



Gamani Corea Foundation

**Examination of the Current Education System of Sri Lanka in Relation to the
Provision of Prerequisites and Attributes Concerning Very High Human
Development
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Conducted by Marga Institute for Gamani Corea Foundation

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1 Introduction

Education plays a crucial role in human development and in achieving the status of very high human development (VHHD). In this regard, the objective of this exercise is to examine measures adopted to eliminate or reduce any deficiency that the current education structure may entail. In this presentation, the features representing notable achievements already in place regarding prerequisites and attributes for VHHD are indicated first. Then, the features characterising the weak aspects in this context are presented next, followed by some recommendations.

2 Good Status Already Achieved Regarding Education-Related Prerequisites for VHHD

Firstly, the study records the "good status" that is already in place. Then, the features that are not in good standing are differentiated since they require strategies to bring them up to a "good status". The selection of the three countries, Finland, Singapore and South Korea, for comparison, is deliberate to provide possible realistic targets for the recommended courses of action. South Korea and Singapore are leaders in the field of educational excellence in Asia. Finland was selected to make a futuristic goal possible through a more emancipatory educational methodology.

2.1 Distribution of School Enrolment by Grade Group in Government Schools

A noteworthy feature of Sri Lanka is the trend towards the achievement of prerequisites for VHHD is the high enrolment in the upper grades and parity regarding female enrolment in schools. The figures are in Table 1.

Table 1: Distribution of School Enrolment by Grade Group and Gender in Government Schools (2019)

Grade Group	Total Pupils	Group %	Male Pupils	Male %	Female Pupils	Female %
Primary Cycle: Grades 1 – 5	1,656,441	40.8	839,176	50.7	817,315	49.3
Junior Secondary Cycle: Grades 6 -9	1,359,061	33.5	682,448	54.2	676,613	49.8
Senior Secondary Lower Cycle: Grades 10 – 11	627,477	15.4	310,306	49.5	317,171	50.5
Senior Secondary Upper Cycle: Grades 12 – 13	411,161	10.1	182,572	44.4	228,589	55.6
Special Education Units	7,513	0.2	4,553	60.6	2,960	39.4
Total of All Groups	4,061,653	--	2,019,005	49.7	2,042,648	50.3

Source: Ministry of Education Sri Lanka (2019), Annual School Census report

Although Sri Lanka is a country in the low middle-income category, female participation in schooling is on par with male participation and even higher in the upper-grade groups. In this respect, the behaviour of Sri Lanka is similar to that of the much higher-income countries. However, as seen in Table 8, 84% of GCE Advanced Level (A/L) Arts students are female, which, as shown in section 2.7, are less employable and have lower income-earning opportunities.

It is noted that a reasonably high percentage (10%) of the school population proceeds to the uppermost segment of the school system. Another factor to be mentioned is the continued reduction of school-age children not attending school. This group has rapidly decreased from 87,520 in 2011 to 9,296 in 2018 (UNESCO, 2021) This will positively impact Sri Lanka's VHHD drive to achieve a mean of 10 to 12 schooling years.

2.2 High Enrolment in the Upper Cycle of Senior Secondary Education

Table 2 shows that a high proportion of pupils in the Senior Secondary lower cycle (grades 10/11) succeed in enrolling in the Senior Secondary Upper segment (GCE (A/L) Grades 12/13) by qualifying at the GCE Ordinary level (O/L) examination. This is true for female students as well. The figures are in respect of the most recent years. Higher enrolment in the upper grades is favourable to VHHD as it will be a platform for achieving close to 15 years of schooling expected by VHHD standards.

Table 2: High rate of students proceed to the upper Senior Secondary cycle of schooling

Year	Number of School Pupils sitting the GCE(O/L) Exam	Number of School Pupils Qualifying for GCE(A/L)	% of School Pupils Qualifying for GCE(A/L)
2017	296,812	216,815	73
2018	296,020	222,281	75
2019	305,427	225,539	74

Source:-Ministry of Education, School Census

2.3 Mean Years of Schooling

The expected years-of-schooling in Sri Lanka in 2019 was 14.1 years, and the mean years of education were 10.6. Thus, the figure regarding the mean years, as shown in Table 3, compares well with countries like Singapore and South Korea that have rapidly moved towards VHHD status in 20-25 years (Gunatilleke, 2015). Admittedly, Sri Lanka's mean number of years of schooling is more than the VHHD range of 10 to 12 years. Still, the HDI rank being low in comparison to the countries shown in Table 3 signifies that Sri Lanka should focus on other factors of education that drive VHHD, such as tertiary education participation, the number of research personnel per million and government education investment as a percentage of GDP (Gunatilleke, 2015).

Table 3: Comparison of Mean and Expected Years of Schooling

HDI Rank	Country	HDI Index	Expected Years of Schooling	Mean Years of Schooling
11	Finland	0.9	19.4	12.8
11	Singapore	0.9	16.4	11.6
23	South Korea	0.9	16.5	12.2
72	Sri Lanka	0.8	14.1	10.6

Source: UNDP, 2020

2.4 The Trend in Secondary School Enrolment by Gender

The Gross Enrolment Ratio (GER) has improved from an initial value of 96.9 in 2010 as shown in Table 4. (GER is the ratio of the total enrolment in the school segment to the total population of the age group officially recognised as pertaining to school segment). A World Bank report compiled in 2018 indicates the thinking of parents that females in South Asia would require education for finding jobs or get married. In contrast, boys were perceived to become more independent, explaining the success behind these results.

Table 4: Trend in Secondary School Gross Enrolment Ratio from the Year 2010 to 2018

Year	Gross Enrolment Ratio % - Female	Gross Enrolment Ratio % - Male	Gross Enrolment Ratio % - Total
2010	100.0	98.0	96.9
2011	101.8	97.1	99.0
2012	101.8	97.2	99.5
2013	99.3	96.0	99.5
2016	100.5	96.0	97.6
2017	100.5	96.0	98.0
2018	102.6	98.0	100.0

Source: UNESCO, 2021

2.5 Comparison of Secondary Gross and Net Enrolment Ratios (GER, NER) of Sri Lanka with Selected Countries

NER is the number of students of the official age group for a given level of education who are enrolled in any level of education, expressed as a percentage of the corresponding population (www.uis.unesco.org). The Secondary GER and NER figures for the selected countries are given in Tables 5 and 6. Again, it is seen that the performance of Sri Lanka compares well with the Secondary GER and NER of more developed countries.

Table 5: Comparison of Secondary Gross Enrolment Ratio (GER) with the Selected Countries

Country/Yr.	2011	2012	2013	2014	2015	2016	2017	2018	2019
Sri Lanka	98.9	99.5	99.5	--	--	97.6	98.	100.3	--
Finland	108.1	108.2	144.3	146.4	150.	152.2	153.9	154.8	--
Singapore	--	--	--	--	--	107.9	107.6	105.8	--
S. Korea	96.9	97.8	99.4	99.8	100.	100.5	100.3	100.3	--

Source: UNESCO, 2021

Table 6: Comparison of Net Enrolment Ratio (NER) with selected countries

Country/Yr.	2011	2012	2013	2014	2015	2016	2017	2018
Sri Lanka	85.3						89	91
Finland	93.5	92.9	94.5	94.6	85.3	95.9	96.1	96.7
Singapore						99.5	99.8	99.3
S. Korea	95.6	96.4	97.8	98.2	97.7	98.0		

Source: UNESCO, 2021

2.6 Numbers of Students Qualifying for University Admission

The positive feature of increasing numbers qualifying for university admission through the competitive GCE (A/L) examination for the three recent years is indicated in Table 7. Considering that the tertiary education achievements are significant for VHHD, the status of Sri Lanka has to be noted.

Table 7: Numbers of Students Qualifying for University Admission at the GCE (A/L) Exam.

Year	Number who sat GCE(A/L) Examination	Number Qualifying for University Admission	Percentage Qualifying
2017	206,530	130,421	64
2018	218,191	141,172	65
2019	235,550	154,905	66

Source: TVEC, 2020

2.7 Current Status of University Admissions and Graduate Output

The number of students admitted to the university in 2018/2019, by A/L Stream and Gender is given in Table 8. It has to be noted that the student number in the non-arts streams is double that of the Arts streams. This can be regarded as a positive feature regarding employability and enhancing incomes, thereby contributing to VHHD. However, it is evident that arts graduates seemed to be unemployed for a long time as they anticipate a government job with more stability than the private sector and the eligibility for a pension

(auditorgeneral.gov.lk). The study shows that broad employment opportunities are not available for Arts graduates in the private and public sectors.

