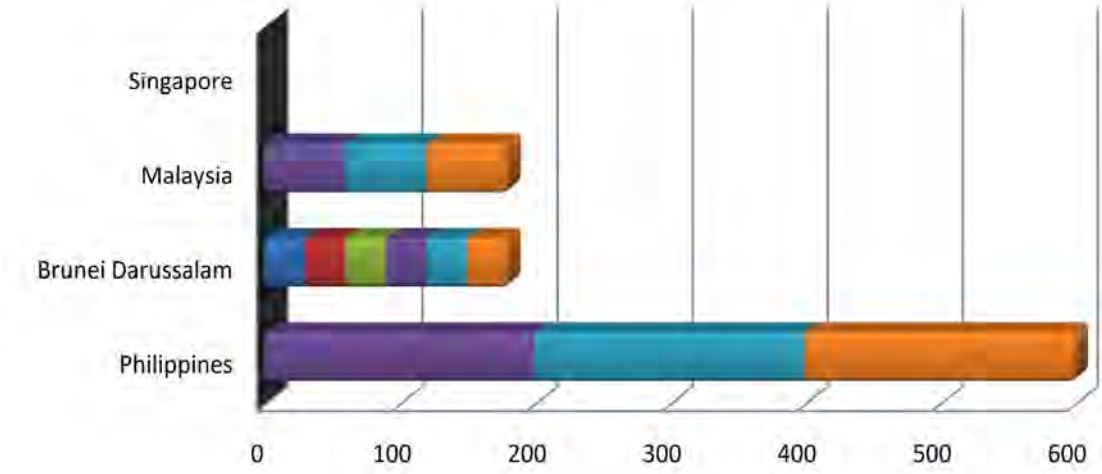


	Philippines	Brunei Darussalam	Malaysia	Singapore
Grade 1	150	120	180	300
Grade 2	150	120	180	300
Grade 3	150	120	180	300
Grade 4	100	150	180	300
Grade 5	100	150	180	300
Grade 6	100	150	180	300

Source: SEAMEO INNOTECH Survey on Basic Education Curriculum in Southeast Asia, Feb. 2011

EPP, HELE: Edukasyong Pangtahanan at Pangkabuhayan (EPP) and Home Economics and Livelihood Education (HELE) are Philippine subjects which aim to develop in learners industry and passion for work. Singapore does not have any EPP or HELE subject. The study took Brunei Darussalam's Design and Technology and Malaysia's Living Skills subject for comparison.

FIGURE 14. Time Allocation Comparison for EPP (Technology and Livelihood Education)



	Philippines	Brunei Darussalam	Malaysia	Singapore
Grade 1		30		
Grade 2		30		
Grade 3		30		
Grade 4	200	30	60	
Grade 5	200	30	60	
Grade 6	200	30	60	

Source: SEAMEO INNOTECH Survey on Basic Education Curriculum in Southeast Asia, Feb. 2011

4.2 Curriculum Design

In general, the curricula of the four countries cover the major education elements such as character development as well as knowledge and skills acquisition. The major subjects in their curricula comprise mathematics, science, languages, humanities, and art. These subjects provide elementary students a solid foundation for learning in different areas of study.

TABLE 18. Compulsory Subjects in National Elementary Education Curricula

Compulsory Subjects	Brunei Darussalam		Malaysia		Philippines		Singapore	
	LP	UP	LP	UP	LP	UP	LP	UP
English								
National Language								
Mathematics								
Science			X		O		O	
Islamic Religious Education (IRE)						X	X	X
Social Studies/ Civic Education	X							
Physical Education (PE)					i	i	X	
Health Education					i	i	O	
Values Education	O				i	i	O	
Arts and Technology	O				i	i	O	
Music	O	O			O	I		
Makabayan	X	X	X	X		X	X	X
Home Economics and Livelihood Education (HELE)		X						
Assembly	X	X			X	X		
Total No. of Stand Alone Curriculum Content	8	10	12	13	6	6	8	11
Legend	- stand-alone subject		O- integrated in other subject(s)		i-integrated together as one subject		x-none	

Source: SEAMEO INNOTECH Survey on Basic Education Curriculum in Southeast Asia, Feb. 2011

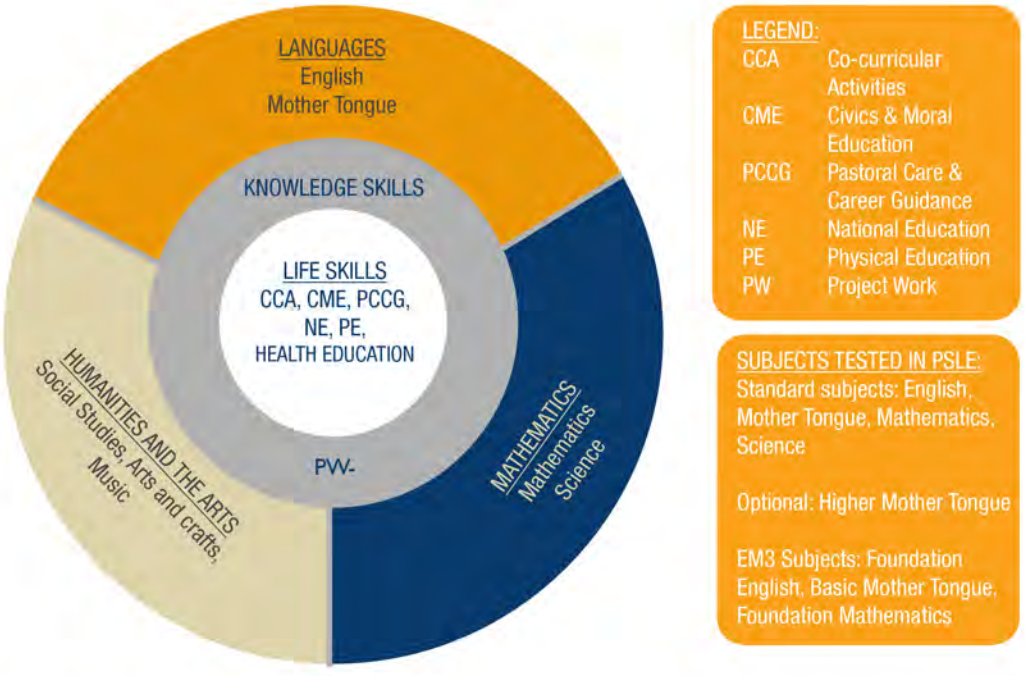
The transformation of the Malaysian elementary school curriculum aims to promote the development of human capital for the country by ensuring relevance to the current and future needs of the country. It strives to overcome problems concerning literacy, to ensure the quality of education through fun-based learning, and to make the education system less examination oriented. The transformation process involves changes in the following aspects: content, curriculum materials, pedagogy, time allocation, assessment methodologies, and school management.

The changes made aim to produce human capital who are responsible; knowledgeable; spiritually, emotionally, physically, and intellectually balanced; and globally competitive. The Preschool Standards-Based Curriculum was implemented in 2010 while the Elementary School Standards-Based Curriculum will be implemented in stages starting 2011 at year 1. The standards-based curriculum for secondary education is projected to be implemented by 2014.

4.2.1 Singapore's Elementary Education Curriculum Design

The following shows the elementary education curriculum design of Singapore.

FIGURE 15. Elementary School Curriculum Design in Singapore



- English, Mother Tongue, and Mathematics will be taught at the appropriate level according to the ability of the student
- Science is taught from P3 onwards.
- For P1-4, Health Education is not a separate subject but relevant topics are included in the learning of English.
- Project Work is conducted during curriculum time, but is not an exam subject
- From 2008 onwards, there will be no EM3 stream. Pupils will be offered Standard or Foundation subjects based on their aptitude in each subject. Foundation Science remains a non-examinable subject

Source: Ministry of Education, Singapore, April 2011

4.3 Curriculum Organization

4.3.1 Content Elements

The four countries have similar core and compulsory subjects. The core subjects include languages, science, mathematics, and social studies. The compulsory subjects, meanwhile, include music, PE, health, art, and values education. Malaysia also has elective subjects.

Brunei Darussalam, Malaysia, Singapore, and the Philippines had differences in terms of scope and sequence of core and compulsory subjects such as:

English: Brunei Darussalam, Malaysia, Singapore, and the Philippines require the study of English. English as a subject is concerned with developing competence in listening, speaking, reading, and writing. In the Philippines, more emphasis is accorded to basic skills such as listening and cognitive comprehension. Speaking includes skills in using common expressions and grammatical structures correctly in oral communication. Reading requires getting meaning from printed pages. This includes skills for vocabulary development, comprehension, literary appreciation, and studying. Writing includes writing-readiness, guided writing, functional, and creative writing skills. Learning activities develop competence in these phases of communication vary but are all meaningful and realistic.

Science and health concepts may be used as content in English, especially in grades 1 and 2, but not to the extent of neglecting English book content. In the Philippines, grade 3 is considered the threshold in reading. Thus, at the end of the third grade, every child is expected to be a proficient reader.

TABLE 19. Learning Strands in P1-P6 English

Topics/ Learning Areas	Brunei Darussalam	Malaysia	Singapore	Philippines
Listening				
Speaking				
Reading				
Writing				
Language Arts				
Language for Information				
Language for Literacy				
Language for Social Interaction				
Print Concepts				
Phonemic Awareness				
Vocabulary Development				

Topics/ Learning Areas	Brunei Darussalam	Malaysia	Singapore	Philippines
Reading Comprehension				√
Literary Appreciation				
Study Skills				
Critical Reading				
Auditory Perception & Discrimination				
Listening Skills				
Critical Listening				
Writing Readiness				
Mechanics				
Guided Writing				
Functional & Creative Writing				
Basic & Courteous Expression				
Grammar Awareness				
Improving pronunciation skills				
Speaking Skills				

Source: SEAMEO INNOTECH Survey on Basic Education Curriculum in Southeast Asia, Feb. 2011

Science: Only Brunei Darussalam offers science as a stand alone subject throughout the six years of elementary school. In the Philippines, science is taught along with health only from grade 3 onward. Singapore also offers science from Elementary 3 onward while Malaysia does so beginning grade 4. Science and technology in Malaysia focuses on the acquisition and mastery of scientific knowledge and skills needed to study and understand the world (Zamzaimitul, 2011). Challenges in the twenty-first century necessitate the teaching of science to develop scientific and technological knowledge, skills, and values. Science is offered as one of the core subjects.

TABLE 20. Science Learning Strands in P1-P6 Levels

Topics/ Learning Areas	Brunei Darussalam	Malaysia	Singapore	Philippines
Man/People				
Animals				
Plants				
Senses				
Early Physics (float & sink)				
Push and Pull				
Magnets				
Electricity				

Topics/ Learning Areas	Brunei Darussalam	Malaysia	Singapore	Philippines
Springs				
Absorption				
Soil				
Mixing substances				
Diversity of life in the universe				
Life and life processes				
Physical quantity				
Synthetics and non-synthetics				
Earth, moon and the sun				
Cycle				
Heat				
Light				
Sound				
Energy				
Solid, fluid and gas				
Acid and alkali				
Oxidation				
Natural phenomenon				
Interaction between living things				
Force and kinetics				
Food preservation				
Waste management				
Astronomy				
Variety and classification				
Personal health and environment				
System				
Materials				
Matter				
Solar system and beyond				

Source: SEAMEO INNOTECH Survey on Basic Education Curriculum in Southeast Asia, Feb. 2011

Mathematics: Brunei Darussalam, Malaysia, Singapore, and the Philippines have common learning strands in mathematics such as the study of whole numbers, addition and subtraction, basic multiplication and division, basic geometry, fractions, metric and local measurements, and the use of money as well as their applications to practical problems based on real-life activities. In the upper elementary grades, students are expected to master the four fundamental operations of whole numbers, perform operations on decimals and fractions, define what ratio and proportion are, compute for percentages, know what integers are, solve simple probability problems, know the different polygons and spatial figures, as well as do measurements and create graphs. Singapore requires more data analysis while Brunei Darussalam and Malaysia teach algebra in the elementary level.

TABLE 21. Mathematics Learning Strands in P1-P6 Levels

Topics/ Learning Areas	Brunei Darussalam	Malaysia	Singapore	Philippines
Numbers				
Whole numbers				
Rational numbers/Fraction				
Operations				
Measurement				
Geometry				
Relationships				
Algebra				
Statistics and probabilities				
Graphs				
Data analysis				

Source: SEAMEO INNOTECH Survey on Basic Education Curriculum in Southeast Asia, Feb. 2011

Makabayan: It is the laboratory of life or is an experiential learning area that comprises *sibika at kultura* (civics and culture); *heograpiya, kasaysayan at sibika* (geography, history, and civics); EPP (HE and livelihood education); *musika, sining, at edukasyon sa pagpapalakas ng katawan* (music, arts, and PE); and character education. Makabayan provides balance, as it primarily addresses societal needs. This is where the learner can apply practical knowledge and life skills and demonstrate deeper appreciation of the Filipino culture. It also covers Social Studies which is taught in all elementary years in Singapore and in the Philippines. Social Studies under the Makabayan subject focuses on civics and culture from grades 1–3 and incorporates music, art, and PE. From grades 4–6, it covers geography, history, and civics. In Malaysia, this is called local studies.

TABLE 22. Social Studies Content in P1-P6 Levels

Topics/ Learning Areas	Brunei Darussalam	Malaysia	Singapore	Philippines
Location and Physical Features				
National Unity				
Pride of the Nation				
National Loyalty				
History of the Country				
Rights, Responsibilities and Role of citizen to its Community/ Society				
Natural Territory				

Source: SEAMEO INNOTECH Survey on Basic Education Curriculum in Southeast Asia, Feb. 2011

Physical Education (PE). Only the Philippines integrates PE with other subjects. In lower Elementary grades, PE is integrated with makabayan. It is then integrated with music and art as a standalone subject in upper Elementary grades. In the three other countries, it is offered as an individual subject from years 1 to 6.

TABLE 23. Content of PE in P1-P6 Levels

Topics/ Learning Areas	Brunei Darussalam	Malaysia	Singapore	Philippines
Movements				
Educational gymnastics				
Dance and Games				
Health & fitness management				
Track & field				
Swimming				

Topics/ Learning Areas	Brunei Darussalam	Malaysia	Singapore	Philippines
Physical fitness & Health				
Physical Abilities and Skills				
Cultural and Sports Events				

Source: SEAMEO INNOTECH Survey on Basic Education Curriculum in Southeast Asia, Feb. 2011

Health: This is offered as a separate subject only in Malaysia and in Singapore. In Singapore, however, health topics are initially integrated with English from Elementary 1–4 then subsequently offered as a stand-alone subject in the upper elementary years. In the Philippines, health topics are integrated with science.

TABLE 24. Content in Health Education in P1-P6 Levels

Topics/ Learning Areas	Brunei Darussalam	Malaysia	Singapore	Philippines
Physical health/Growth				
Mental, social and emotional health				
Healthy environment				
Reproductive and social education				
Diet /Eating Right/Food				
First-aid				
Good Hygiene Habits/ Cleanliness				
Taking Care of Teeth and Gums				
Taking Care of Eyes				
Preventing Accidents/Safety/ Protecting Self				
Germs and Diseases/ Preventing infection				
Self-esteem				
Caring for Others				
Conflict with others				
Puberty/ Relationships during Puberty				
Managing Peer Influence				

Topics/ Learning Areas	Brunei Darussalam	Malaysia	Singapore	Philippines
Substances Harmful to Health				
Stress Management				
Waste Matter				
Pollution (air/water)				
Laws and Regulations				

Source: SEAMEO INNOTECH Survey on Basic Education Curriculum in Southeast Asia, Feb. 2011

Values education: This is universally taught in the four countries. In Brunei Darussalam, it is called Malay Islamic Monarchy (Melayu Islamic Beraja) and is initially integrated with IRK in lower elementary grades, then taught as a stand-alone subject in years 4–6. It is called moral education in Malaysia, character education in the Philippines, and CME in Singapore where it is integrated with mother tongue in Elementary 1–4.

Owing to their demographic composition, with a significant Islamic population, Islamic education is offered as a subject in Brunei Darussalam and in Malaysia. The subject is called IRK in Brunei Darussalam.

TABLE 25. Character and Values Education or Islamic and Moral Education in P1-P6 Levels

Topics/ Learning Areas	Brunei Darussalam	Malaysia	Singapore	Philippines
Islamic Education				
Belief /Faith in God				
Kindness				
Responsibility				
Gratitude				
Respectful				
Loving				
Righteous				
Fairness				
Bravery				
Honesty/Integrity				
Diligence				
Working together				
Moderation				
Tolerance				

Topics/ Learning Areas	Brunei Darussalam	Malaysia	Singapore	Philippines
Independence		√		
Discipline				
Human Dignity				
Love for Truth				
Critical Thinking				
Creativity				
Open Mindedness				
Concern for Others				
Respecting Human Rights				
Equality				
Appreciation of Cultural Heritage				
Being Proud of Being Filipino				
Taking Care of Oneself				
Cleanliness				
Taking Care of the Environment				
Positive Attitude Towards Work				
Being Productive				
Care				
Resilience				
Harmony				
Myself				
Family				
Peers, Neighbor and Society				
My Country and Environment				
School				

Source: SEAMEO INNOTECH Survey on Basic Education Curriculum in Southeast Asia, Feb. 2011

Art and technology: Art subjects are integrative in Brunei Darussalam and in the Philippines. Creativity and technology (lower elementary grades) in Brunei Darussalam focuses on three distinct modules—ICT, art and design, and music and drama. In upper elementary grades, this subject is called design and technology. In the Philippines, art, music, and PE are integrated with makabayan from grades 1–3 then offered together as one subject from grades 4 to 6. In Malaysia, art education is taught as a stand-alone subject throughout elementary school. The same is true for Singapore (arts and crafts).

TABLE 26. Art and Technology in P1-P6 Levels

Topics/ Learning Areas	Brunei Darussalam	Malaysia	Singapore	Philippines
Art Techniques				
Visual Inquiry				
Research * Processing				
Communication				
Fine Arts				
Design				
Digital Media				
Elements of Art				
Principles of Design				
Aesthetic Perception				
Creative Expression				
Art Heritage (Folk Arts, Ancient Arts, Ethnic Design, Art Creation (Painting and Sculpture)				
Valuing Environment				
Art Application				
Visual Art appreciation				
Draw and paint				
Craft				
Basic shapes and technology				
Basic ICT Literacy				
Knowing the computer hardware and software				
Software use and application				
Simple programming				

Topics/ Learning Areas	Brunei Darussalam	Malaysia	Singapore	Philippines
Choosing and using suitable ICT resources				
Use ICT to gather, collect, process and use information				
Use ICT to gather and share information				

Source: SEAMEO INNOTECH Survey on Basic Education Curriculum in Southeast Asia, Feb. 2011

Music: This is a stand-alone subject in all of the elementary years in Malaysia and in Singapore. In Brunei Darussalam, it is only integrated with other subjects. In the Philippines, it is integrated with makabayan in lower elementary grades and combined with art and PE (MAPEH) as a stand-alone subject in upper elementary grades.

TABLE 27. Music in P1-P6 Levels

Topics/ Learning Areas	Brunei Darussalam	Malaysia	Singapore	Philippines
Musical Experience				
Musical Creation				
Musical Appreciation				
Music Elements/Concepts				
Music Instruments				
Repertoire				

Source: SEAMEO INNOTECH Survey on Basic Education Curriculum in Southeast Asia, Feb. 2011

Home Economics (HE): This is offered as a separate subject only in Malaysia and in the Philippines (upper elementary level). In the Philippines, it is taught as HE and livelihood education (EPP). It is known as living skills in Malaysia.

Co-curriculum activities: These are explicitly included in all of the countries' national curricula. These include sports and games; religious, artistic, and cultural activities; academic and nonacademic clubs and societies, and uniformed groups.