World Bank (2011) identified Sri Lanka as one among the top five emigrating countries of tertiary-educated persons in South Asia. This needs to be considered when taking into account the numbers pursuing tertiary education.

Table 8: Percentage of University students by A/L stream and Gender for 2018/2019 Admission Year

A/L subject stream	Total Students	Total Students %	Male	Male %	Female	Female %
Arts	10,400	32.6	1,701	16.4	8,699	83.6
Commerce	6,020	18.9	2,004	33.3	4,016	66.7
Physical Sciences	5,707	17.9	3,978	69.7	1,729	30.3
Biological Sciences	7,014	22.0	2,164	30.85	4,850	69.2
Other	385	1.2	216	56.1	169	43.9
Engineering Technology	1,361	4.3	1,156	84.9	205	15.1
Biosystem Technology	994	3.1	256	25.8	738	74.3
Total	31,882	100.0	11,476		20,406	

Source: University Grants Commission, 2020

2.8 Increase in Numbers Obtaining National Vocational Qualification (NVQ) Certificates by Various Tertiary-Level Vocational Education Providers

There are several providers of tertiary level vocational education in Sri Lanka. Those listed in Table 9 as providers of tertiary level vocational education are:

- Department of Technical Education and Training (DTET)
- National Apprentice and Industrial Training (NAITA)
- Vocational Training Authority (VTA)
- National Youth Service Council (NYSC)

In addition, there are many private sector providers of vocational education.

The high and six-fold increase in numbers obtaining NVQ certificates from 2010 to 2019 is indicated in Table 9. The percentages of those obtaining NVQ Certificates from the same agencies are given in Table 10. This increase will enable the target of 30% of the working population in Sri Lanka to possess tertiary education by 2025 as per VHHD targets (Gunatilleke, 2015).

Table 9: Numbers obtaining NVQ Certificates from the Year 2010 to 2018 by Agency

Year/ Institute	2010	2011	2012	2013	2014	2015	2016	2017	2018
DTET	1,225	1,607	1,316	2,932	3,481	4,171	4,169	6,104	8,818
NAITA	3,546	3,998	4,566	6,085	6,196	11,787	11,182	8,798	13,755
VTA	4,883	7,445	7,139	6,262	7,711	10,484	17,517	23,890	20,810
NYSC	350	424	534	656	720	1,244	1,957	1,219	1,780
Private	3,227	3,098	4,534	6,920	10,438	16,462	12,192	25,201	15,987
Total	13,233	16,572	18,111	22,855	28,546	44,148	47,017	65,212	61,150

Source: TVEC, 2020

Table 10: Numbers by Percentage Obtaining NVQ Certificates from the Year 2010 to 2019 by Agency

Year/ Institute	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
DTET	09	10	07	13	12	09	09	09	14	14
NAITA	27	24	25	27	22	27	24	24	23	15
VTA	37	45	39	27	27	24	37	37	34	33
NYSC	03	03	03	03	03	03	04	04	03	03
Private	24	19	25	30	37	37	26	39	26	36

Source: TVEC, 2020

3 Institutional Aspects of the Provision of Prerequisites and Attributes for VHHD

As indicated above, the provision of prerequisites and attributes for VHHD involves several institutions, including the school system, the university system, various other tertiary education systems, job-related education training systems, and institution-affiliated research units. Because the proper functioning of these institutions affects the delivery of prerequisites and attributes for VHHD, this aspect is also discussed in this study.

3.1 The School System

The aspects of the school system needing attention are indicated below.

3.1.1 Structure of School Education in Sri Lanka

Sri Lanka has a 5: 4: 2: 2 structure of school education, with five years of primary schooling in Grades 1 to 5; 4 years of lower secondary schooling in Grades 6 to 9; 2 years of upper secondary schooling in Grades 10 to 11 and 2 years of collegiate Education in Grades 12 and 13. The upper secondary ends with the GCE (O/L) examination. However, pupils who satisfy specified qualification criteria are permitted to enter the Grades 12/13 collegiate sector.

3.1.2 Diversity of the school system

It must be recognised that any school-level venture to meet future VHHD needs must be undertaken in a large, diverse school system with a current strength of 10,165 schools and 246,592 teachers. A major indicator of diversity is the school size by the number of pupils. While there are schools having pupils exceeding 4000, there are several thousand schools with fewer than 100 pupils. The numbers of schools by ranges of pupil numbers are given in Table 11.

Table 11: School size by Number of Pupils

Pupil Population	Number of Schools
1 – 50	1,468
51– 100	1,498
101 – 200	2,152
201 – 500	2,738
501 – 1000	1,378
1001 – 1500	407
1,501 – 2000	209
2001 – 3000	209
3001 – 4000	74
More than 4000	32

Source: School Census 2019

It is recognised that the required reach of schooling to even the smallest community may require that schooling be provided regardless of the resulting small numbers of pupils. But in Sri Lanka, this phenomenon is not entirely a result of the need to reach the very small communities. Small schools are widespread and even exist in the neighbourhood of large schools. The provision of sufficient teachers for the specified range of complex subjects is often ignored as it is not feasible. These small schools, usually with inadequate numbers of qualified teachers and hardly any extra-curricular activities, cannot be expected to provide the required prerequisites and attributes for VHHD.

3.1.3 School classification and numbers of schools and pupils

Schools are mainly classified according to the highest category of grades of the school structure indicated in Table 12. In 2019, there were 10,165 government schools, out of which 373 were national schools and 9,792 provincial schools. The designation as type 1AB results in higher prestige for the schools. With prestige, some measure of choice in the admission of pupils and getting a better pick in the selection of qualified teachers is evident. The types and numbers according to the last school census of 2019 are seen in Table 12. The Type AB are the larger schools with better extra-curricular facilities, which are also contributory to HHD.

Table 12: Schools classified by Type

Type of School	Number	Pupil Numbers
1AB (Schools having Science stream A/L grades)	1,012	1,570,177
Type 1C (Schools having A/L grades but not science streams)	1,899	1,055,562
Type 2 Schools (Schools having secondary grades & no A/L grades)	3,225	760,957
Type 3 Schools (schools having primary grades only)	4029	674,957

Source: School Census 2019

3.1.4 Subjects taught in the collegiate segment of the Type 1 Schools

Science-related subjects at GCE (A/L) are only taught in the Type 1AB schools. Commerce related subjects are also mainly conducted in 1AB type schools. The larger Arts streams are also found primarily in the 1AB schools. The new subjects of Biotechnology, Engineering technology and the Vocational subjects are also taught in the 1AB schools. Learning Arts subjects is the only option remaining for pupils not satisfying the criteria required to choose other subjects at A/L. (Some select Arts subjects simply because it is the only stream available in the school.) However, as shown in section 2.7, arts graduates' employability will be far less than other streams and will not be a driver of VHHD.

In 2019, out of the 305,427 students who sat the GCE (O/L) examination, 225,539 or 73.8% qualified to enter the Advanced Level grades. In total, there were 411,101 students in the A/L classes in 2019 (Table 14). These students by subject streams were: Arts 43.3%, Commerce 20.1%, Physical Science 11.8%, Bio-Science 10%, Engineering Technology 7.3%, Vocational 3%, Non-Specified 0.3%. The new streams, Bio-Technology, Engineering Technology and Vocational, aim at vocational knowledge for employment (Annual Census of Schools, 2019).

3.1.5 International schools

Despite efforts to set up an equitable system through the free education scheme and almost total control of education by the state, the former prestigious denominational schools remained the core of an elitist system. There was a very high demand for admission to these schools.

The legislation under which the government took over the denominational schools did not permit new schools for school-age pupils by any agency other than the government. This legal restriction was cleverly overcome in the late seventies by allowing schools to operate for school-age pupils by licenses obtained from the Ministry of Commerce as commercial enterprises. The limitation to provide education to school-age pupils only through the national languages was also overcome, and these schools gained an additional advantage.

This system of schools increased to meet the demand for superior schooling and English as the medium of instruction and is now an important segment of school education. Moreover, education through the English medium also provided the opportunity for the international school students to secure the expanding opportunities for entry to the university level and

other tertiary level education in Sri Lanka and abroad. As such, the education provided by the international schools, although on a smaller scale than the government schools, has to be regarded as an essential sector providing the prerequisites for VHHD in Sri Lanka.

The standard of English, use of internationally accepted syllabi enabled the ability to pursue higher studies in many global universities and global employment subsequent to studies in international schools.

3.1.6 Extended use of English as a Medium of Study and Instruction

The Ministry of Education made an experimental venture into English as a medium of study and instruction around 2002. Pupils were given the option of being instructed and examined in the English medium while remaining in the classes designated as national media classes.

The World Bank supported this venture. The program caught on well, particularly in the provinces. The problem of finding teachers was solved by using the national language medium, particularly science and mathematics teachers, to teach in the English medium with combined national languages. English subject teachers could not be used because they did not have expertise in subjects such as science.

The program caught on quite well. The pupils sat the GCE (O/L) and GCE (A/L) examinations in the English medium. Their performance was better than those who sat the examinations in Sinhala medium and Tamil medium. The pupils improved their knowledge of English too and became confident in the use of it. Pupils from districts such as Ampara and Matara actively participated in discussions in English in seminars held at the Ministry of Education.

This program is continuing and needs to be more strongly supported. However, from the VHHD perspective, the contribution of this venture can be significant as knowledge of content in English studied up to tertiary education will lead to better employability and the ability to pursue further studies in English.

3.1.7 Pre-school Education

Pre-school Education in Sri Lanka began as a privately initiated venture as "Montessori Schools". It began to expand by the seventies. It became a subject under the Ministry concerned with Children and Women. However, it is still a private venture catering to most pre-school children. Therefore, although pre-schooling provides a head start to subsequent formal schooling, the topic is excluded from this study.

3.1.8 Non-formal education

Non-formal education is provided for those who skipped school and otherwise would have dropped out. Therefore, this very small group is also excluded from this study. This group usually pursue home-schooling but may or may not pursue examinations if parents feel it will

overburden the student. Such students may get involved in family businesses or pursue sporting or extra-curricular talents as vocations.

3.1.9 University Education

Pupils may enter the universities after satisfying selection criteria related to the GCE (A/L) examination and succeeding in the highly competitive University admission process. In 2018 around 35,000 were admitted to the universities, although 141,172 satisfied the university entrance qualification criteria (Annual Census of Schools, 2019).

3.1.10 University Education System including Post-Graduate Education

The University of Ceylon, as a state institution granting degrees, was established in 1943. Since then, university education has expanded with the establishment of the major universities in Colombo, Peradeniya, Kelaniya and Jayewardenepura. As a result, the universities came under a separate Ministry of Higher Education. At the same time, the University Grants Commission (UGC) remained the state agency for funding the universities and admission of pupils to the universities.

An important landmark in the expansion of the university system was establishing the Open University of Sri Lanka (OUSL) in 1979. The Open University initiated a process of delinking university education as a continuation of school education beyond the Advanced Level. OUSL started several non-degree and degree level higher education programs under its open scope. OUSL remained a state university under the Ministry of Higher education and UGC. Students over a stipulated age were permitted to join the degree programs under a liberalised admission scheme. Currently, more than 20,000 students are enrolled in OUSL.

The continuing demand for university admissions was also addressed by instituting Provincial Universities such as the University of Jaffna. The University of Ruhuna, based in Matara and its Medical College established in Galle, was instituted in the 1980s. This was followed by universities sited in Kurunegala as Wayamba University and in Anuradhapura as Rajarata University.

Other universities such as those in Belihul Oya, Bandarawela, and Batticaloa were also instituted. A notable event in universities setting up was the University of Performing Arts in Colombo based on the existing Colleges of Art, Music and Dancing and Sagara University for Ocean-based studies in the Southern Province. In addition, a University of Higher Technical Education linked to Technical Schools coming under the Technical and Vocational Education Commission (TVEC) was established.

Currently, there are about 20 universities, but the annual admissions remain restricted to around 35,000. Therefore, the interest in these vocational education courses may not be at a desirable level which may explain why the ADB quoted the World Bank citing that vocational training graduates secure 30% employment, stressing the insufficiency of on-the-job training and skills required by employers, which could be the reason for low enrolment

3.1.11 Legal Education

The Law College, also established in the 19th century, remained a licentiate for the legal profession. Further professional recognition was obtained through law education and practised mainly in the U.K. The Law College functions as a separate institution under the Ministry of Justice, while there are law faculties in the Colombo and Open universities.

3.1.12 Technical Education

The Ceylon Technical College, also established in the 19th century, remained a certificate-granting institution for a range of technical expertise and presented students with London university degrees. The University of Ceylon began granting Engineering degrees in the fifties with the establishment of the engineering faculty.

There was a separate system of Junior Technical Colleges and Senior Technical Colleges under the Ministry of Education beginning in the sixties.

In addition, there is a provincial-based system of Higher Technical Colleges and University of Vocational and Technical Education (Univotech) in Ratmalana, all coming under a separate Technical and Vocational Education system.

3.1.13 Non-university Tertiary Education

This categorisation of tertiary education is somewhat amorphous, the boundaries being not quite distinct. It is considered the third stage of secondary education, with the first two stages considered coming within school education. Nevertheless, tertiary education may be defined as further education requiring advanced level qualifications as an entry qualification.

Tertiary Education has been recognised as integral to socio-economic development and has been included as U.N. Sustainable Development Goal 4 (SDG-4), ensuring lifelong learning for all. In addition, post-school advanced level or post matriculation level education has been available for some time, particularly in the technical, surveying, and paramedical fields such as medical laboratory technology.

The rapid growth of tertiary education is, however, of recent origin. The severe restrictions of admission to the universities of Advanced Level qualified students would have helped expand tertiary education, particularly by diverting well-qualified students to non-university tertiary education. Even in traditional technical education, courses leading to National Vocational Education (NVQ) levels 6 and 7 may come within tertiary education.

The expansion of tertiary education was greatly assisted by state or state-related institutions such as the Open University, National Institute of Business Management (NIBM), Schools of Technology, National Colleges of Education, Institute of Computer Technology, Institutions such as the Ceylon German Technical Training Institute, Sri Lanka Institute of Information Technology (SLIIT), and professional associations such as the Sri Lanka Institute of Chemistry. In addition, the private sector provides a considerable number and variety of tertiary

education. Many of these are affiliated with foreign universities and institutes of tertiary education.

3.1.14 Public Administration related Institutions of Further Education

Several Government Departments have institutions to upgrade the abilities of public servants. The leading institution is the Sri Lanka Institute of Development Administration (SLIDA). Sometimes diplomas are granted. These are aimed at improving the productivity of public servants.

3.1.15 Government agency related Research Institutes

Government agency related research institutions, such as the Tea Research Institute, the Rubber Research Institute, the Coconut Research Institute, the Agrarian Institute of Research, and the Paddy Research Institute, come under this category.

3.1.16 Colleges of Education

There are several post-secondary education-related Colleges of Education for upgrading the qualifications of educational personnel coming under the Ministry of Education, providing diploma level education. Several hundred teachers are involved in this furthering of their education. The diplomas are granted with the collaboration of the National Institute of Education (NIE).

3.1.17 National Institute of Education (NIE)

The National Institute of Education (NIE) provides various diplomas and degrees in subjects related to education. The National Institution Act provides NIE with powers to grant degrees at the first level and post-graduate level.

4 Paucity of Prerequisites and Attributes concerning VHHD

The current situation, which indicates a considerable paucity of prerequisites and attributes, is considered here. The direction of the strategy regarding these aspects may require a serious examination of each aspect separately and sometimes collectively and then recommend reforms needed to redress the problem. Sometimes the strategy would be to mitigate the negative aspects.

4.1 Current Comparative Status with Regard to Human Development Index (HDI)

Table 13 provides the HDI values for Sri Lanka and the selected countries. Sri Lanka's rank in the complete list of countries is 72, which is relatively low. The indication is that Sri Lanka needs much improvement in this respect.

Table 13: Comparative HDI Index of selected countries from the year 1990 to 2019

Rank	Country/Year	1990	2000	2010	2014	2015	2017	2018	2019
11	Finland	0.790	0.864	0.916	0.928	0.930	0.935	0.937	0.938
11	Singapore	0.721	0.821	0.909	0.976	0.931	0.933	0.936	0.938
23	South Korea	0.732	0.823	0.889	0.904	0.907	0.912	0.914	0.916
72	Sri Lanka	0.629	0.691	0.754	0.773	0.776	0.775	0.779	0.782

Source: UNDP 2020

4.2 Enrolment by Subject Stream in the Senior Secondary Upper (Grades 12/13)

As indicated in Table 14, the enrolment by a subject group is still dominated by the Arts stream. This feature taken in isolation should not be considered a weakness, but only in the context indicated below. Additional qualifications for the GCE (O/L) examination, such as credits in mathematics, are not required for admission to the GCE (A/L) Arts stream. Therefore, admission to the Arts stream is most often not owed to exercise of any options by pupils. Thus, this situation could be improved either by better / more teaching of mathematics in the upper and middle school so that more students can join the science-related streams or by making the Arts stream a worthy choice concerning VHHD. Nevertheless, the trend towards high enrolment levels in the science and commerce streams is a positive factor. The enrolment in the newly introduced vocation related streams of Engineering Technology and Biosystem Technology is also a positive factor.