In the lower elementary level, Singapore offers the most content for these. The country offers nine stand-alone, in-class subjects plus two out-of-class activities. In the upper elementary level, meanwhile, Malaysia prescribes the greatest amount of curriculum content for upper elementary education with 12 in-class subjects and one out-of-class activity.

Assembly: This refers to a gathering of students and school personnel for morning rituals such as flag ceremonies. In Malaysia and in Singapore, the prescribed time allotment for this is 30 minutes per week. Brunei Darussalam and the Philippines also have a similar activity but the amount of time allotted for this is not counted as part of the curriculum.

4.4 Lessons Learned from the Regional Comparison of Elementary Education Curriculum

Overall curriculum alignment refers to the "alignment between the curriculum and one or more of the following elements: state standards, standardized and/or state tests, curriculum-embedded tests, student assignments, lesson plans, textbooks, and instruction." The process prevents educators from overlapping or skipping content that is essential to meeting state and national standards. Curriculum alignment facilitates communication among educators as they plan for both horizontal and vertical alignment. This section will determine how aligned the Philippine elementary education is with regional benchmarks.

Against regional benchmarks, we derived the following insights:

1. The elementary education systems of the four countries express similar objectives. The fundamental value of elementary education is founded on literacy and preparation for the secondary level. It helps students attain cognitive, physical, social, and emotional development.

2. In general, the curricula of the four countries cover major education elements such as subject disciplines, character development, and knowledge skills. The disciplines comprise mathematics, science, languages, humanities, and art. These subjects provide elementary students the foundation for different areas of study.

3. Brunei Darussalam, Malaysia, and Singapore promote the development of knowledge skills, which involves thinking, processing, and communication skills, all of which are learned from a mix of disciplines and from interpersonal interactions. Examples of knowledge skills subjects are social studies, music, art and technology, and HE. Character development focuses on instilling sound moral values in children through daily academic interactions and co-curricular activities. Character development subjects include IRE and values education.

4. The Philippines allots more time for core and compulsory subjects. More time is allotted to mathematics, science, and languages. Makabayan has been added to the 2002 curriculum, which promotes integrated learning.

5. Elementary education ends with an end-of-cycle assessment test in Brunei Darussalam, Malaysia, and Singapore. The Philippines uses the NAT to gauge overall school performance

in achieving proficiency in core learning areas for quality assurance purposes. The NAT results do not form part of individual student performance report or used to determine eligibility for progression or graduation.

There is a need to align the elementary curriculum with the secondary education curriculum within the framework of 21st century learning skills. Both levels currently use different curriculum frameworks.

CHAPTER FIVE SECONDARY EDUCATION

Secondary education is typically designed to complete the provision of basic education, which begins from ISCED level 1. This stage can be divided into two—the lower and upper secondary levels. The lower secondary level pertains to ISCED level 2 and aims to lay the foundation for lifelong learning and human development to further educational opportunities. The programs in this level are usually more subject oriented and require more specialized teachers. Entry to this level occurs after six years of elementary education. The upper secondary level begins at the end of compulsory education. Even more specialization can be seen in this so-called ISCED level 3. The entrance age to this level is 15 or 16 years old.

This section reviews the input conditions of secondary education—aims and goals, access, institutional governance, teacher-student ratios, languages of instruction, and school calendars. It will also compare the four countries' curriculum structure (duration, time allotment, and desired learning competencies), organization (content and scope), design (framework and focus), and alignment (relevance to state standards and goals).

5.1 Aims of Secondary Education

The aims of secondary education in Brunei Darussalam, Malaysia, Singapore, and the Philippines are summarized by the following:

Brunei Darussalam: The MOE adopted the vision statement, "quality education toward a developed, peaceful, and prosperous nation," and upholds the mission of "providing holistic education to achieve the fullest potential for all." The country's lower secondary education system aims to provide general education and to hone students' skills as well as to develop their aptitudes, personalities, attitudes, values, talents, and interests while its upper secondary education system aims to strengthen these in preparation for pre-vocational or higher education and for future careers.

Malaysia: The main aim of the Malaysian secondary education system is to mold individuals to become better Malaysians with the right attitudes and to equip them with knowledge and skills relevant to the 21st century, thus making the country a developed nation by 2020. Its lower secondary education system aims to provide general education that hones students' skills, aptitudes, personalities, attitudes, values, talents, and interests. Malaysia's upper secondary education aims to strengthen these in preparation for pre-vocational or higher education and for future careers.

Philippines: The *2010 Secondary Education Curriculum* seeks to contribute, among others, to the EFA goal of providing functional literacy for all as well as to the development of 21st century core skills that learners need in order to become globally competitive. The country does not currently have an upper secondary education program.

Singapore: Secondary education aims to ensure that young people remain rooted in Singapore even if they leave to work elsewhere. Singapore's secondary education curriculum aims to develop in students a broad range of life skills; to nurture confidence in children, along with a strong sense of right and wrong, adaptability and resilience, self-awareness, discerning in judgment, independence and critical thinking, and effective communication; to make the children self-directed learners who question, reflect on, persevere in, and take responsibility for their own learning; to become active contributors who can effectively work as part of teams, be innovative, exercise initiative, take calculated risks, and excel; and to become concerned citizens who are rooted to a strong sense of civic responsibility, are informed about Singapore and the world, and take an active role in national development.

5.2 Access to Secondary Education

Secondary education is compulsory and free in Brunei Darussalam and Malaysia. Students begin secondary education at age 12 and end by age 15. In the Philippines, secondary education is not compulsory but free in public schools. The entry age for secondary students is 12 in Brunei Darussalam and in the Philippines while it is 13 in Malaysia and in Singapore.

In Singapore, although education is universal from 6–16, it is not free. Students in lower secondary education pay a minimal school fee, depending on school type. The average school charges minimal miscellaneous fee. Some autonomous schools collect school fees monthly. Independent schools charge higher fees.

Providing accessible upper secondary education is a goal of Brunei Darussalam, Malaysia, and Singapore. In Brunei Darussalam, upper secondary education is still compulsory so children can continue studying in schools of their choice. In Malaysia, upper secondary level students are streamed based on their academic abilities, talents, and interests. Academic schools offer the science, arts, and religious streams. Students who are not academically inclined can continue studying in any of the 55 technical-vocational schools in the country. Two art schools also cater to those who are inclined to take up performing arts.

5.3 Teacher-Student Ratio

The teacher-student ratio in Brunei Darussalam, Malaysia, Singapore, and the Philippines for secondary education varies. The Philippines has the most number of students per teacher.

TABLE 28. Teacher-Student Ratio in Secondary Schools

Level	Brunei Darussalam	Malaysia	Philippines	Singapore
Secondary	1:11	1:19 is the average (but in some schools, the ratio is 1:50)	1:38 is the average,(but in some cases, the ratio may be 1:60 to 70 +++)	1:20

Source: SEAMEO INNOTECH Survey on Basic Education Curriculum in Southeast Asia, Feb 2011

5.4 Medium of Instruction (MOI)

Secondary schools in Brunei Darussalam, Malaysia, Singapore, and the Philippines are commonly bilingual (English and their mother tongues). Mother tongue or the national language is offered as one subject in the four countries. Malaysia, Singapore, and Brunei Darussalam also offer Malay and mother tongues such as Chinese and Tamil. The Philippines uses English language in science, mathematics, while the Filipino language is used for teaching Social Studies, technology and livelihood education (TLE) and music, arts, physical education and health (MAPEH) at the secondary level.

5.5 Secondary Education Structure

Secondary education in Brunei Darussalam, Malaysia, and Singapore is divided into two levels—lower secondary or level 2 and upper secondary or level 3.

TABLE 29. Structure of Secondary and Postsecondary Education

<table>
<tr><th></th><th colspan="5">No. of Years</th></tr>
<tr><th></th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th></tr>
<tr><td rowspan="2">Brunei Darussalam</td><td colspan="2" rowspan="2">Year 7 and 8 (ages 12-13)</td><td rowspan="2">Assessment</td><td colspan="2">Year 9 – 11, General Education Programme,(ages 14 – 16)</td></tr>
<tr><td colspan="2">Year 9 – 11, Applied Education Programme, (ages 14 – 16)</td></tr>
<tr><td rowspan="3">Malaysia</td><td colspan="3" rowspan="3">Form 1-3 (ages 13 – 15)</td><td rowspan="3">Assessment</td><td>Form 4-5 (ages 16 – 17) Academic School Streams</td></tr>
<tr><td>Technical and Vocational School Streams</td></tr>
<tr><td>Art School</td></tr>
<tr><td>Philippines</td><td colspan="4">1st – 4th Year General High School, with some Specialized Secondary Schools (Science and Arts Schools)</td><td></td></tr>
<tr><td rowspan="4">Singapore</td><td colspan="4">4-year Special/Express Course(ages 13 – 16)</td><td>Junior College after GCE O level Examination</td></tr>
<tr><td colspan="5">4/5 – year Normal Academic Course (ages 13 – 16/17)</td></tr>
<tr><td colspan="4">4-year Normal Technical Course</td><td>NITEC (Normal ITEC)</td></tr>
<tr><td colspan="5">6/7-year Integrated Programme (includes Junior College) (ages 13 – 18/19)</td></tr>
</table>

Source: SEAMEO INNOTECH's Experts' Meeting on Curriculum in Southeast Asia, Feb 2011

5.6 Curriculum Design

The curriculum designs of Brunei Darussalam, Malaysia, Singapore, and the Philippines are basically linked to their national aims and goals of education. The objectives of the curricula are predefined and the courses are consequently classified in accordance with national education thrusts.

5.6.1 Brunei Darussalam

The lower secondary education curriculum design in Brunei Darussalam is generally broad, focusing on core subjects such as languages (English and mother tongue or the national language), mathematics, science, and humanities. Brunei Darussalam follows *SPN 21*.

FIGURE 16. SPN 21 Curriculum Structure

Source: Ministry of Education, Brunei Darussalam, Feb 2011

SPN 21 paved the way for the smooth transition from preschool to elementary and secondary education in a developmentally appropriate setting. Its design aims to provide students all-around development as individuals; opportunities to enhance individual strengths and abilities; and well-balanced education that allows students to draw on a wider range of knowledge areas and learning experiences.

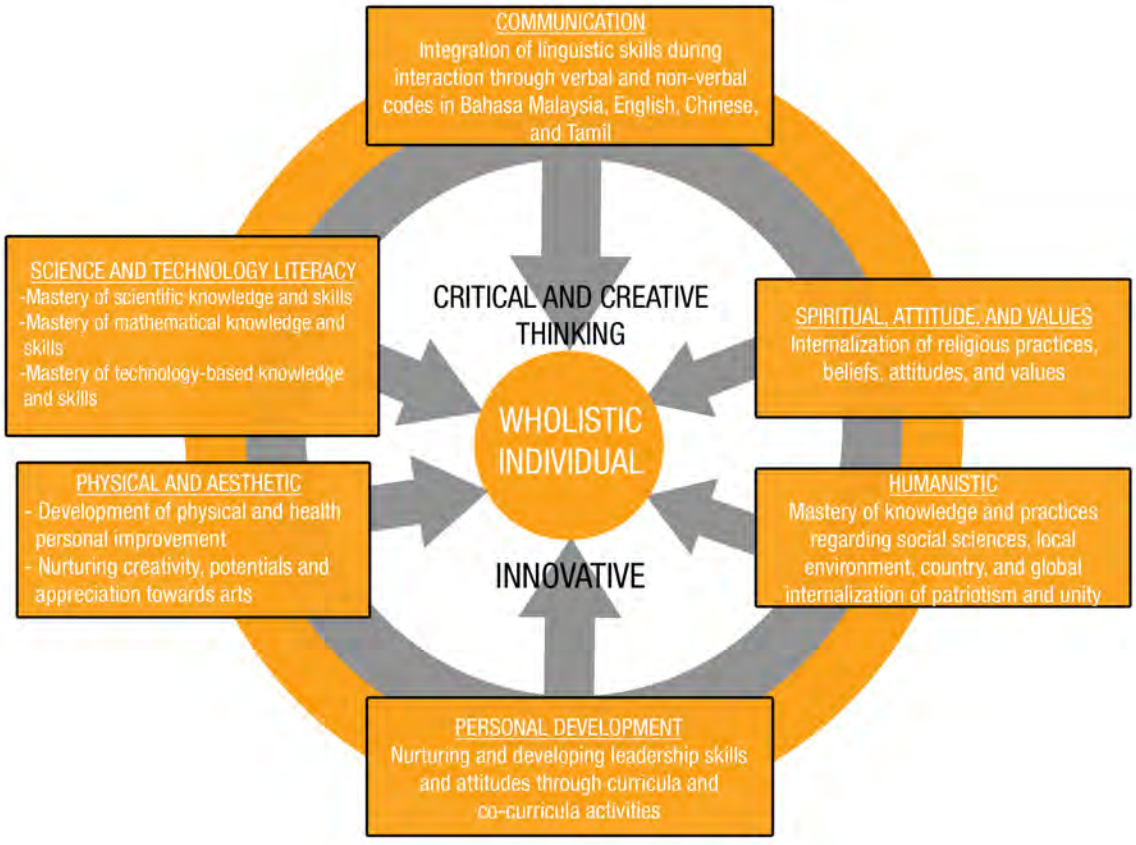
The middle circle represents the learner. This diagram was based on the premise that the individual learner is at the center of the teaching-learning process that takes place in schools. The second circle indicates that having certain knowledge and essential skills as well as the right attitudes and values are critical to holistic and effective education. The third circle shows that the key knowledge areas include language, mathematics, science, social science, humanities, arts and culture, technology, IRK, PE, health, and Malay Islamic Monarchy philosophy, which is particularly important to obtain effective and sustainable development in modern Brunei Darussalam. The fourth circle shows six elements that the educational infrastructure needs to facilitate holistic quality education in order to realize the MOE's vision.

5.6.2 Malaysia

Malaysia follows an undifferentiated lower secondary education curriculum with eight core subjects, six compulsory subjects, and one language subject. The country offers English, mother tongue, science, mathematics, social studies (but only until the lower secondary level), design and technology (but only until the lower secondary level), values education, and MAPEH as compulsory subjects.

The backward design was applied in developing the National Standards-Based Curriculum, the objectives of which are predefined. As such, the courses are consequently classified into six thrust areas that serve as the curriculum's foundation.

FIGURE 17. Malaysia's Curriculum Design



Source: Curriculum Development Division, Ministry of Education, Feb 2011

The Malaysian lower secondary education curriculum offers the following subjects:

Communication: The thrust for communication emphasizes the process of integrating linguistic skills for communication purposes, which focuses on literacy. The courses enlisted under communication are Bahasa Malaysia; English; Chinese; Tamil; and ethnic languages such as Semai,

Iban, and Kadazandusun. Elective modules are also offered for students who can master more than two languages.

Spiritual attitudes and values: This emphasizes courses that focus on religious principles, practices, beliefs, attitudes, and values.

Humanities: This emphasizes the internationalization of patriotism and fostering a spirit of unity. It also prepares individuals to understand, practice, and internalize knowledge, skills, and values related to social and environmental issues that exist within their local surroundings and worldwide.

Personal development: This aims to instill leadership qualities and to enhance self-development skills in children through co-curricular activities. Participation in these activities provides opportunities to integrate and apply knowledge, skills, and values learned in class to co-curricular activities performed outside classrooms. Participation in these activities enables students to develop their potential to become leaders.

Physical and aesthetic development: A balanced individual, as prescribed by the National Philosophy of Education, should be intellectually, spiritually, emotionally, and physically balanced. It focuses on developing a balanced individual as well as on enhancing his/her aesthetic potential. The child's physical health is developed through psychomotor, cognitive, and affective activities. The physical development and personal health of a child needs to be aligned with his/her physical needs, age, and maturity. Hence, the curriculum introduces PE and health as core subjects across levels.

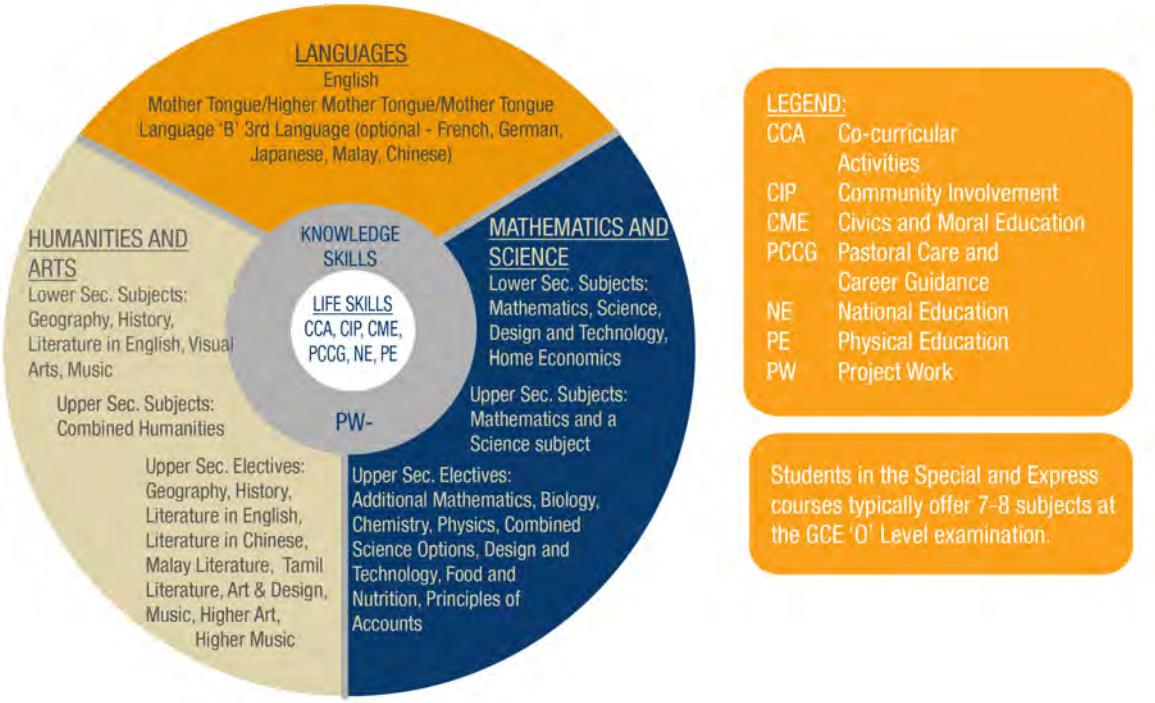
Science and technology: This emphasizes acquisition and mastery of scientific knowledge and skills needed to study and understand the world. The challenges of the twenty-first century necessitate that human capital be equipped with relevant scientific and technological knowledge, skills, and values.

5.6.3 Singapore

In Singapore, lower secondary education focuses on the importance of national identity. Students are taught to know Singapore in preschool, to love the country in the elementary level, and to learn to lead the country in the secondary level. Differentiated provision of lower secondary education is based on the students' abilities. Their paths or careers are determined in the lower secondary level with strong academic selection. Singapore offers four courses, access to which depends on how well the students perform in the Primary School Leaving Examination (PSLE). End-of-cycle assessment is provided in year 10 known as the GCE "O-Level" Examinations.

Special/express is the path the best students usually take. It is a four-year program that prepares students for the Singapore-Cambridge GCE "O-Level" Examinations.