Table 14 Enrolment in Senior Secondary Upper (12/13) Grades by A/L Subject Stream- 2019

Category - Stream	Total Students	% Of total Students %	Male Students	Male %	Female Students	Female %
Bio Science	44,219	10.8	12,884	29.1	31,335	70.9
Physical Science	45,765	11.1	28,568	62.4	17,197	17.6
Arts	177,857	43.3	59,248	33.3	118,609	66.7
Commerce	82,559	20.1	39,900	48.3	42,659	51.7
Bio-Technology	17,116	4.2	7,724	45.1	9,392	54.9
Engineering Technology	30,130	7.3	26,067	86.5	4,063	13.5
Non-Specified	1,316	0.3	597	45.4	719	54.6
Vocational	12,199	3.0	7,584	62.2	4,615	37.8

Source: School Census 2019

4.3 Low Rate of Admission of Qualified Students to the Universities

Higher enrolment in universities alone would provide a boost to the prerequisites and attributes related to VHHD. But the severe restriction of admission to the universities is a roadblock to this desire for further study. The entrance to all universities is about 35,000, although the number qualifying is as large as 4 to 5 times the number admitted.

The situation is illustrated by the figures given in Tables 7 earlier and Table 15. Many of these students are unreasonably rejected and enter the tertiary education sector, while some enter universities abroad or graduate through private sector institutions. Proceeding beyond the GCE (A/L) is considered by most school pupils as a recurring event.

The large numbers that qualify to enter the universities are evidence of this determination. Although they had performed well, most students repeated the GCE (A/L) examination to get admission to universities. Therefore, the fact that the school pupils do not regard the completion of schooling up to GCE (A/L) as the terminus of their career as a student can be well utilised to improve prerequisites and attributes related to VHHD.

Table 15: Numbers of Students Qualifying for University Admission and Numbers Admitted

Year of A.L.	Year of Admission	Number Qualifying	Number Admitted	Number Admitted as a % of No. Qualifying
2010	2010/2011	142,516	22,016	15.5
2015	2015/2016	155,550	29,055	18.7
2018*	2018/2019	167,992	31,881	19.0

Source: UGC 2015/ UGC 2020 (Provisional)

4.4 Total Numbers of Students Admitted to the Universities and the Graduate Output

The total numbers of students admitted to the universities and the graduate output from 2015 to 2019 are given in Table 16. The low university enrolment and graduate output contribute to the paucity of prerequisites and attributes related to VHHD.

Table 16: Undergraduates Admitted and Graduate Output of Universities

Year	Number Admitted	Graduate Output
2015	25,676	16,771
2016	29,083	18,570
2017	30,668	19,062
2018	31,451	15,597
2019	31,902	17,039

Source: UGC 2015/ UGC 2020

4.5 Learning Adjusted Years of Schooling (LAYS)

The relatively high figures of expected years of schooling are another positive feature in Sri Lanka. Yet expected years of schooling in itself cannot be regarded as a measure of the quality of learning. Therefore, Learning Adjusted Years of Learning (LAYS) was introduced in 2018 to consider the quality factor. The related index is calculated by multiplying the expected years of schooling by the ratio of the most recent harmonised test scores to 625 (Fulner et al., 2018). Accordingly, a country that scores well in the adjusted test would have the expected years of schooling as the LAYS figure. Table 17 gives a comparison of LAYS for the countries selected as the sample in this study. For example, although Sri Lanka has high expected years of schooling of 13, the LAYS figure is only 8.5.

Table 17: Difference between LAYS and EYS

Country	Expected Years of Schooling (EYS)	Learning Adjusted Years of Schooling (LAYS)	Difference EYS_LAYS
S. Korea	13.6	11.7	1.9
Singapore	13.9	12.8	1.1
Finland	13.7	11.7	2.0
Sri Lanka	13.0	8.5	4.5

Source: World Bank, 2020

4.6 Population with Tertiary Education

It is seen that the young population, regardless of the roadblock caused by the restriction of admission to the universities, proceeds to enter other available tertiary education. The continuing but slow increase is indicated in Table 18. It has to be noted that female related figures are consistently and considerably higher. Sri Lanka lags far behind the other selected countries as seen in Table 19. The reason has to be investigated. High achievement in Sri Lanka in senior secondary enrolment likely results from free education. It has to be also noted that entry to tertiary education in large numbers is a recent phenomenon. Further, unlike in school education, enrolment opportunities are more significant in the private sector.

Table 18: Gross Enrolment in Tertiary Education in Sri Lanka (same age group)

Year	Gross Enrolment	Female %	Male %
2011	15.2	19.1	11.2
2012	17.1	21.0	13.1
2013	18.9	22.9	14.8
2014	19.2	21.2	16.8
2015	19.8	23.9	15.5
2016	18.8	22.9	14.7
2017	19.0	22.8	15.1
2018	19.6	23.4	15.8
2019	21.1	26.0	16.2

Source: UNESCO, 2021

Table: 19 Tertiary Education: Gross Enrolment ratios in the Selected Countries

Country/Y r.	201 1	2012	2013	2014	2015	2016	2017	2018	2019
Sri Lanka	15.2	17.1	18.9	19.2	19.8	18.8	19.0	19.6	21.3
Finland	94.9	92.9	91.0	88.9	87.7	87.0	88.2	90.3	--
Singapore	--	--	--	--	--	83.9	84.8	88.9	--
S. Korea	100.	97.4	95.6	94.9	94.3	94.0	94.3	95.9	--

Source: UNESCO, 2021

As per the Institute of Policy Studies (2012), the low university enrolment rates are caused by limited investments in education by the public sector (6% of GDP target in 2012 as per the research conducted by the National Education Commission in 2014; historically, the investment has been 2.5% of GDP up to 2010) resulting in around 17% of candidates sitting for Advanced Level examination qualifying for state university education. However, this figure is much higher in lower and middle-income countries (23% and 43% respectively in 2009).

5 Improving the Status of Prerequisites and Attributes Concerning VHHD

The desk review found limitations concerning several prerequisites and attributes concerning VHHD. Strategies and actions that can be taken to improve the status of these prerequisites and attributes are suggested in this section.

5.1 University Education: Access, Quality and Employability

5.1.1 Access

Enrolment ratios in education show that primary and secondary education access is high (see Tables 5 and 6) and comparable to upper-middle-income countries' enrolment ratios. However, the Gross Enrolment Ratio in tertiary education seems to be very low (see Table 15) due to the lack of space in the state universities.

This has made the admission process highly competitive. Students who are qualified but fail to secure a place in state universities choose to study in higher education institutes such as SLIATE or non UGC affiliated professional institutes, private institutions, and overseas higher education institutions (Asian Development Bank, 2016).

According to the Asian Development Bank (2016, p.30), despite increasing demand, private sector participation in higher education continues to be restricted because of the misguided view that allowing more of it would deny low-income students the opportunity for higher education. To support the low-income students, the government now provides an interest-free loan scheme to study in institutes recognised under Section 25 of the University Act No 16 of 1978. Such measures have to be intensified to expand opportunities for all qualified students.

This study suggests that the government needs to increase higher education opportunities for all eligible students by expanding private sector participation in education and facilitating opportunities for distance education at an affordable cost for students who want to pursue higher studies.

5.1.2 Quality

The quality of learning provided in universities is also an essential prerequisite for VHHD. Physical and human facilities available in universities affect the quality of learning provided. It is noted that facilities available in state universities in Sri Lanka are of varying quality. Some existing universities were set up without adequate preparation (Secretariat for Senior Ministers, Sri Lanka, n.d.).

The National Human Resources and Employment Policy of the Government of Sri Lanka states that the government's recurrent and capital expenditure on higher education is low by international standards and by Sri Lanka's own historical standards. As a result, there was inadequate and slow build-up of modern facilities within universities and training of human resources in employment therein has been unsatisfactory.

In its Human Capital Development Report (2019, p. E23), the World Bank states that the next stage of higher education development can draw upon three global waves: mission differentiation, internationalisation, and the development of the private sector.

According to mission differentiation, one set of universities, mainly drawn from among newer higher education institutions in the provinces of Sri Lanka, could be designated as teaching universities. Its primary mission is to focus on excellence in teaching and learning.

Another set of universities, mainly drawn from older and more developed, could have an important mandate for research and innovation and the commercialisation of innovations in addition to their teaching role.

The third set of universities could emphasise their teaching functions, community services and regional development. In its Human Capital Development Report (2019), the World Bank opines that the mission differentiation can strategically develop provincial universities and regional economies.

It also proposes that an incentive system can be designed to promote high-quality teaching and learning in universities designated as centres of teaching excellence.

According to the Office of Higher Education Commission (reported by Sinhaneti, 2011), each sub-system would serve national priorities and strategies as well as address global, national, and regional demands with goals to enhance the country's competitiveness and to serve as prime movers for the development of real sector workforces, manufacturing and service sectors.

5.1.3 Employability

Higher education today has been widely criticised for its inability to meet the demands of the labour market. This problem is more prominent in respect of graduates of the faculties of arts,

humanities, social sciences and commerce (National Human Resources and Employment Policy) where the intake is also high.

This shows that there is no close coordination between the supply of graduates and the demand for them. Moreover, according to Human Resources and Employment Policy, the national university degree programmes have not been changed, improved and modernised to meet the modern requirements of a globalising economy. As a result, they are not imparting social and other soft skills that which private sector values.

The Sector Assessment: (summary) Education of the Science and Technology Human Resource Development Project (Asian Development Bank, 2018) reveal that even technology and engineering graduates need to be equipped with interpersonal skills.

To overcome this issue, university courses should be redesigned to suit the requirements of the market economy. According to the government's development policy framework, 2011-2020 Information Technology (I.T.) would have the highest demand of employees in the national economy (Asian Development Bank, 2016). Other occupations are medical and health science and beauty culture. Therefore, higher education should cater to these demands.

Further, it is important to build a linkage between academia and industry to improve the employability of graduates produced by state universities. University Business Linkage (UBL) Cells can promote this linkage through research and development activities.

Further, the school curriculum should be revised to include content related to the development of generic and soft skills enabling students to enter higher education with positive attitudes that employers greatly value. As a result, universities can further develop them.

5.2 Technical and Vocational Education

Lack of vocational training opportunities for the labour force is another aspect that adversely affects VHHD. Apart from the public sector technical and vocational training providers, the Private sector and NGOs also provide technical and vocational training. However, the sector assessment carried out by the World Bank Group (2017) reveals that a rigorous and supply-driven technical and vocational education and training (TVET) system with minimal involvement of the private sector undermines the efficiency and effectiveness of the skills supply.

The World Bank Group further states that a heavily supply-driven TVET system does not consider either the skills demanded by employers or the needs of the informal sector. To improve vocational education skill development, institutions should be expanded and equipped with human and physical resources. Correspondingly, better coordination among the vocational training agencies is needed to match the labour market's demand. The World Bank Group has suggested an empowered inter-ministerial skills development committee that would represent the entire spectrum of public and private providers, employers, financing agencies and planners to help address this issue.

Most students in Sri Lanka stay in school until they sit for GCE A/L. However, only a small proportion of students who sit for GCE A Level enter University. As a result, these students enter the labour market without any training or knowledge of their expectations. Developing a broad-based education at the upper secondary level (GCE A/L) would help these students transition smoothly from school to the labour market.

In addition, others drop out of school at various levels. They also join the labour market ready to engage in any job. Some of them become skilled workers with experience, and others engage in odd jobs for low wages. They too are contributors to HDI. Therefore, measures should help them improve their status by making more avenues available for them to become skilled workers.

6 Comprehensive Strategies and Courses of Action Needed to Improve the Status of Pre-Requisites and Attributes

6.1 Capacity to Develop a Knowledge-Based Society

In the paper titled, "A Vision for Sri Lanka 2025 & 2035, Pre-Requisites for Very High Human Development of 2015, Dr Godfrey Gunatilleke, the constituents of VHHD relevant to general education were indicated as;

1. Educational attainment of the population.
2. Participation rates in secondary and tertiary education.
3. Capacity to develop a knowledge-based society.¹¹

Previous sections numbering 1 to 5 of this study were devoted, among others, to indicate the relationship of Pre-Requisites and Attributes of VHHD to the educational attainment of the population and participation rates in secondary and tertiary education. Therefore, this section of the study will consider aspects relevant to the capacity to develop a knowledge-based society. In particular, the emphasis is on the curriculum. Here the curriculum will be regarded as the total experiential exposure of the student population to organised educational activities. Examinations will also be considered a component of the continuum covering teaching-learning assessment.

6.2 School Curriculum Development and School-based Assessment (SBA)

Note: Some of the proposals under this head, although very important, are given in outline form so as to base the important recommendations.

SBA is taken here under the same package because learning, teaching and assessment are closely interlinked in education.

School Curriculum Development comes under the National Institute of Education (NIE). The school-based assessment was introduced by the Department of Examinations in 1989 as part of GCE (OL) and later extended to the AL grades after a major revision. Curriculum development is not currently regarded as overtly involved in providing the prerequisites and

¹ Gunatilleke, G., (2015). A vision for Sri Lanka 2025 & 2035, Pre-Requisites of Very High Human Development.

attributes of VHHD. It is considered entirely as a school-related subject. Curriculum revision comes under an 8-year cycle involving the entire process leading to textbook writing, teachers' in-service education, and implementation in the classroom. In its first report of 1992, the National Education Commission prescribed a set of concerns that should govern school curriculum development, but NIE has ignored that.

The school curriculum is one of the areas of education needing the most radical reforms. This study will concentrate on secondary and advanced level grade curricula. The school-based assessment (SBA), as revised and initiated at the beginning of the decade beginning in 2001, has to be re-introduced as part of the curriculum development package. The school curriculum comes under four different segments; the primary grades 1 to 5, the junior secondary grades 6 to 9, the senior secondary or OL grades 10 and 11 and the collegiate or AL grades 12 and 13. The treatment of the curriculum is different for each group of grades in recognition of the specific objectives of education relating to the grade group. As the primary level curriculum was well designed in the seventies and adequately revised in the eighties and nineties, it may be sufficient to revise the primary school curriculum using the earlier curricula as the basis. Therefore, the reforms needed for the other three segments are briefly indicated below.

An important activity suggested under curriculum reforms is the identification of the specific VHHD related prerequisites and attributes for the three segments separately, as well as those common to all three segments of the curriculum. In this respect, the prerequisites and attributes applicable to the three groups may be identified first. The applicable selection of prerequisites and attributes as well as the degree of emphasis regarding the identified prerequisites and attributes may be attempted after that.

The content of the three segments may be repeated but at different levels of complexity according to the grade group, with the highest being the Advanced Level (AL) stage. The AL group being the next lower regarding the university undergraduate level, serves as the feeder group to the universities. Hence the subject topic content of the AL segment dovetails to the subject topic content of the appropriate university first-year course. Similarly, the OL content and Junior Secondary Grades (6 to 9) subject are linked. The university subject content can be assumed to be up to date to a large extent owing to the pressure for conformity internationally, particularly in the case of science-related content. Content revision is not considered that important, particularly in the science-related subjects for the purpose of meeting VHHD needs. The case may be different in the case of Arts related subjects. Here too, as indicated below, the use of appropriate teaching-learning modalities is considered more appropriate to satisfy the VHHD purposes.

6.3 Some Specific Considerations for School Curriculum Development and School-based Assessment (SBA) - with specific reference to V.H.H.D.

6.3.1 Reform of the Design of the Curriculum and Scope and Function of GCE (OL) and GCE (AL) Examinations

An initial activity proposed here is to consider, together with amendments, if needed, the list of nine National Goals and set of five Basic Competencies formulated by the National Education Commission in its first report of 1992²

The National Goals proposed were; -

6.3.1.1 National Goals

1. The achievement of a functioning sense of National Cohesion, National Integrity and National Unity
2. The establishment of a pervasive pattern of Social Justice and active elimination of inequities
3. The evolution of a Sustainable Pattern of Living – a sustainable lifestyle
4. Seeking a livelihood and work opportunities, that are at the same time, productive and give avenues of self-fulfilment
5. Participation in human resource development that will support the socio-economic growth of the country
6. Involvement of nation-building activities: learning to care
7. Cultivation of an element of adaptability to change-learn and adapt developing competency to guide change
8. Coping with the complex and the unforeseen, and achieving a sense of security and stability
9. Securing an honourable place in the international community

6.3.1.2 Set of Basic Competencies

1. Competencies in Communication, Literacy, Numeracy and Graphics
2. Competencies relating to the Environment: Social, Biological and Physical
3. Competencies relating to Ethics and Religion
4. Competencies in Pat and Use of Leisure
5. Competencies relating to 'Learn to Learn'

² Quoted from Curriculum Development Component – Study Report- World Bank/IDA funded General Education Project – Sri Lanka, M. J. Perera et al, National Working Group, Sri Lanka Association for the Advancement of Education, 1996.