FIGURE 18. Curriculum Design for Special/ Express Course



Source: Ministry of Education, Singapore, April 2011

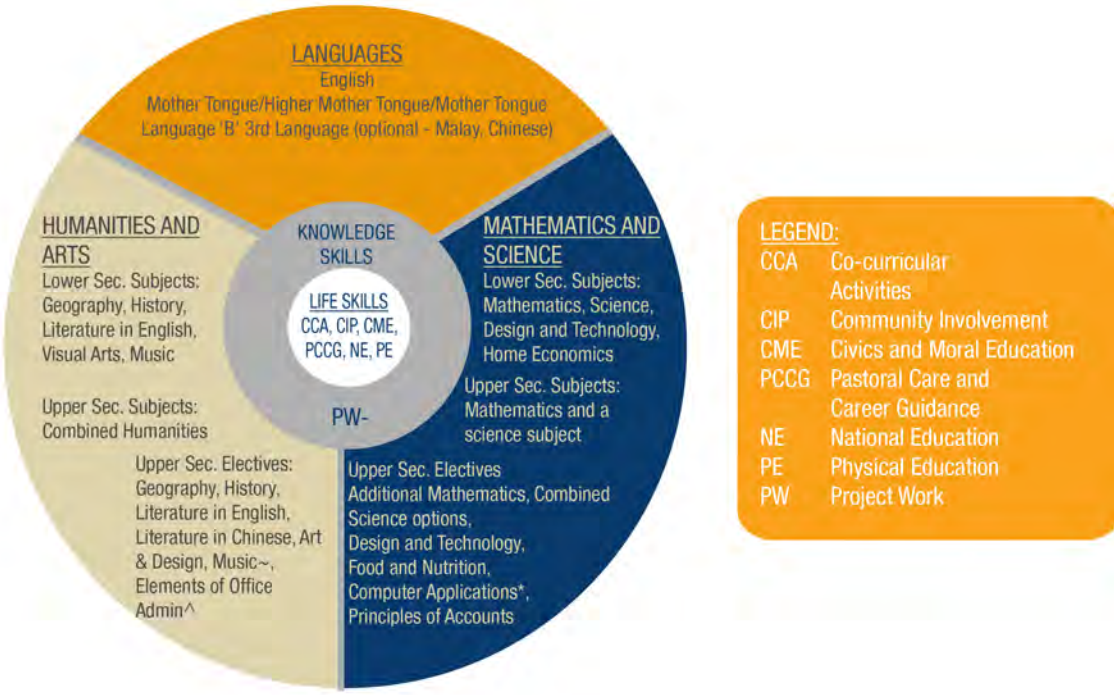
The innermost circle focuses on life skills to ensure that students acquire sound values and skills to take them through life as responsible adults and as active citizens. It comprises the non-academic curriculum.

The middle circle focuses on knowledge that will develop students' thinking, process, and communication skills. This will enable them to analyze and use information and to clearly and effectively express their thoughts and ideas. It comprises skills-based subjects.

The outermost circle covers content-based subjects (i.e., languages, humanities, art, mathematics, and science). It ensures that students have a good content foundation across different areas of study.

Normal academic is a four-year course leading to the GCE "N-Level" Examinations. Those who did well in this exam may proceed to the fifth year, which leads to the GCE "O-Level" Examinations. An option for those who do not qualify for secondary year 5 is to take up TVE and training at an Institute of Technical Education (ITE).

FIGURE 19. Normal (Academic) Course Curriculum



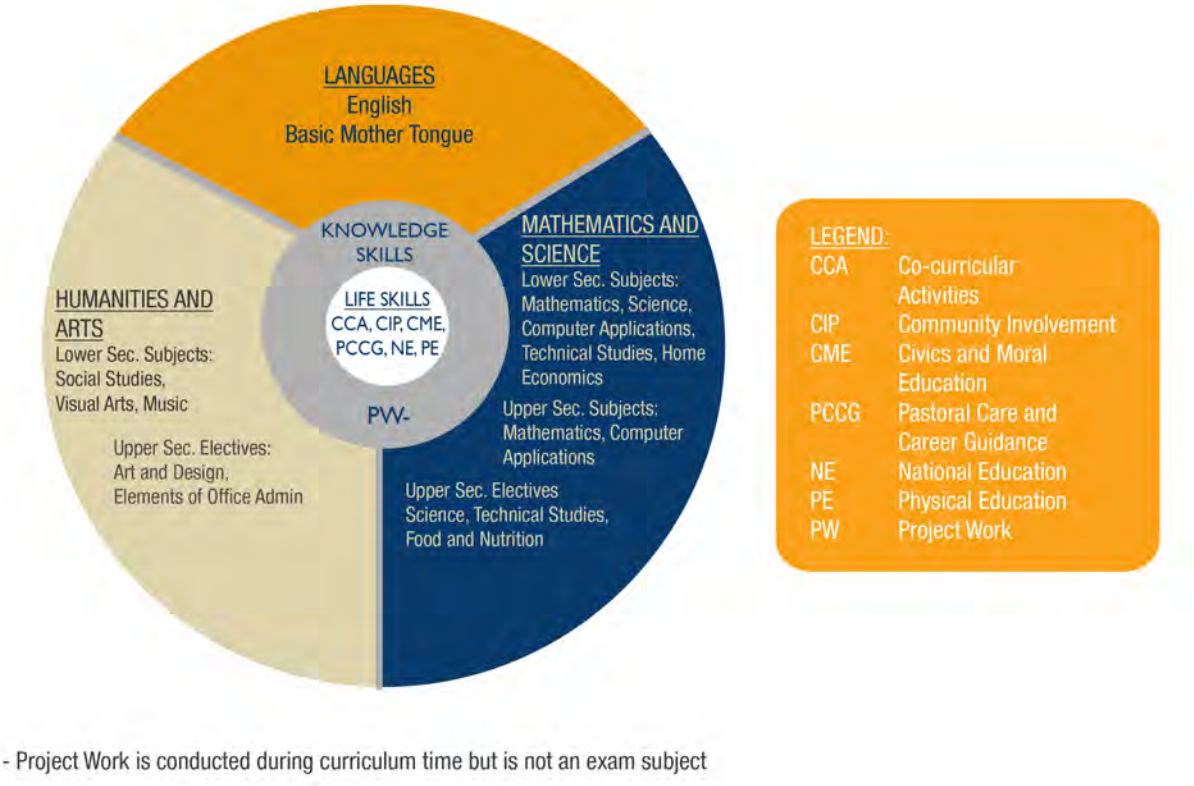
Legend: #-offered only at Sec. 4 and 5 | ^-offered only at Sec. 3 & 4 | ~Project Work is conducted but is not an exam subject

Source: Ministry of Education, Singapore, April 2011

In the normal academic course, students are offered 6–8 subjects covered by the GCE "N-Level" Examinations. They have, as compulsory subjects, English, mother tongue, and mathematics.

Normal technical is a four-year course leading to the GCE "N-Level" Examinations. This course prepares students for TVE at an ITE with subjects that have a technical or a practical emphasis. A wide range of elective subjects is available for this course, including nursing, hospitality, digital animation, and precision engineering.

FIGURE 20. Curriculum Design for Normal Technical Course Curriculum



Source: Ministry of Education Singapore, April 2011

In the normal technical course, students are offered 5–7 subjects covered by the GCE "N-Level" Examinations. This curriculum prepares them for TVE at an ITE. The curriculum is geared toward strengthening students' proficiency in English and mathematics. Students take English, mathematics, basic mother tongue, and computer applications as compulsory subjects.

Integrated Programme (IP) is a six-year thorough training program that combines the secondary and junior college levels. IP students do not take the GCE "O-Level" Examinations given at the end of secondary education. They instead prepare for the GCE "A-Level" Examinations and get diplomas or international baccalaureate degrees. IP provides integrated secondary and junior college education, after which secondary school students can proceed to junior colleges without taking the GCE "O-Level" Examinations. Schools that offer IP education optimize the amount of time freed by preparing for the GCE "O-Level" Examinations to provide greater breadth in terms of the academic and nonacademic curricula. However, these schools continue to have school-based assessment tests to measure students' progress. IP leads to the GCE "A-Level" Examinations or to other diploma courses.

5.6.4 Philippines

Effective SY 2010–2011, a new secondary education curriculum known as the *2010 Secondary Education Curriculum* was put in place in all secondary schools in the Philippines. The curriculum will fully replace the *2002 BEC* by SY 2013–2014.

The *2010 Secondary Education Curriculum* seeks to contribute, among others, to the EFA goal of functional literacy for all as well to develop twenty-first century core skills that learners need in order to become globally competitive. These skills include:

"Digital Age" literacy

- Basic scientific, mathematical, and technological literacy
- Visual and information literacy
- Cultural literacy and global awareness

Inventive thinking

- Adaptability or ability to manage complexities
- Curiosity, creativity, and risk taking
- Higher-order thinking and sound reasoning

Effective communication

- Team, collaboration, and interpersonal skills
- Personal and social responsibility
- Interactive communication skills

High productivity

- Ability to prioritize, plan, and manage for results
- Effective use of real-world tools
- Ability to create relevant high-quality products

The aforementioned skills are articulated as well in the domains of functional literacy, which consist of the following indicators:

Communication skills

- Ability to clearly express one's ideas and feelings orally and nonverbally
- Ability to listen
- Ability to read, comprehend, and respond to ideas presented
- Ability to clearly write one's ideas and feelings
- Ability to access, process, and utilize available basic and multimedia information

Critical problem-solving skills

- Numeracy skills
- Ability to make critical and informed decisions
- Innovativeness and creativity
- Scientific thinking
- Future orientation

Sustainable use of resources or productivity

- Ability to earn a living
- Sustainable use of resources (including time) and appropriate technologies
- Entrepreneurship
- Productivity

Development of self and a sense of community

- Self-development, self-awareness, self-discipline, sense of responsibility, self-worth, and self-realization
- Sense of personal and national identity
- Knowledge of one's history, pride in one's culture, and respect for that of others
- Recognition and practice of civil and political rights

Expanding one's world vision

- Knowledge, acceptance, respect, and appreciation for diversity
- Peace
- Nonviolent resolution of conflicts
- Global awareness, interdependence, and solidarity

The skills comprising functional literacy and twenty-first century core skills are embedded in the formulation of content and performance standards. The content standards specify the essential knowledge (including the most important and enduring ideas, issues, principles, and concepts from various disciplines), skills, and habits of mind that should be taught and learned.

The curriculum follows the Understanding by Design Framework (Wiggins and McTighe, 2005), a three-stage model, consisting of the following elements:

Stage 1

- Results or desired outcomes, which are generally expressed in terms of overall goals, and are specifically defined in terms of content and performance standards
- Essential (enduring) understanding, which comprise big and enduring ideas at the heart of the discipline
- Essential questions, which are open-ended, provocative questions that spark thinking and further inquiry into essential meanings and understanding

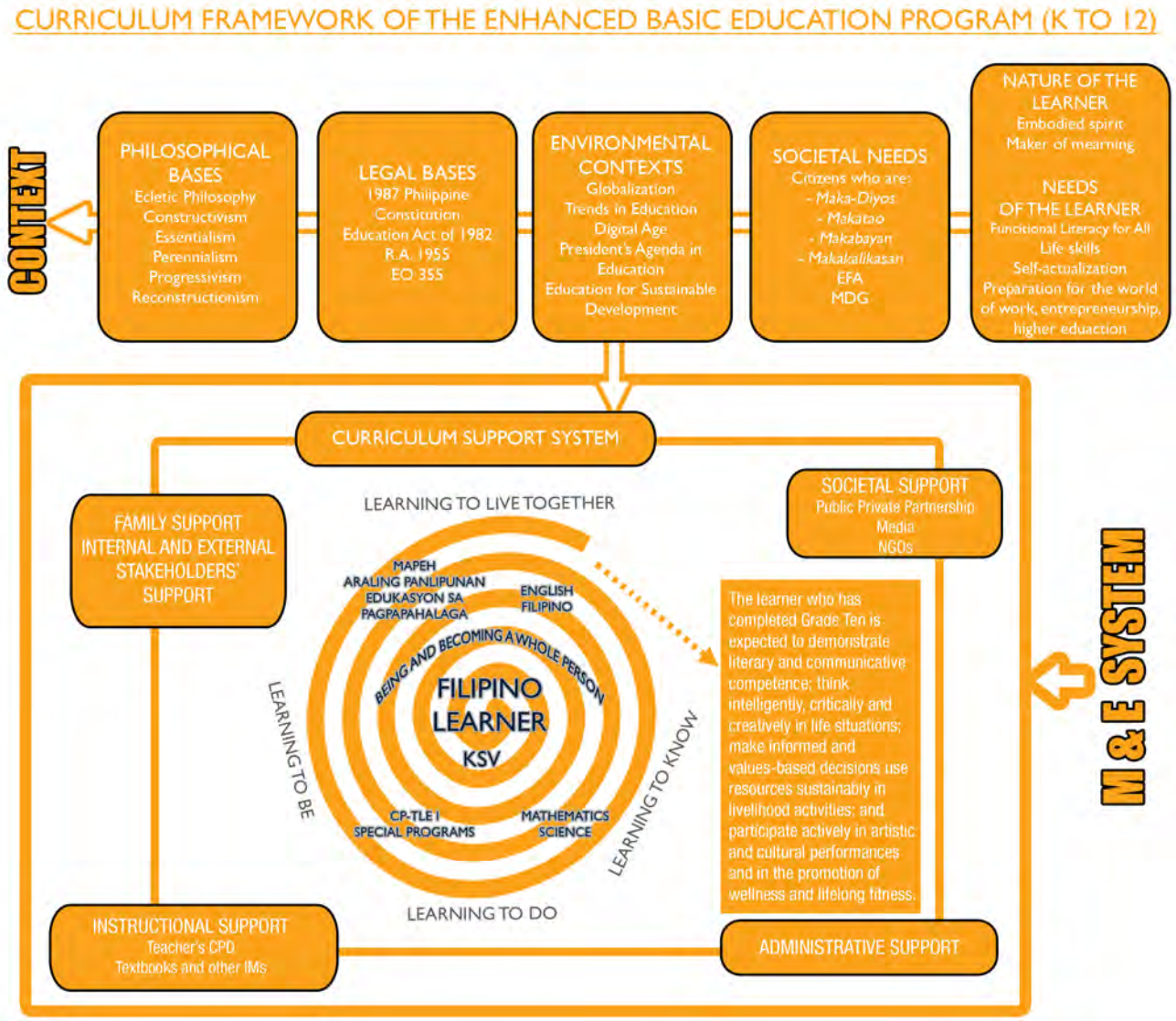
Stage 2

- Assessment, which defines acceptable evidence of student attainment of desired results; determines authentic performance tasks that the student is expected to do in order to demonstrate the desired understanding; and defines criteria against which the student's performance or products will be judged
- Products and performance, which are evidence of the student's learning and a demonstration of their conceptual understanding as well as content and skills acquisition

Stage 3

- Learning plan, which details the instructional activities that students will go through to attain the standards and resources they will need to produce products and performance
- Instructional activities, which are aligned with standards and are designed to promote attainment of desired results
- Digital and nondigital resources that students should have access to in order to understand and enable them to transfer understanding in the form of products and performance

FIGURE 21. Curriculum Design of Secondary Education in the Philippines



Source: Andrada, L. Department of Education, February 2011

The *2010 Secondary Education Curriculum* has the following features:

Lean: Focuses on essential understanding

- **Sets high expectations (standards based):** Expressed in terms of what students should know, do, understand, and transfer in life as evidence of learning
- **Rich and challenging:** Provides a personalized approach to developing multiple intelligences through the provision of special curricular programs
- Develops readiness and passion for work and lifelong learning

5.7 Curriculum Organization

5.7.1 Content in the Lower Secondary Level

Brunei Darussalam, Malaysia, Singapore, and the Philippines have common core subjects such as languages (English and mother tongue), mathematics, and science.

5.7.1.1 Brunei Darussalam

In *SPN 21*, English, Malay, mathematics, and science are regarded as core subjects. Students from years 1 to 11 are required to take all core subjects.

TABLE 30. Core Subjects in Lower Secondary Schools in Brunei Darussalam (Year 7-8)

Learning Areas	Subjects	MOI	Assessment
Islamic Religious Education	Penegtahuan Ugama Islam	Malay	Student Progress Assessment (SPE) at Year 8
Nationhood Education	Melayu Islam Beraja(MBI)	Malay	School-based Assessment
Languages	Behasa Melayu	Malay	Student Progress-Assessment (SPE) at year 8
	English language	English	
Science	Science	English	
Mathematics	Mathematics	English	

Source: Ching, Kui Khan, MOE Brunei Darussalam, Feb 2011

5.7.1.2 Malaysia

The lower secondary level covers a period of three years. See Table 32.

TABLE 31. List of Compulsory Subjects in Malaysia

Subjects	Total time per week (minutes)
Malay Language	240
English Language	200
Mathematics	200
Islamic Education*	160
Moral Education**	120
Science	200
Integrated Living Skills	160
Geography	120
History	120
Health Education	40
Physical Education	40
Art Education	80
Chinese/Tamil Language	120
Arabic Language (Communication)	240

*Legend: *For Muslim students | **For non-Muslim students*

Source: Zamzaimitul, H A, February 2011

5.7.1.4 Philippines

The country has four years of secondary education following the *2002 BEC*. See Table 33.

TABLE 32. Subject Areas in the 2010 Secondary Education Curriculum

Subjects	Time Allocation	Units
English	300 min/wk	1.5
Science	360 min/wk	1.8
Filipino	240 min/wk	1.2
Araling Panlipunan	240 min/wk	1.2
Edukasyon sa Pagpapahalaga	120min/week (Yr1-2) and 180 min/wk (Yr 3-4)	.6
Technology and Livelihood Education	240 min/wk	1.2
MAPEH	240 min/wk	1.2
Citizenship Advancement Training (CAT) Fourth Year	35 hours	.3 units

Source: Andrada, L. DepEd, February 2011

5.7.2 Elective subjects in the lower secondary level

One major feature of the secondary education curricula in the four countries under review is the inclusion of elective subjects that cater to students' varied interests and that add value to learning compulsory subjects. The Malaysian curriculum for lower secondary education contains the most number of compulsory subjects (14), followed by the Singaporean curriculum (13). Their respective curricula are more extensive in that subjects such as history, geography, English literature, and civics and citizenship are individually offered. In Brunei Darussalam and in the Philippines, these subjects are subsumed themes or topics under a single subject—social studies. In addition, whereas PE, art and technology, and music are taught as stand-alone subjects in Brunei Darussalam, Malaysia, and Singapore, these are integrated to form one subject—MAPEH—in the Philippines. This combination of learning areas made the Philippine curriculum have the least number of compulsory subjects. This posed questions like how should each MAPEH theme be taught, considering the limited amount of time apportioned to one subject against the abundance of knowledge and skills that need to be learned.

Most of the Philippine secondary schools provide general secondary education for four years. General secondary courses lead to a bachelor's degree in the tertiary level as well as to postsecondary TVE. In addition to general secondary schools, some schools are differentiated and specialized (e.g., science, art, and technical-vocational high schools), concentrating on trade, industrial, and agricultural courses.

Brunei Darussalam, Malaysia, and Singapore have lower and upper secondary education. Their curriculum features a good number of elective subjects that students can choose from, depending on their skills, talents, and abilities. About 20–27 elective courses are available in Brunei Darussalam, Malaysia, and Singapore. For technical-vocational programs, about 100 elective courses are made available to students.

In years 7 and 8 in Brunei Darussalam, students can take one elective subject each. The number of allowable elective subjects increases to two for years 9–11. In Brunei Darussalam and in Malaysia, IRK is considered a core subject.