6.3.2 Design of Curriculum to Emphasize Key Concepts and Big Ideas that characterize each subject³

The next proposal with regard to the design of the curriculum is to identify each subject by its component Key Concepts and Big Ideas and develop teaching/learning accordingly. Examples of key concepts are the Laws of Motion or Newton's Laws in Physics, laws of chemical combinations in Chemistry and the concept of Evolution in Biology. The vast number of other concepts are derivatives of these key concepts. Therefore, the coverage of each subject should be scoped to identify the Key Concepts and Big Ideas¹. The Key Concepts and Big Ideas will form the core of the subject syllabus. The expansion of the syllabus will then be attempted as an exercise in grouping all the syllabus items around Key Concepts and Big Ideas. The Summative Assessment in the form of OL and AL examinations should be designed to test the knowledge and application of Key Concepts and Big Ideas.

In the summative end, of course, the pupil who has gone through the entire content at the end of the course should have a holistic perspective of the subject. Further end, of course, summative testing should relate to the understanding of the subject from a holistic perspective. The current practice of using lesson units, as units for testing, in the preparation of the table of specifications for the summative test needs to be abandoned. Lesson units are like building blocks used to build up the content of a subject. They are like the scaffolding used in erecting a building. The scaffolding has no function when the building is completed.

The understanding of the subject in a holistic perspective is that which has to be carried forward as the outcome of studying the subject and it is this understanding that facilitates the transfer of learning to real-life applications etc. Such an understanding would involve the mastery of the great ideas, basic concepts or key concepts fundamental to the subject. These run through the entire subject and cannot be confined only to lesson units. In Physics the laws of motion are fundamental to the understanding of the subject. It is the acceptance of the first law that external force is required only to change the state of motion and not for motion, which changed our ideas of the physical universe and gave birth to modern science.

Similarly, the understanding of the concept of evolution and the laws of genetics is necessary to comprehend the subject of biology. It is such few key concepts that provide the linking for all the other phenomena exposed and explained in a subject. This proposal is most appropriate to subjects such as science and social studies which are built around a few interlinked concepts.

In the case of mathematics, some modifications may be necessary. In Mathematics, questions could be related to fundamental topics. In the case of languages, the term key concepts may not be appropriate. However, the identification of key concepts should be a necessary exercise in curriculum development.

³ Extracted from Chapter 10 of the ADB Secondary Ed. Modernization Project, Final Report on SBA (See Annex)

6.4 Skills and Ethics of Working in Groups and as a Team

A very important function of the school as an institution is to promote and inculcate attitudes and skills in working as a group or as a team to achieve a common objective. The development of attitudes and skills relating to working in groups and as a team is very important in the workplace and these skills add value to High Human Development as Human Capital. This is particularly true if we regard Human Development as ‘broadening human choices and strengthening human capabilities’ (Sir, Richard Jolly, in the Gamani Corea Lecture, Sept. 2016). Group Project Work and Group Assignments form an important constituent of School-Based Assessment (SBA). Group Project was included in the GCE (AL) Certificate to further promote Project Work. Yet with SBA being downplayed these very valuable aspects of school education are neglected. (For details see Annex on Project Work)

6.5 Concentration on Modalities of Teaching-Learning

In keeping with the considerations indicated above, it is intended to concentrate on identifying modalities of teaching-learning such as the use of project work, which would best promote the development prerequisites and attributes of VHHD. As an initial suggestion the following four skills indicated under the head, “A 21st Century Education”⁴ are mentioned here. The four skills identified by the Coalition Partnership for the 21st Century are;

- Creativity
- Critical thinking
- Communication
- Collaboration.

Another quotation from a presentation titled “A Futuristic Perspective for Reforms in General Education”, made by Sterling Perera for the Sri Lanka Association for the Advancement of Education, in 2017 is given here. This presentation was in response to the proposal of SLAAED at its Council Meeting in June 2017.

The proposal is developed utilizing mainly the ideas expressed in the article in the SLAAED Newsletter of March 2017, titled, “21st Century Skills and the Changing Role of Education” by Dr Harsha Aturupane and the note by Graig D. Gerald in July 2009, for the Centre of Public Education titled, “Defining a 21st Century Education.

Both articles stress skills are most likely to be in demand in a world dominated by automation and robotics. The approach proposed is for education to focus on the skills that new and advancing technology cannot replace. Dr Athurupane lists these as;

- Personal skills for self-management
- making sound judgments and managing risk
- Problem–solving skills to think critically and analyse
- Learning skills to acquire new knowledge

⁴ Quoted from Robinson K. (2011). Out of Our Minds

- Communication skills including reading and writing

Craig D, Gerald states that “some education reformers argue that the traditional curriculum is not enough: schools must provide students with a broader set of 21st. century skills to thrive in a rapidly evolving, technology saturated world”. It can be assumed that the demand will be for social skills for collaboration, teamwork, management, leadership and conflict resolution”

It is seen that the focus on content and updating of content assumed as the function of curriculum development is no longer valid. Therefore, reforms of the Curriculum have to accept the implications in the light of needed skills.

The role of teaching-learning: Some extent of prescribed knowledge-wise content aimed towards providing a basic knowledge base is necessary. The strategy should be to build in the acquisition of prescribed knowledge-wise content into the acquisition of the set of four skills indicated above. The suggested strategy is to utilize project work both individual and group, aimed at the acquisition of needed knowledge to solve problems posed by the project requirements. The approach has to be necessarily multi-disciplinary and not packaged as subjects. The prescribed knowledge-wise content should emerge from the learning strategy. The teacher’s role will need to be drastically changed to suit this strategy. The current scheme of a single teacher linked to a particular class by subject will also become obsolete in this context. There should be changes in the purpose of assessment and certification as well.

6.6 Implementation of Reforms to Develop the Needed Skills

It has to be accepted that the replacement current subject-content based scheme of teaching-learning has to be gradual over a period of several years. The reform could begin with an emphasis on project work together with the associated assessment methodology.

These skills have to be developed in a teaching-learning context. But in a normal classroom situation, there is hardly any opportunity for the development of these skills. It is very much worse in the context of the current learning assessment through examinations. In fact, communication with fellow students and collaboration are punishable offences. Therefore, school Project Work as successfully implemented in the mid-seventies is recommended as a major innovation for developing the above-named skills and for developing the prerequisites and attributes for VHHD. The Project Work scheme introduced in 1976 also had anticipated the following features recommended as ‘Practical Tips for a 21st Century School’⁵

- Invite students to contribute to strategy meetings and decision making
- Create adaptable learning environments suited to different sorts of collaboration and group work
- Encourage students to take ownership of community service programs

⁵ Please see Annex. 4. (VHHD Study Support Material 13.12.2018)

A study made by a UNESCO (Bangkok) study group in 1976 is quoted in detail in Annex 4 in support of this recommendation. A short note on On-site Field Studies Centres is also included to indicate the availability of study modalities similar to Project Work but focused on environmental education. The outcomes of this study is summarised in sub sections below.

6.7 Curriculum – Teaching / Learning – In-Course Assessment /Summative Assessment³

The outcomes of this study by a team of curriculum experts as summarized here provide adequate support for this recommendation. The study was organized by UNESCO/APEID based in Bangkok in 1978 through a Joint Operational Study to document the introduction of Project Work under the Educational Reforms of the 1970s. The study is based on visits to selected sites of 1020, school Projects in several hundreds of post OL classes. Detailed notes of the study of project work in 4 schools visited were included in the study. Project work had taken the teachers and pupils from textbooks to the real world of work. Project work gave ample opportunities to teachers and pupils not only the opportunities to test knowledge derived from textbooks but also the views of their own. The scale of operations was much wider than the classrooms. It included a wide community of 1000 poor families from a Dehiwela slum neighbourhood and the outcomes were extensive. Reforms suggested in this study have been amply proved to be feasible as indicated in the UNESCO Report. The idea of conducting an intensive and extensive study of the problems and needs of a community as a basis for developing project work activities may be an innovation that may have significance to other projects outside the country as recorded in the Report. The pragmatic approach used in the development of the project and the inductive approach used in problem-solving are also noteworthy. The Report also indicated that project work as implemented in 1976 need not require the support facilities of well-endowed schools. The school which provided a world record in community health was a poor school, which educates children in a poor neighbourhood.

The outcomes of the study by a team of curriculum experts are summarised below.

6.7.1 In-Course Assessment –School-based Assessment

This topic is elaborated in the section below.