TABLE 33. Elective Subjects Offered in Secondary Education

Subjects	Brunei Darussalam		Malaysia	Singapore
	LS	US		
	General Education	Applied Education		
Total No of Available Elective Language Subjects	**3**		**3**	**9**
Arabic				
French				
Mandarin				
Chinese				
Tamil				
Foreign language (French, German, Japanese, Arabic, Bahasa Indonesia)				
Total Number of Mathematics Elective Subjects	**1**		**1**	**1**
Additional Mathematics				
Total Number of Elective Science Subjects	**3**		**4**	**4**
Physics				
Chemistry				
Biology				
Additional Science				
Total Number of Elective Humanities and Social Science Subjects	**7**	**5**	**5**	**7**
Islamic Religious Knowledge				
Malay Literature				
Tamil Literature				☒
History				
English Literature				
Literature in Chinese				
Geography				
Principles of Accounts				
Economics				
Commercial Studies				
Development Studies				
Commerce/Accounting		☒		

Subjects	Brunei Darussalam		Malaysia	Singapore
	LS	US		
	General Education	Applied Education		
Total Number of Elective Religion Subjects			**4**	
Higher Arabic				
Tasawwur Islam				
Al-Quran dan As-Sunnah Education				
Syariah Islamiah Education				
Total Number of Elective Arts Subjects	**4**	**4**	**2**	**5**
Arts & Crafts				
Music				
Design & Technology				
Arts & Design				
Drama				
Higher Arts				
Higher Music				
Total Number of ICT subjects	**1**	**1**	**1**	
Information Technology				
Computer Studies/ICT				

Source: SEAMEO INNOTECH's Experts' Meeting on Curriculum in Southeast Asia, Feb 2011

In Brunei Darussalam, Malaysia, Singapore, and the Philippines, English, mother tongue or the national language, mathematics, science, and IRK are offered as core subjects. In Brunei Darussalam, the rationale for making English, Malay, mathematics, and science core subjects is to provide learners a strong foundation in the 3Rs using the two main languages used in Brunei Darussalam, complemented by subjects that shape their personality and socio-emotional development. Science is also regarded essential in the twenty-first century.

In the adolescent years (years 7–8), the same core subjects are complemented by a wider range of subjects to develop learners' aptitudes and interests, attitudes, and values and to consolidate their skills. As the learners progress toward adulthood, they are given more choices to develop specific interests and skill sets, to fine-tune their attitudes and values, and to prepare for higher education and specialization (years 9–11). (See complete listing of Malaysia's Elective Subjects in TVE in the Annex).

TABLE 34. Elective Subjects for Technical and Vocational Programs

Subjects	Brunei Darussalam		Malaysia	Singapore
	GEP Track	AEP Track		
Food and Nutrition				
Business Studies				
Woodwork				
Fashion and Fabrics				
Agriculture				
Physical Education				
Total number of available TVE Elective subjects	1	6	30+	1

Source: SEAMEO INNOTECH's Experts' Meeting on Curriculum in Southeast Asia, Feb 2011

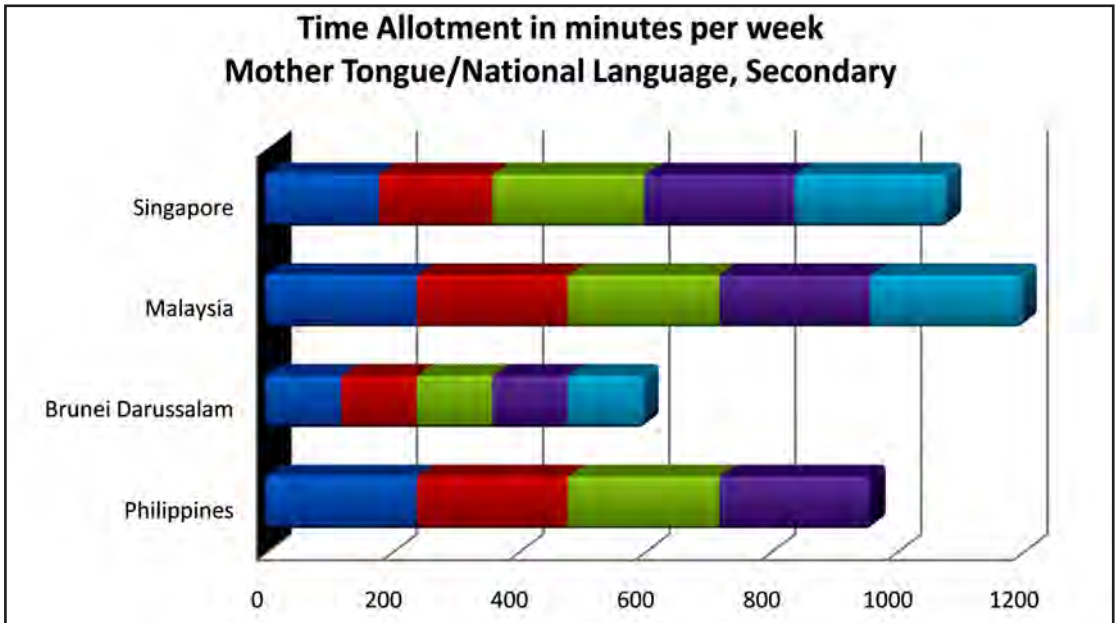
5.8 Duration or Time Allotment per Subject

5.8.1 Mother Tongue

For the mother tongue subject (national language in the Philippines), the Philippines offers Filipino at 240 minutes per week. Its total amount of learning time corresponds to almost five years of mother tongue education in Singapore and in Malaysia. Brunei Darussalam has the least amount of time allocated to learning the mother tongue.

Singapore offers a total of 1,080 minutes per week for learning the mother tongue. About 180 minutes per week are given to lower secondary students (years 1 and 2) while 240 minutes per week are required for upper secondary students. See Figure 22.

FIGURE 22. Time Allotment for Mother Tongue or the National Language



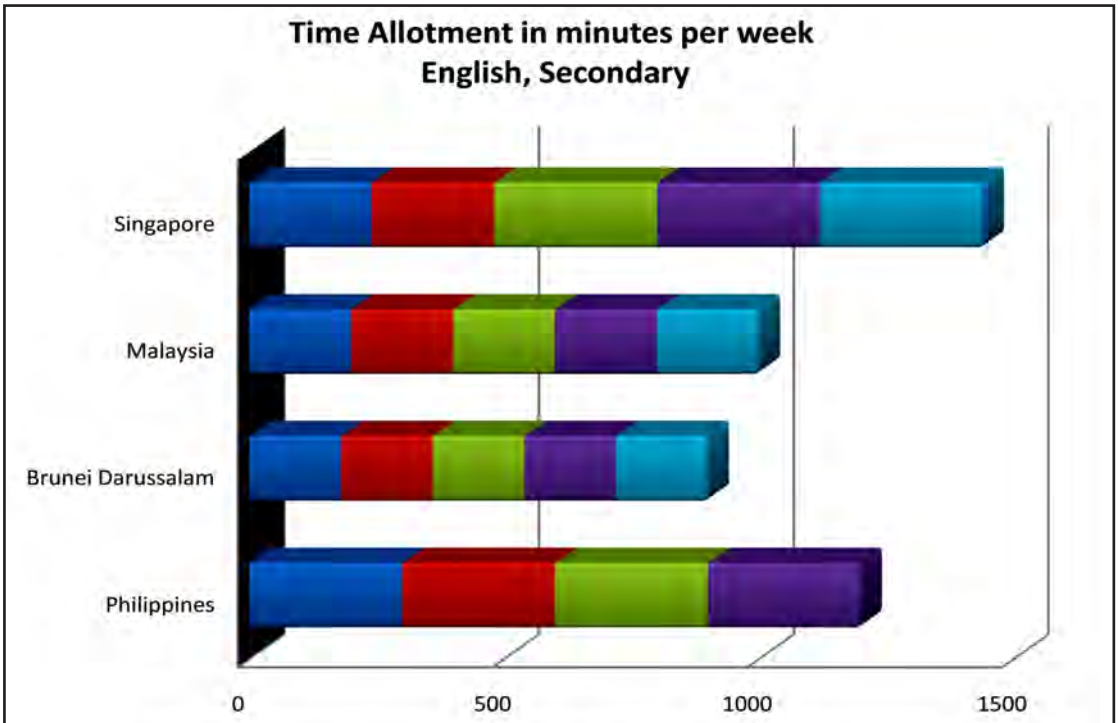
	Philippines	Brunei Darussalam	Malaysia	Singapore
1st Year	240	120	240	180
2nd Year	240	120	240	180
3rd Year	240	120	240	240
4th Year	240	120	240	240
5th Year		120	240	240

Source: SEAMEO INNOTECH's Experts' Meeting on Curriculum in Southeast Asia, Feb 2011

5.8.2 English

More time is allocated to learning English in Singapore than in its other Southeast Asian counterparts (about 2,080 minutes per week). The second country with the highest time allocation is the Philippines with 1,200 minutes per week. Brunei Darussalam offers the subject for 180 minutes per week while Malaysia does so for 1,020 minutes per week.

FIGURE 23. Time Allotment for English



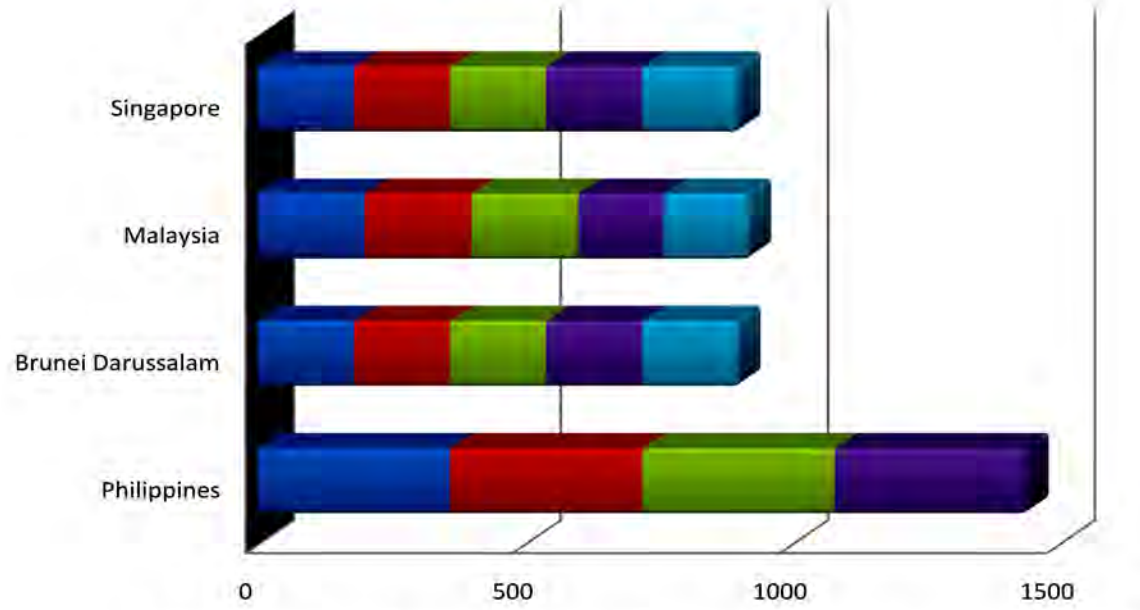
	Philippines	Brunei Darussalam	Malaysia	Singapore
1st Year	300	180	200	240
2nd Year	300	180	200	240
3rd Year	300	180	200	320
4th Year	300	180	200	320
5th Year		180	200	320

Source: SEAMEO INNOTECH's Experts' Meeting on Curriculum in Southeast Asia, Feb 2011

5.8.3 Science

The amount of time allocated to science in the Philippines is higher than in its other Southeast Asian counterparts. The Philippines spends a total of 1,440 minutes per week while its neighbors only spend 900–1,000 minutes per week. Brunei Darussalam and Singapore spend the same amount of time per week while Malaysia spends 920 minutes.

FIGURE 24. Time Allotment for Science



	Philippines	Brunei Darussalam	Malaysia	Singapore
1st Year	360	180	200	180
2nd Year	360	180	200	180
3rd Year	360	180	200	180
4th Year	360	180	160	180
5th Year		180	160	180

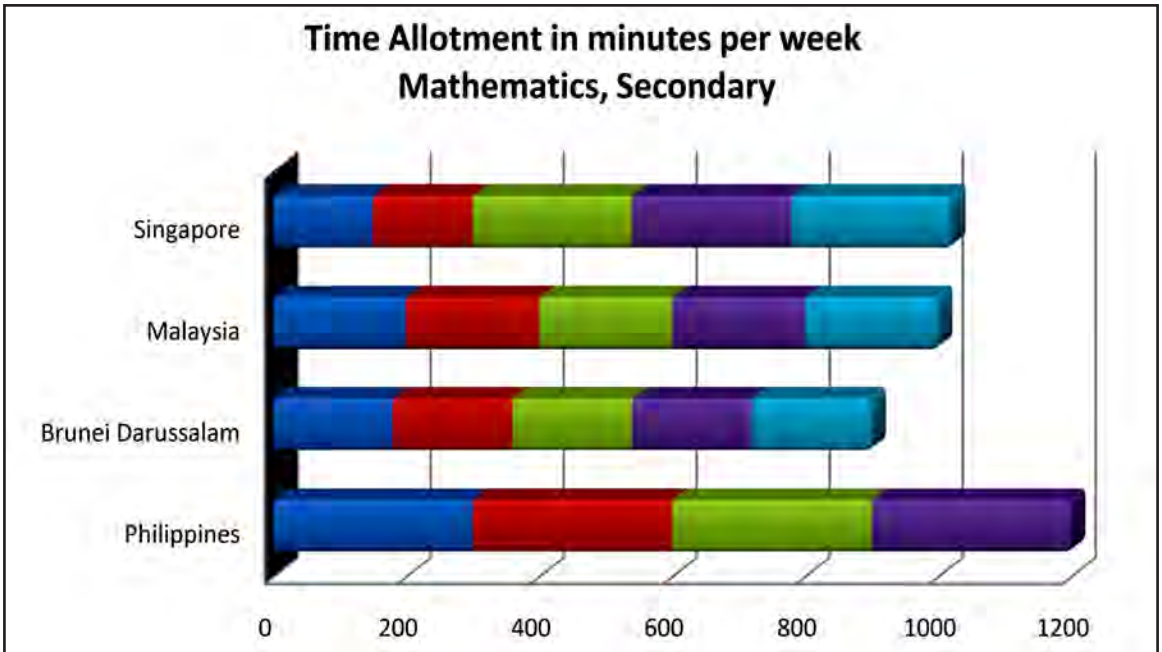
Source: SEAMEO INNOTECH's Experts' Meeting on Curriculum in Southeast Asia, Feb 2011

5.8.4 Mathematics

Brunei Darussalam, Malaysia, and Singapore spend 150–200 minutes per week on mathematics while the Philippines devotes 300 minutes. The amount of time allotted to learning mathematics in the Philippines for four years is greater than that for five years in Brunei Darussalam, Malaysia, and Singapore.

Brunei Darussalam spends a total of 900 minutes per week on mathematics while Malaysia spends 1,000 minutes per week. Singapore spends less time in the lower secondary level at 150 minutes per week. It spends 240 minutes per week on the subject in the upper secondary level.

FIGURE 25. Time Allotment for Mathematics



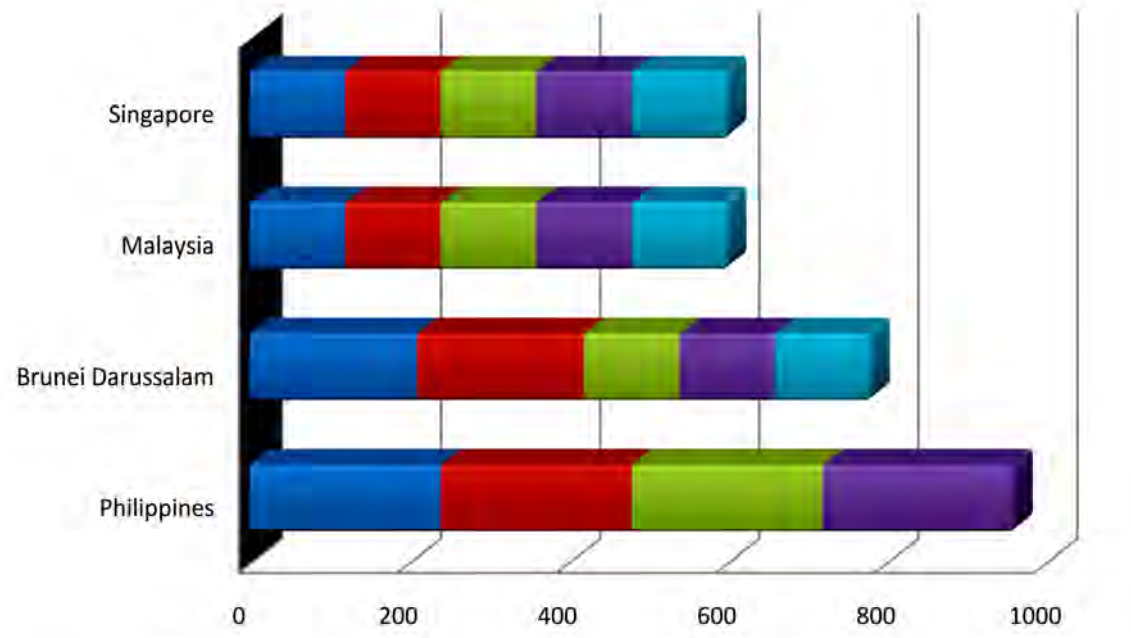
	Philippines	Brunei Darussalam	Malaysia	Singapore
1st Year	300	180	200	150
2nd Year	300	180	200	150
3rd Year	300	180	200	240
4th Year	300	180	200	240
5th Year		180	200	240

Source: SEAMEO INNOTECH's Experts' Meeting on Curriculum in Southeast Asia, Feb 2011

5.8.5 Social Studies

Brunei Darussalam, Malaysia, Singapore, and the Philippines offer social studies or civic education. The Philippines allocates more time, amounting to 1,200 minutes. Malaysia and Singapore both spend 600 minutes per week on the subject. This accounts for almost half of the time spent by the Philippines. Brunei Darussalam spends the least amount of time on social studies, amounting to 780 minutes.

FIGURE 26. Time Allotment for Social Studies



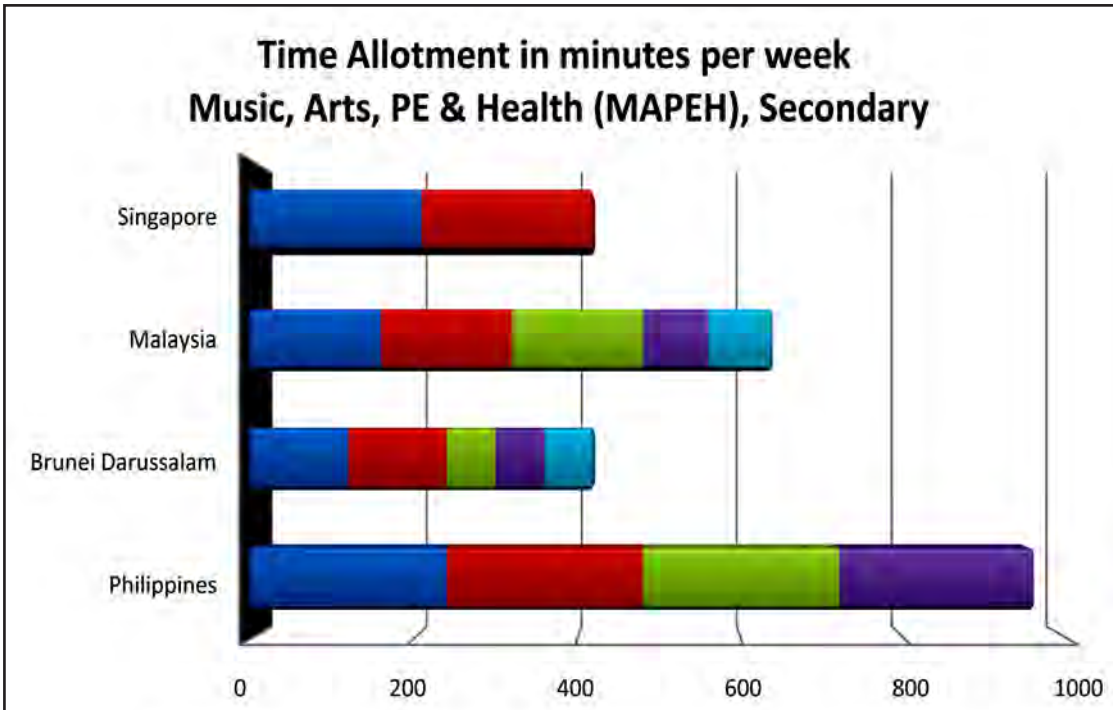
	Philippines	Brunei Darussalam	Malaysia	Singapore
1st Year	240	210	120	120
2nd Year	240	210	120	120
3rd Year	240	120	120	120
4th Year	240	120	120	120
5th Year		120	120	120

Source: SEAMEO INNOTECH's Experts' Meeting on Curriculum in Southeast Asia, Feb 2011

5.8.6 Music, Arts, Physical Education and Health (MAPEH)

The Philippines allocates more time for MAPEH than its counterparts in Southeast Asia. Singapore offers MAPEH only in the lower secondary level at 120 minutes per week while Malaysia allocates a total of 800 minutes per week and Brunei Darussalam spends 1,080 minutes.