The curriculum and teaching/ learning should have been re-designed to reflect the availability of SBA. The proposal had been to identify each subject by its component Key Concepts and Big Ideas and develop teaching/learning accordingly.

The build-up of Key Concepts should be assisted by SBA methodologies allowing pupils to participate in the development of the Key Concepts.

6.7.2 Summative Assessment – GCE (OL) and GCE (AL) Examinations

The Summative Assessment in the form of OL and AL examinations should be designed to test the knowledge and application of Key Concepts. This will result in better learning and eliminate the need for cramming and private tuition for OL and AL examinations. It is the need to remember and reproduce a mass of subject-based trivia that support private tuition.

The recommendation is that, most of the questions in an examination such as the GCE (O/L) or GCE (A/L) be based on the key concepts such as Laws of Motion in Physics, Atomic Theory and Laws of Chemical combinations of Chemistry and Laws of Evolution and Hereditary in Biology. The summative examinations should concentrate on the main principles.

6.7.3 Project Work and On-Site Field Studies

The SBA grades are valued by employers as they involve work over a period of time and working as a team in group assignments such as Group Project Work. The practice followed by the Examinations Department earlier, of indicating the name of the Group Project in the GCE (AL) Certificate is recommended because it adds value to SBA by promoting employment skills.

It is recommended that GCE (AL) pupils be required to do only one good group project only during the five terms of the course. This should be based on a real-life topic and multidisciplinary and not be specific subject-based.

6.7.4 Out of Class-Room Study Activities

Such work gives a broader base to teaching-learning. It is recommended that the excellent On-site Environmental Field Studies Centre Programme now supported by ADB in about 40 Centres throughout the country, be given greater recognition and encouragement.

6.8 Collegiate Grades - University Admission

A student has to select 3 subjects from the subjects for the stream- Science, Arts or Commerce for eligibility to apply for university admission. For Science, it is Physics, Chemistry and Mathematics for Physical Science and Physics, Chemistry and Biology for the Biological Sciences stream. A similar requirement is there for the Arts and Commerce streams. The issue is the lack of a choice for students outside the 3 prescribed subjects for the science students.

Most countries prescribe only two stream subjects with a wide choice open for the third subject. In fact, Cambridge University prefers an Arts subject as the third subject for admission to the agriculture classes in the university. This restrictive practice does not permit science students to obtain exposure to liberal arts. The proposal is to insist on only two subjects related to the university course intended for admission as in most countries, while there is a free choice regarding the third subject. This matter was discussed with the universities (FUTA) in 2005 by a committee of the National Education Commission, and all universities except the Moratuwa University agreed with the proposal.

7 Some Noteworthy Features of Developments in Education in Selected Countries

This section examines the Current Education System of Sri Lanka in Terms of the Provision of Prerequisites and Attributes concerning VHHD –Part3.

The intention of referring to the status of progress of school education in countries such as Finland and Singapore is indicated below.

South Korea was indicated at the beginning of this study. The selection of these countries was deliberate to provide realistic targets for the recommended courses of action. South Korea and Singapore are leaders in the field of education in Asia. Finland was selected to provide a possible futuristic goal through a more emancipatory educational methodology. Finland also provides leadership to school education without an externally imposed examination system. Some of the futuristic and emulation worthy practices are briefly indicated below. The information provided below is not by any means exhaustive. The purpose is to indicate that there are many ways to update education to serve current and future needs. The neglect of seizing every opportunity to improve and modernise education may be considered criminal neglect in terms of such neglect's social and economic costs.

7.1 Finland⁶

Finland's schooling and education-related status achievements were indicated in sections 2.3 and 2.5 of this report. The HDI rank of Finland in the year 2020 was very high at 11 compared with 72 as the rank for Sri Lanka. The expected years of schooling was 19.4 and the mean years of schooling were 12.8 compared with the respective figures of 14.1 and 10.6 respectively for Sri Lanka. The Secondary Gross enrolment Ratio (GER) in 2018 for Finland was 154.82 compared with a GER of 100.34 for Sri Lanka. The Net Enrolment Ratio (NER) in 2018 was 96.7 for Finland, while that for Sri Lanka was 91. The Literacy Rate is very high at 99.5% for both sexes.

7.1.1 Structure and System of Education

The structure consists of day care programmes for babies and toddlers, a one-year pre-school (age 6), a nine-year compulsory primary comprehensive school (age 7 to age 16) and a post-compulsory secondary general academic and vocational education and vocational, higher education and adult education. Schools are funded and administered by municipalities. There are a few private schools, but they cannot charge fees and offer selective admission. The state provides curriculum guidelines, but teachers can select textbooks and teaching methodologies. All students learn at least two foreign languages, mainly English and obligatory Swedish. This has given a competitive advantage. Classes are small with at most 20 pupils. Primary and secondary teachers must have a master's degree to qualify as a teacher.

⁶Data and excerpts directly from Wikipedia, Ministry of Education and Culture

7.1.2 Noteworthy Features of School Education

7.1.2.1 Early Childhood Education

Finland accords very high status to Early Childhood Education beginning with day-care and kindergarten stages up to age 7. The stress is on developing cooperation and communication skills regarded as essential to prepare children for lifelong education and formal learning of reading and mathematics. 'Early childhood education emphasises respect for each child's individuality and the chance for each child to develop as a unique person, the need to care about others and to have a positive attitude towards other people, other cultures and different environments. The aim is to enable taking care of themselves, to be capable of making responsible decisions of participating productively in society as an active citizens and to take care of other people who will need their help'⁷ '. To foster a culture of reading, parents of new-born babies are given three books – one for each parent and a baby book for the child – as part of the 'maternity package.'⁸

7.1.3 Basic Comprehensive School (Grade 1 to Grade 9 = Age 7 – 16)

All pupils are expected to learn two languages in addition to the offered school language, Finnish or Swedish. Students in grades 1 through 9 utilise 4 to eleven periods each week, taking art, music, cooking, carpentry, metalwork, and textiles classes. The school atmosphere is relaxed and informal. Outdoor activities are stressed, reading for pleasure is actively encouraged, and Finland produces more children's books than any other country. During the early years of comprehensive school, grading is usually through verbal assessments rather than formal grades. Grades are awarded from 4 to 10 in individual exams, but they are not entered in the school year reports or basic education certificate.

7.1.4 Upper Secondary Education

This stage begins at age 15 or 16, and the students could choose to undergo occupational training to enter a polytechnic or enter an upper academic school to prepare for university studies. Admission to the latter stream is through GPA, academic tests, or interviews. The selection is not rigid, and vocational school students may formally qualify for university admission and vice versa. In the upper academic school, about mathematics, the second national language and foreign languages, a student can choose to study a curriculum from different levels of difficulty. The national matriculation with its entirely percentile-based grading allows objective classification of each student based on mathematics performance.

⁷ Penntile, E., (2007) quoted in Sandy L. R., Education in Finland, *New Hampshire Journal of Learning*. 10

⁸ Hujala, E. (2006). The development of early childhood education as academic discipline in Finland, *Nordic early childhood education research*, Vol 1, No.1

7.1.5 Tertiary Education

The tertiary segment consists of two sectors; the traditional universities and universities of applied sciences. Admission for both sectors is through the high school final GPA. The admission process is merit-based, transparent and objective with the entrance examination consisting of a small number of longer and more complicated questions and as such different from those of other countries.

The focus in universities is research in science and the programs lead to a Master's degree through a Bachelor's degree, which takes around 4 to 5 years, without an entrance examination in between. Polytechnic degrees are generally accepted as university degrees. In universities, membership in the student union is compulsory.

7.1.6 Adult Education

Formal adult education is available for those completing a vocational programme. Open University students can pursue degree courses only after passing with a sufficiently grade a number of determined courses. There is also adult education, also called 'Free-education' aimed at the "multifaceted development of personality, the ability to act in the community and to pursue the fulfilment of democracy, equality and diversity in the society."

7.1.7 National Curriculum Framework

The related education reform which began in 2016/2017 will make it mandatory to introduce 'phenomenon-based learning' alongside subject-based introduction. This shift comes together with other changes that are encouraging the **development of 21st century skills such as collaboration, communication creativity, and critical thinking**. As such Finland is an example of a country that is already implementing "twenty-first-century skills recommended at section 6.5 of this study report.