FIGURE 27. Time Allotment for MAPEH Subject



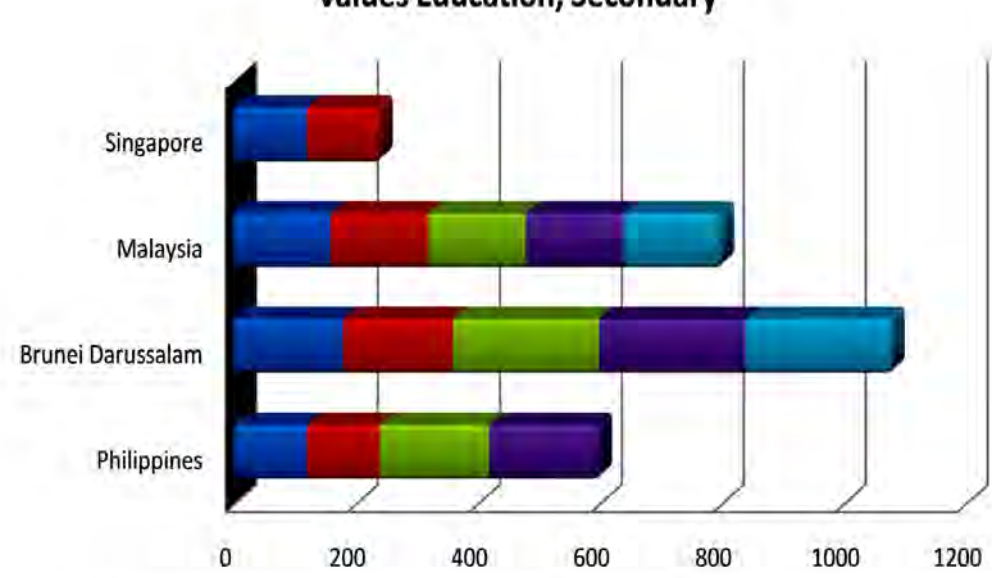
	Philippines	Brunei Darussalam	Malaysia	Singapore
1st Year	240	120	160	210
2nd Year	240	120	160	210
3rd Year	240	60	160	
4th Year	240	60	80	
5th Year		60	80	

Source: SEAMEO INNOTECH's Experts' Meeting on Curriculum in Southeast Asia, Feb 2011

5.8.7 Values Education

Brunei Darussalam allots more time to character or values education than the other countries, amounting to 180 minutes per week. This is followed by Malaysia with 160 minutes per week. Singapore offers character education for 120 minutes per week although character and values education are also integrated in almost all subjects. The Philippines allots 120 minutes per week for the subject in the first and second years and 180 minutes in the third and fourth years.

FIGURE 28. Time Allotment for Values Education



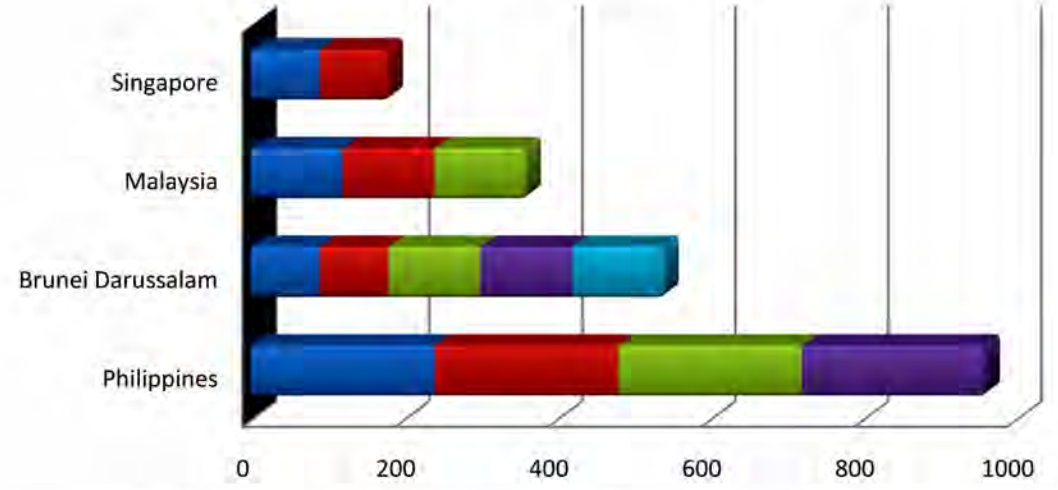
	Philippines	Brunei Darussalam	Malaysia	Singapore
1st Year	120	180	160	120
2nd Year	120	180	160	120
3rd Year	180	240	160	
4th Year	180	240	160	
5th Year		240	160	

Source: SEAMEO INNOTECH's Experts' Meeting on Curriculum in Southeast Asia, Feb 2011

5.8.8 Technology and Livelihood Education (TLE), Information and Communications Technology (ICT), or Design and Technology

The only country that allocates more time for TLE is the Philippines at 960 minutes per week. TLE is known as design and technology in Brunei Darussalam, on which schools spend a total of 540 minutes per week. Singapore offers ICT for 180 minutes per week but only in the lower secondary level.

FIGURE 29. Time Allotment for TLE, ICT or Design and Technology



	Philippines	Brunei Darussalam	Malaysia	Singapore
1st Year	240	90	120	90
2nd Year	240	90	120	90
3rd Year	240	120	120	
4th Year	240	120		
5th Year		120		

Source: SEAMEO INNOTECH's Experts' Meeting on Curriculum in Southeast Asia, Feb 2011

5.9 Learning Areas in the Secondary Education Curricula

In Brunei Darussalam, Malaysia, Singapore, and the Philippines, English, mother tongue or the national language, mathematics, science, and IRK are offered as core subjects. In Brunei Darussalam, the rationale for making English, Malay, mathematics, and science core subjects is to provide learners a strong foundation in the 3Rs using the two main languages used in Brunei Darussalam, complemented by subjects that shape their personality and socio-emotional development. Science is also regarded essential in the twenty-first century.

In the adolescent years (years 7–8), the same core subjects are complemented by a wider range of subjects to develop learners' aptitudes and interests, attitudes, and values and to consolidate their skills. As the learners progress toward adulthood, they are given more choices to develop specific interests and skill sets, to fine-tune their attitudes and values, and to prepare for higher education and specialization (years 9–11).

5.9.1 English

Based on the scope of secondary education English, the goals of teaching in Brunei Darussalam, Malaysia, Singapore, and the Philippines vary. In Brunei Darussalam, the overall goal of teaching language is for functional literacy and English is a basic tool for further learning. In Malaysia and Singapore, English is a language subject, one of the key learning areas. In the Philippines, it is a subject under communication, one of the six curriculum thrusts.

Singapore's course goal is to help pupils become independent lifelong learners, creative thinkers, and problem solvers who can effectively communicate in English. Brunei Darussalam aims to provide learners with a level of proficiency to read and understand information as well as with sufficient proficiency for creative and critical work and to continually expand knowledge in response to career demands. Malaysia aspires to integrate linguistic skills for communicative purposes and to prepare students to use the language and apply appropriate linguistic discourse to suit different contexts. The Philippines would like to develop communicative and literary competence among the Filipino youth.

Philippine English language courses focus on the skills of reading, writing, listening, and speaking, which are recycled throughout the entire scope of basic education. Although there is a provision for grammar awareness, the specific structures for study are not identified. The country provides for the development of language skills, which include reading, writing, listening, and speaking. Philippine English language teaching gives special attention to four areas—Philippine literature, Afro-Asian literature, Anglo-American literature, and world literature, as well as genres of literature study (narrative, drama, poetry, and essay). Learning activities reflect an eclectic approach to English language teaching but also strive for authenticity of teacher input and student output. Direct teaching of grammar structures is avoided. Such approach, striving for authenticity and lack of

emphasis on teaching grammar, may be evident of the dominance of the communicative approach in Philippine English language teaching. (See Annex A: Comparison of Learning Strands from Grade 1 to year 12)

TABLE 35. English Language Learning Strands in the Secondary Education Curriculum

Topics/ Learning Areas	Malaysia	Singapore	Philippines
Language for interpersonal use			
Language for informational use			
Language for aesthetic use			
Poems/poetry			
Short Stories			
Drama			
Novels	☒		
Narrative			
Essay			
Higher level literacy			
Application of reading comprehension			
Writing for purpose			
Listening comprehension			
Speak and make presentation			
Plan, draft, edit articles			
Use of information tools			
Grammar			
Conversational speech			
Philippine Literature			
Afro Asian Literature			
American Literature			
World Literature			

Source: SEAMEO INNOTECH's Experts' Meeting on Curriculum in Southeast Asia, Feb 2011

5.9.2 Science

The content of science subjects in Brunei Darussalam, Malaysia, Singapore, and the Philippines shows that the Philippines offers a discipline-based curriculum while the other countries use the spiral progressive approach. For instance, Malaysia and Singapore offer a comprehensive range of process skills, especially HOTS using the spiral approach. Science 1 is integrated science, science 2 is biology, science 3 is chemistry, and science 4 is physics. Such is not the approach in the three countries, which offer integrated science courses in the lower secondary level. Higher or additional sciences such as chemistry and physics may be taken as electives in the upper secondary level. (See Annex A: Comparison of Learning Strands from Grade 1 to Year 11)

TABLE 36. Science Learning Strands in the Secondary Education Curriculum

Topics/ Learning Areas	Brunei Darussalam	Malaysia	Singapore	Philippines
Abuses of life processes				
Acid/alkalis & salts				
Acids, Bases and Neutralisation				
Acoustics				
Animal nutrition				
Astronomy and Space Exploration				
Atmosphere & Environment				
Atomic structure and Models				
Atoms & radio activity				
Body Coordination				
Carbon Compounds				
Cell & Cell structure				
Cell structure and organization				
Chemical Bonding				
Chemical changes				
Chemical Formulae				
Chemical Reactions				
Chemicals/Synthetic Materials in Industry				
Classification				
Current electricity				
Diversity/Balance of Nature				
Electromagnetism				
Electronics and ICT				
Energy & energy sources				
Energy in Life				
Energy Transfer				
Energy, work & power				
Evolution				
Experimental chemistry				
Forces				
Forces & motion				
Gases/Air around us				
Genetic Continuity of Life				
Heat				
Heredity and variation				
Humans as Stewards of Finite Earth				☒

Topics/ Learning Areas	Brunei Darussalam	Malaysia	Singapore	Philippines
Interactions (force and pressure)				
Kinetic particles theory				
Laboratory safety				
Light Color and Sight				
Magnetism				
Magnetism & electric current				
Management and Continuity of life				
Matter				
Measurement/length/volume/ time/density/				
Microorganism and their effects				
Mixtures				
Models and Systems				
Moving charges				
Newtonian Mechanics				
Nuclear energy				
Nutrition and Food Production/ Technology				
Optics				
Organ System				
Organic chemistry				
Organisms & the environment				
Periodicity of Elements				
Plant nutrition				
Plate Tectonics				
Preservation and Conservation of Environment				
Pressure & gases				
Process skill/ scientific investigation/method				
Redox				
Reproduction in Humans				
Reproduction in plants				
Resources on Earth				
Salts				
Science and Technology				
Stoichiometry and moles concept				
Sun-Moon-Earth System				

Topics/ Learning Areas	Brunei Darussalam	Malaysia	Singapore	Philippines
Technological and Industrial Development in Society				
Thermal energy & matter				
Thermodynamics				
Transport system in human beings				
Types of common chemical reactions				
Water: e.g. state of water/ separation technique				
Waves & their uses				

Source: SEAMEO INNOTECH's Experts' Meeting on Curriculum in Southeast Asia, Feb 2011

5.9.3 Mathematics

Mathematics education in the secondary education level is discipline-based. Mathematics Year 1 focuses on real number system, measurements, scientific notation and algebraic expressions. Benchmarked countries like Brunei Darussalam, Malaysia and Singapore offer spiral progressive programs which offer numbers and algebra, geometry and measurement, statistics and probability from secondary year 1 to year 6 (See Annex A: Comparison of Learning Strands from Grade 1 to Year 11).

TABLE 37. Mathematics Learning Strands in the Secondary Education Curriculum

Topics/ Learning Areas	Brunei Darussalam	Malaysia	Singapore	Philippines
Algebra				
Algebraic Expressions				
Algebraic Formulae				
Algebraic Notations				
Angles of Elevation and Depression				
Approximation and Estimation				
Basic Measurements				
Bearing				
Circles				
Circular Functions				
Counting Techniques and Probability				
Decimals	☒			

Topics/ Learning Areas	Brunei Darussalam	Malaysia	Singapore	Philippines
Equations involving Rational Expressions				
Exponential and Logarithmic Functions				
Expressions with Rational Exponents				
Factors and Multiples				
First Degree Equations & Inequalities in One Variables				
Fractions				
Geometric Relations				
Geometrical Constructions				
Geometry				
Geometry of Shape and Size				
Gradient and Area Under a Graph				
Graphs of Functions				
Index Notation				
Indices				
Inequalities in a Triangle				
Integers				
Linear Equation and Inequalities in Two Variables				
Linear Equations				
Linear Functions				
Linear Inequalities				
Lines and Angles				
Lines and Planes in 3-Dimensions				
Loci In Two Dimensions				
Mathematical Reasoning				
Matrices				
Measurement				
Measures and Money				
Measures of Central Tendency and Variability				
Number Bases				
Number Patterns and Sequences				
Numbers				
Percentage				
Perimeter and Area				

Topics/ Learning Areas	Brunei Darussalam	Malaysia	Singapore	Philippines
Perpendicular Lines and Parallel Lines				
Plans And Elevations				
Polygons				
Polynomial Functions				
Prime Factorization				
Prime Numbers				
Probability				
Pythagoras' Theorem				
Quadratic Expressions and Equations				
Quadratic Functions				
Quadrilaterals				
Radical Expressions and Equations Variations				
Ratio, Rate and Proportion				
Rational Algebraic Expressions				
Real Numbers				
Relations and Functions				
Roots				
Scale Drawings				
Scientific Notation				
Sequences and Series				
Sets				
Similarity				
Solid Geometry				
Special Products and Factors				
Squares, Square Roots, Cubes And Cube				
Standard Form				
Statistics				
Straight Line				
Systems of Linear Equations and Inequalities in Two Variables				
Transformations				
Triangle Congruence				

Topics/ Learning Areas	Brunei Darussalam	Malaysia	Singapore	Philippines
Trigonometric Identities and Equations				
Trigonometry				
Variations				
Whole Numbers				
Writing Proofs				

Source: SEAMEO INNOTECH's Experts' Meeting on Curriculum in Southeast Asia, Feb 2011

5.9.4 Social Studies

Social Studies subjects in the four countries differ by content. The Philippines offers a discipline-based approach in teaching Social Studies. Secondary year 1 covers Philippine History and Government; year II offers History of Asian Nations; secondary year 3 covers World History and secondary year 4 covers Economics. Singapore focuses on Singapore's history, growth and environment. Malaysia offers geography from secondary year 1 to 2 as well as Civics and Citizenship Education. Brunei Darussalam does not have Social Studies as a separate subject. (See Annex A: Comparison of Learning Strands from Grade 1 to Year 11).

TABLE 38. Social Studies Learning Strands in the Secondary Education Curriculum

Topics/ Learning Areas	Brunei Darussalam	Malaysia	Singapore	Philippines
Early civilization of the nation				
Foundation of present government/journey to nationhood				
Prosperity and wealth of our country as reasons for foreign powers to invade				
Local resistance				
The fight for Independence				
The creation of a confederate state				
Islamic civilization and its development				
The development in Europe and its implications towards the nation's economy				

Topics/ Learning Areas	Brunei Darussalam	Malaysia	Singapore	Philippines
The emergence and development of nationalism until WWII				
Civics and Citizenship Education				
Geography				
Asian History				
World History				
Economics				
Local Studies				
Nation and character building towards the emergence of a sovereign state				
Cooperation with international society				
Skills in Geography (Location, Direction, Scale and distance, Graph and Map)				
Landscapes and their potentials				
Influence of weather and climate				
Dynamics of population,				
Settlements and their development				
Natural vegetation and wild animals				
Transportation and network				
Resources and economic activities				
Home and its surrounding				
School and its surroundings				
Areas between the school and home				
Growth of Nation (population, jobs, housing, education)				
Governing the Nation (What makes a good government)				
Living in Peace and harmony (multi-racial nation and defending our nation)				
Managing our Environment (Caring for our environment)				
Looking Ahead (Staying competitive in the 21st century				

Topics/ Learning Areas	Brunei Darussalam	Malaysia	Singapore	Philippines
Asian civilization				
World civilization				
Development of national identity				
Development of Asian identity				
Development of global identity				
Asian Transformation				
Development of Transformative Thinking				
Government				
Constitution				
Citizenship				
Asian government, culture, and society				
World Unity				
Globalization				
Problems of insufficiency				
Economic governance				
Livelihood development				
Livelihood issues				

Source: SEAMEO INNOTECH's Experts' Meeting on Curriculum in Southeast Asia, Feb 2011

5.9.5 Values Education

Values education in the benchmarked countries are under Civic Education. Such subject in Malaysia inculcates common values such as Love for oneself, love for the family, living together in school and society, knowing ones's culture, and facing challenges. Singapore in its Civic Education course inculcates core values such as respect, responsibility, integrity, care, resilience, and harmony from secondary year 1 to 4. Brunei Darussalam offers Islamic Religious Knowledge and Malay Islamic Monarchy. (See Annex A: Comparison of Learning Strands from Grade 1 to Year 11).

TABLE 39. Values Education Learning Strands in the Secondary Education Curriculum

	Brunei Darussalam	Malaysia	Singapore	Philippines
Care for members of society and contribute towards building society				
Democracy				
Environment values				
Family solidarity				
Family values				
Harmony as a nation				
Human rights				
Integrity				
Islam as a way of life				
Islam Knowledge and understanding				
Islamic attitudes and behaviors				
Islamic Civilization				
Love of religion, race monarchy and country				
National development				
Patriotism				
Personal responsibility				
Preference for the good/virtue				
Resilience				
Respect				
Responsibility				
Self-development				
Virtues and Moral Values through national philosophy				

Source: SEAMEO INNOTECH's Experts' Meeting on Curriculum in Southeast Asia, Feb 2011

5.9.6 Art in Secondary Level

Art Education at the secondary level covers visual arts, art forms, and arts appreciation in Malaysia and Singapore. The subject uses spiral progressive approach while the Philippines teaches arts using a historical approach. Philippine Secondary Arts 1 covers Philippine folk songs and Arts, Secondary Arts 2 covers Music and Arts in Southeast Asia. Philippine Secondary Arts year 3 teaches Renaissance, Classical and Arts in the Romantic Period while Arts in Year 4 covers Music and Arts in the 21st century. (See Annex A: Comparison of Learning Strands from Grade 1 to Year 11).

TABLE 40. Arts Learning Strands in the Secondary Education Curriculum

Topics/ Learning Areas	Malaysia	Singapore	Philippines
Art Techniques			
Visual Inquiry			
Research Processing			
Communication			
Fine Arts			
Design			
Digital Media			
Elements of Art			
Principles of Design			
Creation of visual art			
History and Visual Arts appreciation			
Philippine folk arts			
Folk Arts of Asia and Africa			
Folk Arts of Europe, Australia and America			
Dance Drama on Myths and Legend			
Arts of Southeast Asia			
Arts of East Asia			
Arts of Central and South Asia			
Arts of the Renaissance and Baroque			
Arts of the Classical and Neo Classical period			
Arts of the Romantic period			
Arts of the 20th century			
Arts of the 21st Century			
Philippine 20th and 21st Arts			
Multimedia Theater			

Source: SEAMEO INNOTECH's Experts' Meeting on Curriculum in Southeast Asia, Feb 2011

5.9.7 Music in Secondary Level

Music Education in the secondary level in the Philippines uses a discipline-based approach with strong focus on history. Malaysia and Singapore's music courses from secondary 1 to 4 cover Aesthetic appreciation, musical experience, creative expressions, repertoire and ensembles through a spiral progressive approach. Brunei Darussalam gives more time for religious study. Secondary Music 1 in the Philippines covers lessons on Philippine folk songs and arts, folk songs in Europe, Australia and America and dance drama and myths in the world. Secondary Music year 2 in the Philippines covers music in Southeast Asia and East Asia, Central and South Asia. Its secondary year III covers classes on music in the Renaissance period, Baroque, Classical and Neo-classical Period as well as romantic period while Music Arts Year 4 teaches Arts for the 21st century and music and arts Multimedia Theater. (See Annex A: Comparison of Learning Strands from Grade 1 to Year 11).

TABLE 41. Music Learning Strands in the Secondary Education Curriculum

Topics/ Learning Areas	Brunei Darussalam	Malaysia	Singapore	Philippines
Aesthetic perception				
Musical concept				
Convention of music writing				
Musical experience				
Singing skills				
Musical instruments skills (solo and ensembles)				
Traditional music ensembles experience				
Presentation skills				
Creative expression				
Invention				
Aesthetic appreciation				
Appreciation of various forms of music				
Documentation and project				
Advertisements, MTV, films and documentaries				
Basic chords (e.g. I, IV,V, C, G)				
Basic Harmony (I, II, IV,V,VI)				
Chamber music				
Compound time				
Instrumental Arrangements				
Jazz music				
Mixed ensembles				
Music produced by electronic means				
NE Songs (At least 3 core songs and selected supplementary songs)				
Orchestral Music				
Songs with multiple parts				
Philippine folk songs				
Folk songs of Asia and Africa				
Folk songs of Europe, Australia and America				
Dance Drama on Myths and Legend				
Music of Southeast Asia				
Music of East Asia				
Music of Central and South Asia				

Topics/ Learning Areas	Brunei Darussalam	Malaysia	Singapore	Philippines
Music Theaters of Asia				
Music of the Renaissance and Baroque				
Music of the Classical and Neo Classical period				
Music of the Romantic period				
Musical Plan				
Music of the 20th century				
Music of the 21st Century				
Philippine 20th and 21st Music				
Multimedia Theater				

Source: SEAMEO INNOTECH's Experts' Meeting on Curriculum in Southeast Asia, Feb 2011

5.9.8 Health in Secondary Level

Health education in Brunei Darussalam is integrated in its science subjects. Singapore also does not have a distinct health subject. Malaysia offers secondary health year 1 to 4 with lessons on self and family health, health lifestyle and cleanliness and safe environment in a spiral and progressive approach. The Philippine Health in secondary year 1 offers physical and health fitness, nutrition, personal safety. Its health in secondary year 2 covers on reproductive health, family life, responsible parenthood, and substance use and abuse. Secondary health in year 3 offers lessons on community health and fitness while secondary health year 4 covers lessons on national and global health and fitness. (See Annex A: Comparison of Learning Strands from Grade 1 to Year 11).

TABLE 42. Health Education Learning Strands in the Secondary Education Curriculum

Topics/ Learning Areas	Brunei Darussalam	Malaysia	Singapore	Philippines
Growth and Development				
Personal Health				
Nutrition				
Personal Safety (Unintentional Injuries)				
Reproductive Health				
Family Life				
Responsible Parenthood				
Substance Use and Abuse				
Environmental Health				

Topics/ Learning Areas	Brunei Darussalam	Malaysia	Singapore	Philippines
Communicable Diseases Prevention and Control				
Consumer Health Education				
Safety Education (intentional injuries)				
Population Education				
Interpersonal Skills				
Self and family health				
Healthy lifestyle				
Cleanliness and safe environment				

Source: SEAMEO INNOTECH's Experts' Meeting on Curriculum in Southeast Asia, Feb 2011

5.9.9 PE in Secondary Level

Physical education is offered in Malaysia, Philippines and Singapore. Malaysia offers same content from secondary year 1 to 5 as fitness, skills, and sports. Singapore teaches learning strands in spiral progressive approach covering same topics from year 1 to 4 on educational gymnastics and dance, games, health and fitness management, track and field, and swimming. In the Philippines, PE 1 teaches folk dances in the Philippines; family health and fitness and Philippine team sports in year 2; folk dances in Asia, Europe, North and South America in year 3, and national and global health fitness in year 4. Year 4 also teaches social dances and sports leadership. (See Annex A: Comparison of Learning Strands from Grade 1 to year 11).

TABLE 43. Physical Education Learning Strands in the Secondary Education Curriculum

Topics/ Learning Areas	Brunei Darussalam	Malaysia	Singapore	Philippines
Educational Gymnastics				
Dance				
Games (Territorial, Net/Wall, Striking & Fielding)				
Health and Fitness Management				
Track and Field				
Swimming				
Skills				
Sports				
Individual Sports				

Topics/ Learning Areas	Brunei Darussalam	Malaysia	Singapore	Philippines
Dual Sports				
Philippine Folk Dances (Local Indigenous)				
Health-Related Fitness				
Team Sports				
Philippine Folk Dances (Regional and National)				
Skills-Related Fitness				
Recreational Indoor Games				
Recreational Outdoor Games				
International Folk Dances (Asia, Europe, North and South America, Africa)				
Lifelong Fitness				
Recreational Leadership				
Sports Leadership				
Social Dances				

Source: SEAMEO INNOTECH's Experts' Meeting on Curriculum in Southeast Asia, Feb 2011

5.9.10 ICT in Secondary Level

ICT in the Philippines is integrated in the TLE subject. Brunei Darussalam, Malaysia and Singapore offer a comprehensive ICT subject. Secondary year 1 in Brunei Darussalam offers an introductory course in ICT with lessons on basic principles in computer and computer system. Singapore offers computer systems, computer operations, computer software, and computers in everyday life from secondary year 1 to 4 in a spiral progressive approach. (See Annex A: Comparison of Learning Strands from Grade 1 to year 11).

TABLE 44. ICT Learning Strands in the Secondary Education Curriculum

Topics/ Learning Areas	Brunei Darussalam	Malaysia	Singapore	Philippines
Application/type of software				
Automation information				
Basic principles of computer				
Care of computer				
Changes in life styles				
Changing work pattern/ lifestyles				

Topics/ Learning Areas	Brunei Darussalam	Malaysia	Singapore	Philippines
Commercial & general data processing				
Computer at home				
Computer control				
Computer Crime/ viruses	☒			
Computer Lab Personal safety rules				
Computer Networks And Communications				
Computer operations				
Computer software				
Computer Systems				
Computers in everyday life (internet etc)				
Consequences of system failure				
Copyright				
Data & computer misuse				
Data logging				
Data privacy/security				
Data protection Act				
Effect on employment				
Effect on Environment				
Environment issues				
Expert system				
Formula/functions/charts/ preview/printing				
Graphics				
Health & safety				
Industrial technical & scientific uses				
Information and Communication Technology, and Society				
Information System				
Internet/ Email				
Introduction to computer				
Memory capacity/CPU/types of computer/				
Moral & social issues				
Movie maker				

Topics/ Learning Areas	Brunei Darussalam	Malaysia	Singapore	Philippines
MS paint/publisher/CAD Software				
Multimedia				
New product				
Office automation				
Operating system				
Output/storage device				
Process, Production and Delivery of ICT product				
Programming				
Robotic/computer aided manufacturing				
Spreadsheet: Excel/				
The computer system/electrical connects/input/				
Trouble shooting				
Video conference				
Window basic/ Mac finder/file management/				
Word processing/ create tables/ network/				

Source: SEAMEO INNOTECH's Experts' Meeting on Curriculum in Southeast Asia, Feb 2011

5.10 Compulsory Subjects in the Secondary Level

Only the Philippine curriculum combines PE with other subjects in MAPEH. In the other three countries, PE is considered a stand-alone subject.

Health is included in MAPEH in the Philippines but is a required stand-alone subject in Malaysia.

Attesting to the appreciation of moral values, the curricula of Brunei Darussalam, Malaysia, and the Philippines require values education as a stand-alone subject throughout secondary school. In Singapore, this is required only in years 7 and 8.

Arts and technology is offered as a required stand-alone subject known as business and technology in lower secondary schools in Brunei Darussalam. This integrates four modules—design and technology, HE, and agriculture; ICT; commercial studies; and music and art. It becomes an elective subject in the upper secondary years. Art is also part of an integrated subject in the Philippines known as MAPEH.

TABLE 45. Compulsory Subjects in Brunei Darussalam, Malaysia Singapore, and the Philippines

	Brunei Darussalam		Malaysia		Philippines	Singapore	
	LS	US	LS	US		LS	US
Social Studies							
History							
Civics and Citizenship							
Geography							
Literature in English							
Physical Education							
Health Education							
Values Education							
Arts and Technology							
Design and Technology							
Music							
Home Economics/ Technology and Livelihood Education							

Source: SEAMEO INNOTECH's Experts' Meeting on Curriculum in Southeast Asia, Feb 2011

- Design and technology is offered as a stand-alone subject only in Singapore. It is required in lower secondary years and is offered as an elective subject in upper secondary years. It is differentiated from art and HE and focuses on design appreciation, creation, and application in society.

- Only Brunei Darussalam does not require HE or livelihood education in either the lower or the upper secondary levels. In Malaysia, this subject is known as living skills. The recently implemented secondary curriculum in the Philippines also includes HE as a career pathway in TLE.

5.11 Curriculum Organization for Upper Secondary

In the upper secondary levels in Brunei Darussalam, Malaysia and Singapore, students are streamed into specialized areas based on their academic abilities, talents, and interests. Academic schools offer the science, arts, and religious streams while students who are not academically inclined can continue education in any of the 55 technical-vocational schools in the country. Two art schools

also cater to those inclined toward taking up performing arts. At the end of the upper secondary level, students take the Malaysian Certificate of Education Test, which is equivalent to the GCE "O-Level" Examinations. Students will be tested on core and elective subjects across various specialization areas.

Education in this level covers a period of two years. Besides following the General Education Program (GEP), students also begin to specialize in science, art, technical-vocational, and religious disciplines in this stage. Specific schools are designated for each discipline—academic, technical, and vocational schools.

The Philippines does not have upper secondary education at the moment.

5.12 Upper Secondary Level Elective Subjects

Brunei Darussalam, Malaysia, and Singapore offer at least eight major clusters of elective subjects—languages, mathematics, science, humanities and social sciences, religion, arts, ICT, and TVE such as:

- **Languages:** Arabic, French, Chinese (Mandarin), and Tamil
- **Mathematics:** Advanced and higher mathematics
- **Science:** Physics, chemistry, biology, and additional science
- **Humanities and social science:** IRK, Malay literature, Tamil literature, English literature, geography, principles of accounts, economics, commercial studies, development studies, commerce, and accounting
- **Religion:** Higher Arabic, Tasawwur Islam, Al-Quran and As-Sunnah education, and Syariah Islamiah education
- **Arts:** Arts and crafts, music, design and technology, art and design, drama, higher art, and higher music
- **ICT:** IT, computer studies, and ICT
- **TVE:** Food and nutrition, business studies, woodwork, fashion and fabrics, agriculture, and PE

In the upper secondary level, 36 elective subjects are available to students in Brunei Darussalam and 20 in religious schools in Malaysia and over 100 in technical-vocational schools. Singapore offers 27 elective subjects.

5.13 Curriculum Design in the Upper Secondary Level

Brunei Darussalam, Malaysia, and Singapore adopt separate institutional provisions for curriculum design.

5.13.1 Upper Secondary Curriculum Framework in Brunei Darussalam

In year 9, students have the option to continue on to a 2–3-year GEP or to a 3-year AEP. In the general program, all students are required to take four core, three complementary, and at least two elective subjects.

TABLE 46. Years 9–11 General Education Program (GEP)

Core	Complementary	Elective
Malay language, English language	Malay Islamic Monarchy	Malay literature, foreign languages,
Mathematics, sciences (choose from chemistry, biology, physics, and combined sciences	Physical Education	Additional mathematics, Additional sciences
	Co-curricular	Humanities (geography, history, economics Principles of accounts, art & crafts, music, food and nutrition

TABLE 47. Years 9–11 Applied Education Program (AEP)

Core	Complementary	Elective
Malay language	Islamic Religious Knowledge	Geography
English as a second language	Malay Islamic Monarchy	Travel and Tourism
Mathematics and combined sciences	Physical Education Co-curriculum	Commercial Studies, Commerce Accounting, Food & Nutrition Business Studies, Art & Design Art (6010), Drama, Music, Design & Technology, Computer Studies, Information Technology, Woodwork, Fashion & Fabrics Agriculture, Combined Science Advanced Mathematics, Physical Education Commercial Studies, Development Studies

5.13.2 Upper Secondary Educational Framework in Malaysia

In Malaysia's upper secondary level, students are streamed into specialized areas based on their academic abilities, talents, and interests. Academic schools offer the science, arts, and religious streams while students who are not academically inclined can continue education in any of the 55 technical-vocational schools in the country. Two art schools also cater to those inclined toward taking up performing arts. At the end of the upper secondary level, students take the Malaysian Certificate of Education Test, which is equivalent to the GCE "O-Level" Examinations. Students will be tested on core and elective subjects across various specialization areas.

Education in this level covers a period of two years. Besides following the GEP, students also begin to specialize in science, art, technical-vocational, and religious disciplines in this stage. Specific schools are designated for each discipline—academic, technical, and vocational schools.

TABLE 48. List of Compulsory Subjects in theUpper Secondary Level in Malaysia

Core Subjects	Time Allocation per Week (minutes)
Malay Language	240
English Language	200
Islamic Education*	160
Moral Education**	120
Mathematics	200
Science	160
History	120
Physical Education	40
Health Education	40

*Legend: *For Muslim students **For non-Muslim students*

Source: SEAMEO INNOTECH's Experts' Meeting on Curriculum in Southeast Asia, Feb 2011

Malaysian students can also enroll in additional subjects for 120 minutes per week. A wide range of elective subjects is available to Malaysian upper secondary students.

TABLE 49. Upper Secondary Education Elective Subjects and Time Allocation per Week in Malaysia

Elective Subjects*	Time Allocation per Week (minutes)
Biology	160
Physics	160
Chemistry	160
Additional Science	160
Al-Quran & As-Sunnah Studies	160
Syariah Islamiah Studies	160
Home Economics	120
Principle of Account	160
Commerce	160
Home Science	160
Information Technology	160
Arabic Language (Communication)	240
Higher Arabic Language	160
Chinese Language	120
Tamil Language	120
Additional Mathematics	160
Agricultural Science	160
Engineering Drawing	160
Mechanical Engineering Studies	160
Civil Engineering Studies	160
Electrical & Electronics Engineering Studies	160
Invention	160
Engineering Technology	160
Malay Literature	120
Literature in English	120
Geography	120
Art Education	120
Music	120
Tasawwur Islam	160
Furniture Domestic Construction	480
Making Signage	480
Domestic Plumbing	480
Domestic Electrical Wiring	480
Arc and Gas Welding	480
Automobile Servicing	480
Motorcycle Servicing	480
Air Conditioning Servicing	480
Domestic Electrical Appliances Servicing	480

Elective Subjects*	Time Allocation per Week (minutes)
Design and Tailoring	480
Catering Service	480
Food Processing	480
Facial and Hair Care	480
Basic Interior Decoration	480
Infant Care and Early Education	480
Geriatric Service	480
Landscape and Nursery	480
Aquaculture and Pets	480
Food Crop Cultivation	480
Computer Graphics	320
Multimedia Production	320

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

Source: SEAMEO INNOTECH's Experts' Meeting on Curriculum in Southeast Asia, Feb 2011

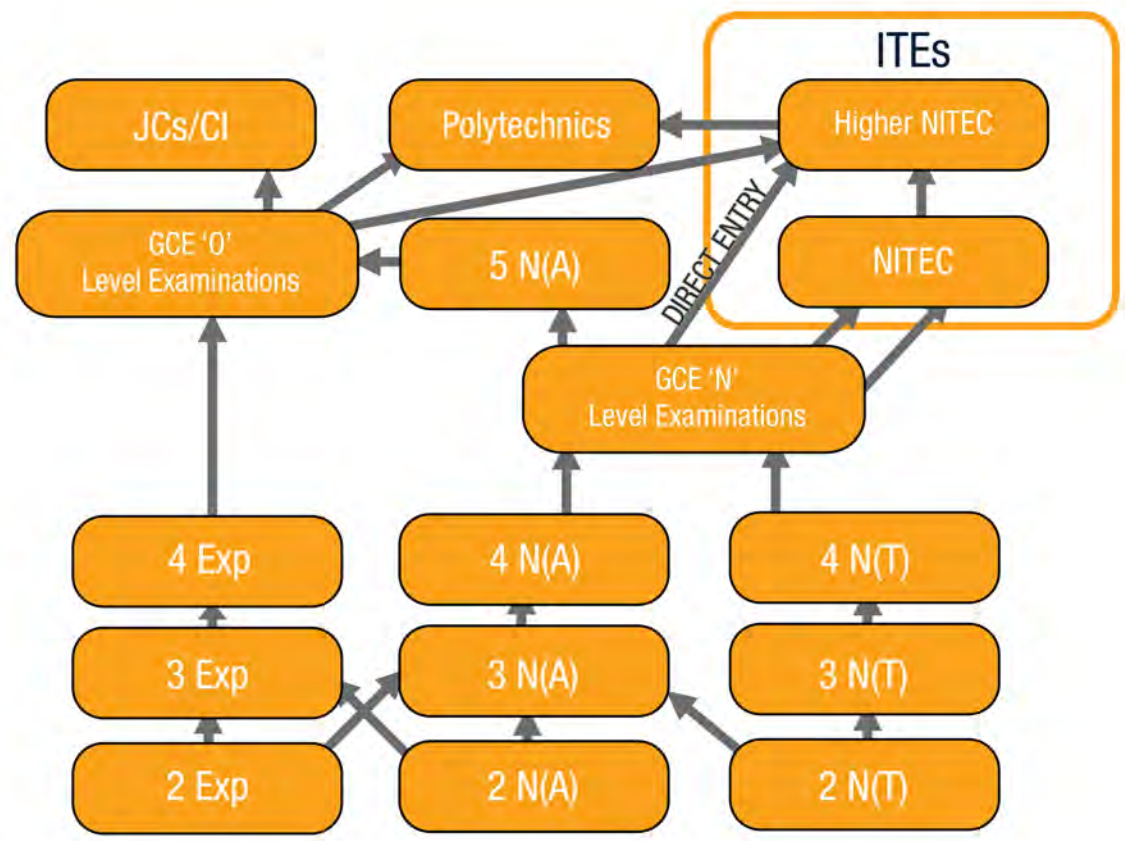
5.13.3 Singapore's Postsecondary Education Programs

Junior College Type. Junior colleges in Singapore were designed to offer an accelerated alternative to the traditional three-year program though two-year programs have become the norm for students pursuing university education. Junior colleges accept students based on their GCE "O-Level" Examination results. They must also obtain an L1R5 score (first language and five relevant subjects) of 20 points or less to gain admission to junior colleges. Junior colleges provide two-year programs that lead to the GCE "A-Level" Examinations. These accept students based on their GCE "O-Level" Examination results although students must also obtain an L1R4 score (first language and four relevant subjects) of 20 points or less to gain admission. The Millennia Institute provides a three-year course that leads to the GCE "A-Level" Examinations.

Polytechnic Type. Polytechnics provide quality practice-oriented training to equip students with skills to contribute to the technological and economic development of Singapore. The typical age for a polytechnic student is 17–20. Students can choose to take up diploma courses in disciplines such as business, chemical and biological science, communications, design, digital media, engineering, and manufacturing. Five polytechnics currently exist in Singapore, including Singapore Polytechnic, Nanyang Polytechnic, Ngee Ann Polytechnic, the Republic Polytechnic, and Temasek Polytechnic. Singapore Polytechnic is considered the oldest polytechnic while the Republic Polytechnic is the newest.

Institute of Technical Education (ITE) Programs. Students aged 17–20 may attend an ITE programs based on his secondary end of cycle assessment scores. An ITE education aims to equip students with technical skills and knowledge to meet the workforce needs of various industry sectors. It provides full-time institutional training and traineeship programs to school leavers as well as continuing education and training programs to working adults. It uses a broad-ranged, multidisciplinary curriculum that spans engineering, technical, business, and service skills. Students can choose to obtain an ISC, a NITEC, or a higher NITEC in industries such as aerospace, automation, electronics, marine and fabrication, and precision engineering.

FIGURE 30. Progression to Higher Education in Singapore



Source: Tampines Secondary School, Singapore, April 2011

5.14 Lessons Learned from the Regional Comparison of Secondary Education

Comparing the content, structure, duration, and alignment of Philippine secondary education is a complicated task given the differences in the way the secondary education is organized. Based on the review undertaken by SEAMEO INNOTECH fellows and curriculum experts, the following points related to the adequacy of the Philippine Secondary Education Curriculum were noted.

5.14.1 English

1. Learning activities in the Philippines reflect an eclectic approach to ELT but also strives for authenticity of teacher inputs and of student outputs. The English language covers little grammar structures as compared to the benchmark countries. Such an approach may be evidence of the dominance of the communicative approach in the Philippine ELT.

2. The Philippines and Malaysia have similar language policies to develop and promote the national language, which restricts the range of uses of English, and, more importantly, successfully bars it from the role of symbolizing identities—national or otherwise. While there are no signs of English being recessive because of its international usefulness, in both cases, the development appears to have been hindered. In Malaysia, English is a second language in inter- and intra-ethnic communication. English has become a language of informal communication, especially in urban areas. Even though the four countries share some features in their English BECs, along with the presence of a multilingual context in their education systems, they are clearly distinct in significant ways in terms of sociolinguistic profile.

3. We cannot expect to simply adopt the English BEC of another country. Any language education policy must take into account the unique sociolinguistic settings of students, schools, and communities it serves.

5.14.2 National Language or Mother Tongue

1. Compared with Brunei Darussalam, Malaysia, and Singapore, the Philippines allots lesser amount of time to studying the National Language (Filipino).

2. In the secondary level, Filipino focuses on literature. Literature is used as a springboard for teaching the language. As one progresses to higher levels of study, less and less of the language component is taught.

3. Teaching the language focuses more on processes and usage. However, processes and discourse analyses are indicated in the spiral aspect of Filipino content. What is important

in the secondary level in terms of content and of the spiral approach of presentation is that it should be limited. In the secondary level, some aspects of the Filipino language curriculum seemed redundant and some key components should have been taught in the elementary level (i.e., separating fact from opinion, cause and effect, discussing the plot of a story).

5.14.3 Mathematics

1. The Philippines allots more time to teach mathematics than the other three countries. This may suggest that the other countries use their time better or accord more emphasis on skills mastery. Singapore lists only three strands—numbers and algebra, geometry and measurement, statistics and probability. The three other countries have a more detailed list of topics and coverage. Brunei Darussalam, Malaysia, and Singapore use the spiral approach with topics from essentially the strands listed by Singapore.

2. The Philippines departed from the spiral approach in the secondary level. The four years (grades 7–10) are divided into a discipline-based curriculum. Specifically, the content for years 7–10 use Algebra 1, Algebra 2, geometry, and advanced mathematics, respectively. The last year essentially continues the study of algebra with the introduction of trigonometry and descriptive statistics.

3. As in the elementary education curriculum, some topics in years 7–10 do not appear in the Philippine curriculum but are listed in those of the other countries. Some appear in lower levels (e.g., transformations are taught in Malaysia in year 8 and trigonometry is taught in year 9). The discipline-based approach of the Philippines also results in the absence of geometry in years 7 and 8, unlike in the other three countries. Likewise, the three countries offer statistics in all of the lower secondary years, while the Philippines only introduces some concepts in year 10).

5.14.4 Science

1. Singapore and Malaysia's curricula focus on developing in students their skills in investigation, discovery, and exploration. This approach seems to indicate that the content leads them to more easily develop a thorough understanding of key scientific concepts.

2. A discipline-based curriculum is used for secondary level in the Philippines compared to an increasing difficulty or spiral approach used in Brunei Darussalam, Malaysia and Singapore. Under the discipline-based approach, subjects are compartmentalized across the years. There is preference on spiral approach in Brunei Darussalam, Singapore and Malaysia. The approach is more effective in developing students' concepts and skills.

3. The research showed that Malaysia and Singapore still focus on a comprehensive range of process skills, especially HOTS. The spiral approach is very evident in the other three countries.

5.14.5 Social Studies

1. Brunei Darussalam, Malaysia, and Singapore all begin their study from the local contexts of their students.

2. Brunei Darussalam, Malaysia, and Singapore present lessons from a developmental perspective. Singapore, in particular, is future oriented. It focuses its lessons on Southeast Asia and the rest of the world while the Philippines teaches history and the government from secondary year 1 and refers to other countries only in secondary year 2 and 3.

3. In secondary year 2 – 5, Brunei Darussalam already teaches accounting, food and nutrition, business, travel and tourism, geography, and development studies, while Singapore handles topics like population, jobs, housing, education, resource management, multiculturalism, and competitiveness in the twenty-first century, and the Philippines tackles history, Asia, and the rest of the world.

4. Singapore's lower secondary level history (secondary year 1 to 4) is future oriented, teaching students historiography concepts and skills, to distinguish fact from opinion, inquiry-based learning through the use of sources, to become explicitly oriented in order to develop critical-thinking skills, and to adapt to regional and global developments.

   Brunei Darussalam, Malaysia, and Singapore emphasize the study of geography in grades 7–11.

   - Brunei Darussalam: Natural resources and environmental issues

   - Malaysia: Landscapes and climates, vegetation and animals, maps, scales, distances, direction, and location

   - Singapore: The environment and future human habitats; physical-human relationships; spatial patterns; and interpretation of maps, tables, and graphs

5.14.6 MAPEH

1. The amount of time allotted to teaching art, health, and PE is adequate. That for music is not. Ideally, elements of music can be better taught if the frequency of contact time is increased. The content areas covered in the four disciplines are adequate and follow pedagogical principles.

2. The content areas for the secondary level are likewise sufficient in art, health, and PE. Philippine Music classes in the secondary level, particularly in secondary year 2, focus on Southeast Asian music. Changing this to include Korean music to align with the interest of the students and the recent popularity of this kind of music is suggested. The content in these different areas of study is adequate and provides opportunities to cultivate nationalism, patriotism, critical and creative thinking, and values that are essential to personal development.

5.14.7 Values Education

Brunei Darussalam: The focus of values on nationhood education aims to inculcate virtues and values through the Malay Islamic monarchy in order to foster understanding and cooperation so students can positively contribute to the advancement of society.

Malaysia: National moral education is designed to develop in students values that Malaysians of diverse cultures should share or that the government wishes them to develop as shared values in order to bring about religious and ethnic harmony.

Singapore: Promotes core values such as respect, responsibility, integrity, care, resilience, and harmony from K to 10.

Philippines: Espouses the following list of values: personal responsibility, family solidarity, society, work, and good morals.

The amount of time allocated to values education is sufficient. In the levels, values education goals support the national education goals. The essential values for these age groups are found in values education content. However, work-related values both for technical-vocational and professional work can be intensified in the pre-university level.

A clear understanding of the subject requires the definition of values. Without definitions, students may be misled and be unable to discern right from wrong. Values clarification in the 1960s is a relativistic view that prescribes value neutrality (Lickona, 1992). The seven-step valuing process of choosing freely, choosing from alternatives, choosing thoughtfully, prizing and cherishing, affirming, acting upon choices, and repeating value-based choices does not teach children moral intelligence.

Moral intelligence is the capacity to understand right from wrong. It requires having strong ethical convictions and acting on them so that one behaves in the right and honorable way (Borba, 2001).

Values education content can be naturally integrated with the other disciplines. For example, health and harmony with nature can be integrated with science; nationalism, peace, and justice with social studies; and livelihood with TLE.

Good stories enable students to examine characters' actions and the consequences of certain actions. These acquaint students with ideals by which people in society try to live by moral standards. Throughout the centuries, many wise and learned people have recommended the use of stories to teach values.

5.14.8 TLE, Design and Technology, or ICT

The review revealed that in grades 11 and 12, at least 10 hours per week are devoted to teaching design and technology or TVE. TLE in the Philippines offers content based on competency standards, which leads to national skills certification by respective skills assessment centers or offices.

The Philippines' secondary curriculum is strong or well-founded, particularly in technology learning components, considering that the competencies therein are anchored or dovetailed to the training regulations of the TESDA. Its only probable weakness lies in implementation. Allied or tool subjects should be contextualized in terms of learning outcomes in various fields of specialization, particularly in math, science, and English.

In TLE (for general secondary students), technical drawing should be offered since this is the second language of technical people.

The Philippine IT content is mostly integrated with TLE. It is inadequate compared with teaching ICT in Brunei Darussalam, Malaysia, and Singapore. Very little time is allocated per subject area, again perhaps due to lack of computing equipment.

CHAPTER SIX ASSESSMENT AND TESTING

6.1 Forms of Assessment

All students are assessed throughout basic education through continuous school- or teacher-based assessment. Some forms of formal assessment or certification take place in all countries toward the end of elementary, lower secondary, and upper secondary levels.

In general, these forms of assessment are nationally determined and recognized. Assessment procedures vary. Where this is the case, student choices at the end of lower secondary education are determined by their levels of achievement in this stage. In some countries, this is based on a leaving examination (e.g., Singapore).

6.2 Assessment in Preschools

No formal or national assessment is carried out at the end of preschool in Brunei Darussalam, Malaysia, and Singapore. In Malaysia, assessment in preschool is continuously done through reporting of children's progressive development using assessment tools such as checklists, anecdotes, and narrative reports included in individual student profiles (Zamzaimitul, 2011).

In the Philippines, the DepEd administers the School Readiness Assessment (SReA) to determine entering grade 1 pupils' level of preparedness of entering grade 1 pupil for Elementary 1. The school readiness test was first administered among all grade 1 entrants in public elementary schools to determine their readiness in terms of four domains—gross motor, fine motor, cognitive; and language skills. Those who score 75% or above are categorized as school ready while those who score below 75% are categorized as not ready. Those who are not ready are made to undergo early childhood experiences in grade 1—an eight-week curriculum consisting of objectives, skills, and developmentally appropriate activities that aim to develop the readiness of grade 1 entrants. The lessons are interesting and stimulating in order to make learning pleasant and enjoyable and to ease transition from the home to a school. Those who are school ready, on the other hand, join classes that use the grade 1 curriculum from the very beginning.

6.3 Assessment in the Elementary Level

6.3.1 Brunei Darussalam

An end-of-level assessment test known as the PSR is given at the end of year 6. At the end of year 8, the student undergoes student progress assessment, which determines whether a student can join a fast-track program (years 9–10) or the normal three-year program (years 9–11), which culminates with the Brunei-Cambridge GCE "O-Level" Examinations.

One of the main differences between *SPN 21* and the old system is the introduction of formative assessment modes to promote self- and peer assessment. Student progress assessment consists of two components:

1. School-based assessment is a formative mode of assessment employed throughout the year to enhance the learning process, whereas the School Progress Examination refers to a summative mode used to evaluate learning outcomes at the end of each year level. School-based assessment modes include topical tests, homework, class work, practical work, field trips, and project work, all of which are administered by schools.

2. The School Progress Examinations test students in core subjects and are prepared by the Department of Examinations. The tests for other subjects are prepared by a special committee.

6.3.2 Malaysia

Elementary School Evaluation Test (UPSR)

UPSR is a national examination taken by all students in Malaysia at the end of their sixth year in elementary school before they leave for secondary school. It is prepared and examined by the Malaysian Examinations Syndicate, an agency under the MOE. Students in national schools are required to take five subjects in addition to an aptitude test. Students of Chinese and Tamil national-type schools are required to take two additional language subjects, totaling seven subjects.

The subjects tested in this examination include:

- Malay comprehension
- Malay writing
- English
- Mathematics
- Science
- Chinese comprehension (compulsory for Chinese-school students only)
- Chinese writing (compulsory for Chinese-school students only)

- Tamil comprehension (compulsory for Tamil-school students only)
- Tamil writing (compulsory for Tamil-school students only)
- Aptitude test

6.3.3 Philippines

The DepEd uses the National Achievement Test (NAT) to monitor the public education system and schools for public accountability, to help provide information in order to better identify instructional practices, to measure student achievement, and to evaluate student mastery. The test results are often a major force in shaping perceptions about the quality of schools in the country.

National Level

National testing of grade 6 and second year high school students has been conducted since 2005.

Also since 2005, all sixth graders and high school seniors have been tested one week before the final examinations. The NETRC, with the assistance of elementary and secondary officials, administers these tests.

The subjects assessed in grade 6 and in second year are English, Filipino, science, mathematics, and social studies. Selected response tests are given to the total population while constructed response tests (e.g., essays) are only given to a certain sample.

The learning competencies measured by subject area and the guidelines in conducting assessment, utilizing test results, as well as delivering and retrieving test materials are discussed in an orientation conference one month before the administration of the test.

Division Level

A diagnostic test for grade 4 was developed by the divisions for implementation in schools beginning SY 2005–2006. No other tests are administered by regional, division, and district offices without the prior approval of the Secretary of Education. Regional supervisors oversee the preparation or development of the diagnostic test, administer the test, and utilize the test results to improve learning outcomes.

Philippine Informal Reading Inventory (Phil-IRI): A nationally validated assessment tool for measuring the reading proficiency level of public elementary students in both English and Filipino. The utilization of the tool began in SY 2004–2005. Its results present the reading profiles of public elementary schools nationwide. Likewise, data from the assessment serves as basis for designing appropriate interventions. The Phil-IRI assesses reading proficiency levels, including word

recognition, comprehension, and reading speed of elementary school students. Phil-IRI assessment tools are packaged in two sets:

- Phil-IRI oral test (English and Filipino)
- Speed and comprehension test (English and Filipino)

Each set of Phil-IRI assessment tools comes with a manual of administration, forms for recording student scores, and test materials. Each Phil-IRI assessment tool focuses on evaluating students' reading abilities. The oral assessment tool measures the students' comprehension levels vis-a-vis their fluency. The speed and comprehension assessment tools aim to measure the students' comprehension levels within a specific time frame. When the students are given all four assessment tools, the teachers obtain a more comprehensive view of their reading abilities, regardless of context of evaluation—silent or oral (Go and Galileo, 2011).

Pending the revision of the current grading system, the implementation guidelines for the performance-based grading system, as defined in DepEd Order No. 33 s. 2004, will continue to be enforced with emphasis on the formative functions of assessment. Students' progress in attaining standards shall be regularly monitored as a basis for enrichment or for remediation. Every learning deficiency shall be addressed and every learning gap shall be bridged as a matter of urgency.

Mode and design: The 60-30-10 test design will continue to be adopted wherein 60% of the items are easy to answer despite assessing critical thinking, 30% are moderately difficult to answer, and 10% are difficult to answer. Authentic assessment that considers the application of learning to real-life situations will be an important mode of measuring learning outcomes. Alternative assessment will be utilized when appropriate. The use of rubrics as scoring guides will be continued for a more objective method of rating students.

Student promotion and retention. Student promotion will be done by subject and will continue to be based on the minimum performance standard of 75%. Sixty-five percent will remain the lowest grade that can be indicated in a student's report card. A student will be retained in his/her year level if he/she incurs failures for three units or more during the regular SY and is unable to make up for the failures during the summer. Retained students need to repeat only the subjects they failed and will not be allowed to take advanced courses in these.

6.3.4 Assessment in Singapore

The Singapore Examination Authority Board (SEAB) is the authority that oversees assessment and examinations in Singapore. It was established on April 1, 2004 as a statutory board. The SEAB, formerly the Examinations Division of the MOE, was formed to develop and to conduct national examinations in Singapore and to provide other examination and assessment services locally as well

as overseas. The SEAB collaborates with the MOE on all national examinations. It also positions itself to become a regional center for testing and assessment services and to contribute to Singapore's development as an education hub.

In the elementary level, the SEAB conducts nationwide examination that tests students in English, the mother tongue (typically Chinese, Malay, or Tamil, and other South Asian languages such as Bengali, Gujarati, Hindi, Punjabi, and Urdu), mathematics, and science. Each subject lasts around two hours with variations of 15 minutes, except for certain components of language subjects.

The format of the PSLE and its presence in the Singapore education system makes it part of the national culture. PSLE materials have also been exported to other countries. Some schools abroad require their students to take the international version of the exam called the PSLE sometime in August to help them benchmark themselves vis-a-vis the performance of other foreign schools.

6.4 Assessment in the Secondary Level

Brunei Darussalam and Malaysia administer end of lower secondary assessment called the GCE "O-Level" Examinations. Malaysia administers the PMR, a lower secondary assessment test taken by all form 3 students. The PMR is set and provided by the MES, an agency attached to the MOE. This examination is annually given during the first or the second week of October. After upper secondary education or form 6, Malaysian students take the STPM or GCE "A-Level" Examinations, which is regulated by the Malaysian Examination Council.

In Brunei Darussalam, at the end of year 8, students undergo Student Progress Assessment, which determines whether they can join the fast-track program (years 9–10) or the normal three-year program (years 9–11), which culminates with the Brunei-Cambridge GCE "O-Level" Examinations.

In Singapore, there is no assessment after year 8. However, Singapore actively participates in international tests for science and mathematics such as the TIMSS.

The Philippines administers the National Career Aptitude Examination (NCAE). It does not utilize the streaming strategy but has, in 2010, revised the secondary curriculum such that students can opt to take two additional hours daily of special interest subjects. These include the Special Program in the Arts, the Special Program in Sports, the Special Program in Journalism, the Special Program in Foreign Languages, and the Special Program in Science or Math.

6.5 Benchmarking the Philippine Assessment System with that of Hong Kong

In the curriculum validation activities, the Singapore Curriculum Development Division of the Ministry of Education informed the SEAMEO INNOTECH researchers and validators that Hong Kong is presently undergoing curricular reform, and just like the Philippines, Hong Kong is bent on implementing an additional year of secondary and a new assessment system. Given this situation, Singapore MOE strongly recommended that the Philippine K to 12 team look at the new secondary education curriculum and assessment model. Moreover, Hong Kong has long been a good benchmark for assessment systems in the region. Having a new secondary education structure, Hong Kong is set to implement a single examination called the Hong Kong Diploma in Secondary Education in 2012. Moreover, Hong Kong will increasingly use school-based assessment, which refers to testing administered in schools and marked by the students' own teachers. School-based assessment marks will be counted as the students' public assessment results. School-based assessment has been adopted by all major examination bodies over the past 20 years to improve the quality of learning, teaching, and assessment in schools. Hong Kong's new secondary curriculum will use school-based assessment along with additional transitional timelines that will be recommended by the HKEAA, an NGO that oversees and administers national examinations. The HKEAA closely works with the UCLES to ensure international recognition by benchmarking levels for the new secondary education subjects.

The rationale for elementary school-based assessment is to enhance the validity of tests by including assessment of outcomes that cannot be readily measured within the context of a one-off public examination. School-based assessment can also reduce the dependence on the results of public examinations, which may not always be the most reliable indicators of the actual abilities of candidates. Obtaining assessment based on student performance over an extended period of time and developed by those who know the students best—their teachers—provides more reliable assessment for each student. Another reason for including school-based assessment is to promote a positive impact on teaching and learning. It can motivate students by engaging them in meaningful activities and can reinforce curriculum aims and good teaching practices among teachers as well as provide structure and significance to an activity they are involved in on a daily basis—assessing their own students.

School-based assessment is a salient feature of the HKDSE that will be introduced in 2012. In the HKDSE, all 24 subjects will include a school-based assessment component. To enable schools and teachers to familiarize themselves with the new senior secondary curriculum as well as the school-based assessment requirements and procedures, a strategic implementation strategy will be adopted.

6.6 Lessons Learned from the Regional Comparison of Assessment and Testing Systems

Elementary school graduates in Brunei Darussalam, Malaysia, and Singapore take exit examinations to determine what types of secondary school they will be streamed to. However, in Malaysia, graduates of vernacular schools that do not pass Malay and English have to attend a one-year transition program to ensure mastery of the two languages since these will be used as MOI in the secondary level.

In the Philippines, elementary level graduates take the NAT that is basically used to rank schools and school divisions. Students who fail certain subjects have to take remedial classes during the summer. In addition, grade 6 graduates are not streamed into different types of secondary school since no such system is being implemented in the Philippines. Nevertheless, grade 6 graduates who are interested in enrolling in science schools are instead required to take entrance examinations to these schools. Each science school has its own entrance examinations and it is up to the grade 6 graduates to select which schools they are interested in.

In Malaysia and Singapore, the exit examinations cover only four subjects while those in Brunei Darussalam and in the Philippines cover five areas. In Malaysia, these subjects are Bahasa Melayu, English, science, and mathematics. In Singapore, these subjects are the mother tongue, English, science, and mathematics. In Brunei Darussalam, these subjects are Bahasa Malay, English, science, mathematics, and general subjects. In the Philippines, these subjects are Filipino, English, science, mathematics, and HEKASI. The Philippines does not currently have an exit examination at the secondary level.

Singapore and Hong Kong revealed that their assessment results remain confidential and not for ranking or comparing achievements of one school over another.

CHAPTER SEVEN CONCLUSIONS AND RECOMMENDATIONS

7.1 Conclusions

DepEd, through the Philippines National Education For All Committee (NEC), commissioned the SEAMEO INNOTECH to conduct a regional comparison of the basic education curriculum to provide information on the curricular content, organization, structure and adequacy of the educational systems in Brunei Darussalam, Malaysia, Singapore and the Philippines.

It has become clear that all the countries considered in the study are undergoing reform in the past five years. The scale and direction of reform can be gleaned in the inputs and curricular comparisons as follows:

Findings revealed that the Philippines is the only country in Asia that requires only 10 years of combined elementary and secondary education prior to entering a university or a college. This relatively short period spent in school has been faulted as inhibiting the economic and social capabilities of students once they graduate and has been consequently said to curtail citizen contribution to the overall national development.

Southeast Asian children from Brunei Darussalam, Malaysia, and Singapore usually begin preschool education between the ages of four and six. Brunei Darussalam and the Philippines have institutionalized kindergarten as the first level of education in its BEC. Preschool education is currently recognized as part of formal basic education only in Brunei Darussalam with government support for one year of preschool attendance for all children aged five.

The four Southeast Asian countries' kindergarten systems have designed and implemented curricula whose content, in sum, intends to achieve preschool education objectives. Among the four countries, Malaysia is the only one that explicitly states the compulsory use of its National Standards-Based Preschool Curriculum. The other three countries only prescribe the use of their respective curriculum frameworks. Unlike the curriculum designs for the elementary and secondary levels, preschool curricula are relatively less content-based and are more activities-based. This is true for all four countries.

Preschool classes usually last 3–4 hours a day, usually in the morning although many preschools offer classes in morning and afternoon shifts. Some daycare centers and work-based child-minding programs also offer to attend to children while their parents are at work throughout the day.

Elementary education covers six years in all four countries with two main phases. In Brunei Darussalam and in Malaysia, the two phases of elementary education each comprise three years

(years 1–3 and 4–6). In the Philippines and in Singapore, the first phase covers years 1–4. The last two years are considered intermediate grades in the Philippines and the orientation stage in Singapore.

Secondary education in Brunei Darussalam, Malaysia, and Singapore utilizes the streaming strategy based on students' academic abilities, talents, and interests. End-of-level assessment is conducted to match students to appropriate education streams, which vary in duration, curriculum content, and mode of progression to postsecondary schooling. The countries have lower and upper high school ladders wherein upper high school specializes in technical-vocational preparation. The Philippines does not utilize a streaming strategy although the *2010 Secondary Education Curriculum* now includes the Special Program in the Arts, the Special Program in Sports, the Special Program in Journalism, the Special Program in Foreign Languages, and the Special Program in Science and Math.

The amount of instructional time per subject in the secondary level is significantly higher in the Philippines than in the other three countries. The main similarity of the curricula of Brunei Darussalam, Malaysia, the Philippines, and Singapore lies in the reflection of understanding by educators and curriculum developers that English, the national language, mathematics, and science are crucial to the collective foundation for learning. Similar to their centrality in the elementary level, these subjects remain as core subjects in the secondary level.

The elementary and secondary levels in Brunei Darussalam, Malaysia, and Singapore follow a spiral curriculum, especially for core subjects.

Curriculum reviewers detected some evidence of possible overcrowding in the Philippine BEC in the secondary level, particularly in languages, science, and mathematics.

The Philippines needs to refocus its education goals on the 21st century competencies to be attuned with its neighboring countries.

It is evident that Brunei Darussalam. Malaysia and Singapore implement a single integrated curriculum framework for basic education. In the Philippines the discontinuity of the elementary and secondary curriculum framework should be addressed to ensure seamless continuity of competency development.

7.2 Policy Options

1. **Amend current educational goals to make them clear, focused, relevant, and anchored on the development of 21st century competencies.** The present educational goals are bent on developing functionally literate Filipinos by 2015. While the national definition of functional literacy is quite forward on its thinking, anchored on the UNESCO 4 Pillars of Learning, it would be beneficial to refocus education goals on the development of 21st century literacies. Given the realities of the knowledge society, the goals may need to be revisited and redirected toward a long-term set of goals around which current program improvements and strategies can be developed.

2. **Revisit core and compulsory subjects to streamline content and to align this with more focused objectives for better outcomes.** The study revealed that subjects in the Philippines are overcrowded and tend to cover too much technical content. There are also observations that the time allotment for all subjects is longer than that of the benchmark countries.

3. **Improve the modes and mechanisms for assessment to support effective learning and teaching.** The benchmark countries implement a national level examination which are recognized internationally. Strengthening the testing system and using internationally-recognized assessment such as those of Brunei Darussalam, Malaysia and Singapore will provide for better transferable diplomas and certificates. The DepEd should spearhead end-of-cycle assessment that provides evidence of academic qualifications and record of performance in school for the purpose of employment or higher studies. Greater use of formative assessment to diagnose learning goals and guide instructional interventions is very much needed.

   The following are specific recommendations for each level of education:

a. **Preschool education:** Strengthen government support for early childhood education in order to build a strong foundation for learners. Kindergarten should be made mandatory for all children aged five with nationally prescribed standards for early childhood education. The Philippines offers the shortest time for preschool (3 hours) while our counterparts spend 4 hours. It is recommended that the country strengthen its preschool program by having a comparable learning time with the rest of the region.

b. **Elementary education:** Decongest elementary level subjects: The data gathered shows that Philippine elementary education subjects are aligned with core and compulsory subjects in Brunei Darussalam, Malaysia, and Singapore; however, some subjects in the Philippines appear to have a generally congested content. The study recommends a close interphase with the *2010 Secondary Education Curriculum*. The following subjects should be decongested in the elementary level: mathematics, sciences, Social Studies, and EPP. MAPEH should be strengthened and ICT should be introduced at the elementary level to develop the 21st century skills.

c. **Secondary education:** Decongest secondary education subjects and support spiral progressive curriculum model. Curriculum content is congested in secondary education in the Philippines compared with those of the other three countries. Some strategies that can be implemented are:

- Decongesting the present curriculum, thereby improving mastery of key skills, knowledge, and content areas. There should be a genuine consistency in the secondary education curriculum.

- Lengthening the cycle of secondary education to substantially increase the amount of time allotted to learning core and elective subjects in order to make drastic improvements in students' abilities and competence.

- Promoting spiral progressive curriculum at the secondary level. The K to 12 curriculum framework should be aligned with the world's standard of offering an integrated science and technology approach, integrated mathematics, civic education which should not be devoted solely to history but trains a child to think critically and participate actively in the 21st century.

- Developing an upper secondary system with multiple channels and diversity to provide learning opportunities for those who will pursue higher education and for those who will take the technical and vocational track.

- Emphasizing the new secondary education curriculum's end goals of preparing for higher education and workforce development. Thus, the new curriculum should ensure pathways from high school to postsecondary competency certification in order to keep them seamless.

- Helping prepare students for decisions regarding career options/choices, The secondary education curriculum should include an enhanced career preparation and guidance program. This will be essential to support government's plan for adding upper secondary level with elective subjects.

4. **Enhance assessment and certification practices and implementation in basic education.** It is recommended to conduct end-of-cycle assessments on year 10 and year 12 to determine students' performance in different learning activities, thus allowing students to have a lower high school certification which they can use in case they will not push through with upper secondary education. At the same time, an upper high school leaving certificate is recommended which may also serve as their own admission to higher education institutions. The DepEd should study the implementation of end-of year 10 and year 12 examination based on the K to 12 curriculum. As mentioned in recommendation 3, strengthen formative assessment to encourage "assessment for learning" and expand range of assessment methodologies used.

5. **Strengthen the link between the elementary and secondary levels.** There is a need to strengthen the link between elementary and secondary goals, ushering a unified framework to ensure smooth progression for K to 12 learners. Whereas the elementary level adheres to the *2002 BEC*, the secondary level utilizes backward design approach or UbD. The curricular programs, practices and framework in the two levels should complement each other for the holistic development of the Filipino learners.

6. **Develop multiple pathways for upper or senior high school:** To develop graduates with "Digital Age" literacy, inventive thinking and effective communication skills, high productivity, and essential values, the Philippine education curriculum should undergo significant reform. The new curriculum should aim to strengthen the knowledge base of students so they can have twenty-first century competencies that the "Net Generation" requires.

   Years 11 and 12 should not follow a one-size-fits-all program. Upper secondary levels or year 11 and 12 programs should be offered with different specializations and tracks. It is proposed that the upper secondary high school, like the post-secondary education of Singapore, adopt common subjects such as languages (English and the mother tongue), mathematics, science, social studies, humanities, and MAPEH but will offer more elective subjects, particularly in eight areas—languages, mathematics, science, humanities and social science, religion, art, ICT, and TVE.

   The specific approaches draw, to a large extent, on research on models of secondary education that SEAMEO INNOTECH conducted:

   Track 1: A Six-year general secondary education. The curriculum will follow the enhanced secondary curriculum known as the *2010 Secondary Education Curriculum*. The core and compulsory subjects in the first four years will be the same as the subjects in the present 2010 SEC; however, the curriculum will offer career-oriented elective subjects such as business studies, bookkeeping, travel and tourism management, animation and the like in its TLE subjects. More flexibility will be given to schools on the elective subject offerings to suit the needs of the students and the local needs.

   Track 2: Applied secondary education will be a general secondary (with traditional core and compulsory subjects) in the first four years and two-year career-oriented subjects leading to some technical and vocational certification.

   Track 3: Integrated secondary education. This offers an integration of the four-year general secondary (2010 SEC) and two-year junior college levels, which mostly covers the general education subjects in college. An Integrated program is a combination of a four-year 2010 SEC curriculum followed by a two-year pre-baccalaureate course or

program. The Integrated Program (IP) is designed for students who intend to pursue higher education. The two-year pre-baccalaureate course would offer liberal education, communication subjects (English and Filipino), advanced mathematics, advanced sciences and compulsory subjects offered in the first two years of college course or first degree courses (e.g. taxation, Rizal, National Service Training Program (NSTP), Logic and Ethics to name a few).

The proposed three upper secondary education program models will redound to a review of the Bachelors degree program or the first degree program as the case may be, as some subjects will already be taken up in the proposed upper secondary education subjects. The general education subjects will be minimized and higher education may focus on professional subjects with a view to achieving excellence in the profession. Higher education should determine the duration of study of each program according to practical circumstances and needs.

7. **A Proposed New Structure with Assessment Pathways.** The proposed new structure would be divided into three stages—the elementary level, which will end with an assessment; the lower secondary level, which will lead to the awarding of a lower high school diploma based on the results of a national examination; and the upper secondary level, which will have core, compulsory, and elective subjects.

   The upper secondary level should ensure that students follow a coordinated study program leading to advanced or higher polytechnic or university courses. At the end of year 12, they will undergo standards-based assessment, which will lead to the awarding of an advanced high school diploma. This assessment could also be used for merit scholarship programs under the CHED. Those who will make it to the top 25% of the Advanced High School Assessment Test could automatically qualify for merit scholarship slots. The remaining qualifiers who belong to lower socio-economic profiles may qualify for StuFAPs.

FIGURE 31. The Proposed Curriculum and Assessment Pathways

8. **Use of Career-Oriented Studies and Electives.** Philippine secondary education is bombarded by high dropout and low enrolment rates often due to poverty. Career-oriented studies (COS) at the secondary level which incorporates a comprehensive career guidance program, offer a working solution to this phenomenon. COS will offer a broad range of electives to cater to the needs of the community. It will help prepare students for employment or for further studies.

   Like Brunei Darussalam, Malaysia, and Singapore, the Philippines needs to provide secondary students generic and vocational skills as well as the necessary values and attitudes. SEAMEO INNOTECH in partnership with DepEd has successfully piloted a model of each career oriented studies through the Applied Academics for Excellence (APEX) Program, The APEX approach might be a useful model for the DepEd to consider as it begins to craft its Upper Secondary Technical and Vocational elective subjects. APEX incorporates the following key dimensions:

   Basic Workplace and Entrepreneurial Areas of Studies: This revolves around the development of interconnected skills—applied academics, technical, and employability skills. Students are taught to generate, recognize, and seize opportunities to invest and start a business enterprise. Elective subjects that may be offered include:

   - Art and media
   - Business studies
   - Design
   - Engineering (automotive technology)
   - Food production (food preparation and preservation)
   - Tourism and hospitality
   - Services (spa, beauty, therapy)

   Linking APEX to Postsecondary Institutions: APEX secondary schools can be connected to technical-vocational institutes such as community colleges and technical-vocational schools. A combined secondary and postsecondary program, which leads to a two-year associate degree or to a two-year certificate, can be obtained by students. The scheme can provide a strong technical and entrepreneurial preparation at least in the field of engineering technology, trade, or business by building on students' competence in mathematics and science using applied academics through a sequential course of study that eventually leads to placement in employment.

   Modes of Implementation. Secondary schools will be encouraged to work closely with postsecondary technical and vocational course providers in order to offer career-oriented elective courses according to the learning needs of their students and to the profile of the community or locality. The following are three non-exclusive modes of implementation for reference:

Mode 1: Courses take place at the venues of course providers and are taught by their staff. Secondary schools arrange for their students to attend the courses according to the timetables of the course providers. Some course providers such as dual-tech schools or technical-vocational institutions in the community may be tapped.

Mode 2: Courses mainly take place in secondary schools and are taught by their staff (with proper certification from the TESDA or any course provider). Schools are expected to identify career-elective teachers so that proper certification can be obtained.

Mode 3: An established linkage or memorandum of agreement with the course provider may be obtained to conduct the courses on a secondary school's behalf although the school will remain responsible for the internal quality assurance of course delivery and assessment.

7.3 Conclusion

Curriculum review and reform are constant elements of educational policies and provisions. At the heart of the K to 12 reform initiative should be consciously mandated and regularly implemented reviews of curricula in order to consistently ensure alignment with national education goals and development plans.

This research sought to compare the education system of Brunei Darussalam, Malaysia, and Singapore with that of the Philippines in order to identify approaches, models, and practices that may serve as inputs to the DepEd K to 12 basic education reform agenda. It is hoped that the insights gained herein will help inform policy development, curriculum design, and curriculum implementation in moving this reform agenda forward.

REFERENCES

Andrada L.M. 2011. The 2010 Philippine Secondary Education Curriculum. *"Experts Meeting on BEC in Southeast Asia."* February 8–11, 2011. SEAMEO INNOTECH. Philippines.

Brawner, F. 2011. Philippine Science High School System Curriculum. *"Differentiated Secondary Schools in the Philippines."* March 4, 2011. SEAMEO INNOTECH. Philippines.

Chun, Ty. 2011. Singapore Basic Education Curricula for Various Courses. *"Differentiated Secondary Schools in the Philippines."* March 4, 2011. SEAMEO INNOTECH. Philippines.

DepEd Strengthened TVE Program (STVEP). 2010. *Manual of Operations: Public Technical Vocational Highs Schools.*

Dominguez, M.L. and Guito, J. 2011. Don Bosco Technical College Curriculum. *"Differentiated Secondary Schools in the Philippines."* March 4, 2011. SEAMEO INNOTECH. Philippines.

Orines, F. 2011. Manila Science High School Curriculum. *"Differentiated Secondary Schools in the Philippines."* March 4, 2011. SEAMEO INNOTECH. Philippines.

Medrano, V. 2011. San Pedro Relocation Center National High School Curriculum. *"Differentiated Secondary Schools in the Philippines."* March 4, 2011. SEAMEO INNOTECH. Philippines.

Chong, K.K. 2011. Country Report: Brunei Darussalam. *"Experts Meeting on BEC in Southeast Asia."* February 8–11, 2011. SEAMEO INNOTECH. Philippines.

Zamzaitul, A.H.A. 2011. Education in Malaysia. *"Experts Meeting on BEC in Southeast Asia."* February 8–11, 2011. SEAMEO INNOTECH. Philippines.

Philippine School of the Arts Information and Curriculum. http://www.phsa.edu.ph/.

Philippine Secondary Education Curriculum (SEC) 2010. http://www.bse.ph/.

Singapore Basic Education Syllabi (per learning area). http://www.moe.gov.sg/.

Singapore Secondary Education Information. http://www.edupoll.org/content/view/20/.

Singapore High School of Mathematics and Science Information and Curriculum. www.highsch.nus.edu.sg.

Singapore School of the Arts Information and Curriculum. www.sportsschool.edu.sg.

Singapore School of Science and Technology Information and Curriculum. www.sst.edu.sg.

Singapore Sports School Information and Curriculum. www.sota.sg.

*SPN 21 Framework and Guidelines for Curriculum and Assessment. 2*010. Curriculum Development Department. MOE. Brunei Darussalam.

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