7.2 Singapore⁹

The achievements of Singapore with regard to schooling and education-related status was indicated in sections 2.3 and 2.5 of this report. The HDI rank of Singapore in the year 2020 was very high at 11 compared with 72 as the rank for Sri Lanka. The expected years of schooling was 16.4 and the mean years of schooling were 11.6 compared with the respective figures of 14.1 and 10.6 respectively for Sri Lanka. The Secondary Gross Enrolment Ratio (GER) in 2018 for Singapore was 105.8 compared with a GER of 100.3 for Sri Lanka. The Net Enrolment Ratio (NER) in 2018 was 99.3 for Singapore while that for Sri Lanka was 91. The Literacy Rate is also very high at 99 % for both sexes.

⁹ Data mainly from Wikipedia and Study Report of Hogan, D., (2014). Why is Singapore's Education System so Successful, and is it a model for the West? University of Queensland

7.2.1 Structure and System of School Education

Singapore has a system of private schools in parallel with the state school system regarding which there is a differing extent of autonomy as regards, curriculum and admissions policy. Citizen pupils cannot enter 'International Schools', without permission from the Ministry of Education. Nearly 20% of the state budget is devoted to education, which includes state assistance for education in private schools. Schooling is compulsory for primary school-age children. Although recognized official languages, English which is the first official language, is the medium of instruction from primary school upwards. Striving to forge ahead which is part of the Singaporean ability driven way of life, has made education too, a highly competitive enterprise, paving the way for a parallel private tuition system. The schools tend to focus on a narrower but deeper form of learning with the highest levels of performance at international tests such as PISA, which has led to Singaporean education being recognized as "world-leading". School education begins with three years of pre-school for children aged three to 6, organized by the private sector. The three stages are named, Nursery, Kindergarten 1 and Kindergarten 2, respectively. Regarding the structure of education, the primary stage of six years is divided into two parts; Primary 1 to 4 and Primary 5 to 6. The first stage is considered as the foundation stage while the second stage is considered as the orientation stage. At the end of the Primary stage at grade 6, all students are required to sit the National Primary School Leaving Examination.

Secondary school education which begins at Grade 7 after the National Primary School Leaving Examination, is a 4 year/ 5 year student ability based course leading up to the Singapore-Cambridge GCE(OL) examination. School pupils enter a 2-year Pre-university or Junior College course leading to Singapore-Cambridge, GCE (A) Level or the International Baccalaureate Diploma, or to a 3-year pre-university course at the Millennia Institute, Entry to the universities is through competitive scores in an English plus 5 subject scheme, while that to the Millennia Institute is through an English plus 4 subject scheme. The Subject choice is limited by way of including a Humanities subject for science courses and a science subject for the non-Science courses. Students who wish to specialize at this stage could select the entry to the Polytechnics or Arts Institutes. Entry to these institutes is also based on subject scores with English plus one 'best subject'.

7.2.2 Noteworthy Features of Education in Singapore

Regarding the structure of education, the primary stage of six years is divided into two parts; Primary 1 to 4 and Primary 5 to 6. The first stage is considered as the foundation stage while the second stage is considered as the orientation stage. Science is taught from Grade 3 which is in the foundation stage. The pupils are streamed according to test scores at the end of Grade 4, according to a scheme called 'subject-based banding', which allows students to select the same subjects at different levels, according to their test scores, at the orientation stage.

There was also a Gifted Education Program (GEP) from 1984. The entry to GEP begins at Grade 3, through a series of tests at Grade 3. GEP aims to “develop gifted children to their top potential and it places a special emphasis on higher-order thinking and creative thought.” They are Primary Schools in the GEP scheme. GEP as such was discontinued in 2008, but in its place, there is the school-based Gifted Education Program. *It is seen that Singapore begins its highly selective and competitive education system quite early in the life of a student.*

At the end of the Primary stage at grade 6, all students are required to sit the National Primary School Leaving Examination (PSLE).

7.2.2.1 Early Childhood Education

As stated earlier, schooling begins with a 3-year pre-school for children aged three to six. The stage is a preparation for formal education, with learning activities pertaining to, language learning, introduction to numbers, oral and written, games, music and outdoor play, as part of the development of personal and social skills. In addition to Mother Tongue, English is also taught

7.2.2.2 Primary Education

As stated earlier, entry to two-stage primary school, foundation (four year) and orientation (two year) is at age 7. The foundation stage is already the beginning of formal schooling, with subject learning including English (the first language) and Science. From the early stages, proficiency in English is given high priority in order to access and utilize the global environment. Pupils also have to choose one of the Mother Tongue languages, where the emphasis is on listening and speaking skills. The subject-based banding of pupils into 3 groups according to ability demonstrated, at Grade 5, which is the orientation stage. The same subjects are taken by the pupils, according to the grading obtained. At the end of Grade 8, all pupils sit the national Primary School Leaving Examination ((PSLE). The PSLE also functions as the selection test for different categories of secondary schools. Particular secondary schools also select students according to their higher abilities even before the PSLE under a separate ‘Direct School Admission Scheme.’

7.2.2.3 Secondary Education

The pupil performance at the PLSE is used to divert them into 3 tracks, Express, Normal (Academic) and Normal (Technical). From 2021, the grouping is into 3 bands, called, G1, G2 and G3, according to the subject based banding scheme. The ‘Express Tract’, is a four year one leading to the Singapore – Cambridge GCE (OL). The 4 year ‘Normal Academic’ track, leads to the Normal (Academic) level examination. These pupils may also utilize the fifth year to sit the GCE (OL) Examination. The 4-year Normal Technical track leads to the Normal Technical level examination. Most pupils, other than those following an International Baccalaureate Diploma course or one leading to an A level examination, are streamed into several streams

with different course combinations at the end of two years in the secondary stage. Participation in Co-Curricular Activities (CCA), is compulsory under secondary education. CCA is a graded activity together with other non-academic activities cumulated throughout a pupil's career in secondary education through a scoring scheme called LEAPS 2.0. Pupils may claim up to two bonus points for entry to junior colleges.

7.2.2.4 Upper Secondary Education

Singapore has expanded post-school education in several ways through opportunities for pre-university education through its network of Junior Colleges, the 3 Centralized Institutions, 5 Polytechnics and the Institute of Technical Education (ITE) with GCE (OL) as the entry requirement. Polytechnics offer a variety of specialized technology-based courses. The Polytechnics and particularly the ITE aims at developing the vocational skills that helped push the notable and much-valued technology base of Singapore's rapid development through its knowledge-based society. Most graduates of Polytechnics continue to pursue further education at universities in Singapore and abroad.

7.2.2.5 University/Tertiary Education

The **meritocracy ideology** which pervades the education policy of Singapore is particularly pertinent to the higher education of Singapore. The plan of the government (of 2002) is to make Singapore a '**Global Schoolhouse**'. These policies also reflect on the need for Singapore to evolve its development focus to counteract its lack of natural resources. Singapore has 6 autonomous national universities, with the National University of Singapore (NUS) and the Nanyang Technological University having enrolments exceeding 20,000 students and the Singapore Management University (SMU) has an enrolment exceeding 7,000, all in a country with a population of 3 million. The other 2 universities are Singapore University of Technology, Singapore Institute of Technology, with its university status and the Singapore University of Social Sciences. These universities with their high enrolment and academic excellence have placed Singapore as the country at the apex of those with Very High Human Development (VHHD). In addition, foreign universities such as the University of London has a stake in meeting the high demand for external degrees. Some foreign university programs through private local higher educational institutes, such as the Singapore Institute of Management and Management Development Institute.

7.3 South Korea¹⁰

7.3.1 Structure and System of Education

South Korea follows the 6:3:3, US system of school education, with 6 years of primary, 3 years of junior secondary and 3 years of senior secondary (high) school. The senior secondary schools are divided into academic and vocational schools. In 1995, about 62 per cent of the

¹⁰ Information mainly from: South Korean Education – Case Study – Internet Sources

pupils were in academic schools, while 38 per cent were in vocational schools. A small number attends specialized high schools concentrating in science, foreign languages etc. From senior secondary or senior high, students may join the 2-year college and then proceed to the university. However, unlike in the US, the schools are not all coeducational, with only about ten per cent being so. Even in coeducational schools, the classes are divided mostly into gender lines. But the curriculum is standardized with the same curriculum including technology and domestic science for both boys and girls. The school calendar has two semesters, from March through July and from September through February.

7.3.2 Noteworthy Features of School Education

7.3.2.1 Primary School - Age 6 -11 years

The major objectives of education at this stage, as stated, are to improve basic abilities, skills and attitudes; to develop language ability and civic morality needed to live in society; to increase the spirit of cooperation; to foster basic arithmetic skills and scientific observational skills, and to promote the understanding of healthy life and the harmonious development of body and mind. The primary curriculum includes the nine subjects: - Moral education, Korean language, social studies, mathematics. Science, physical education, music, fine arts, and practical arts, the teaching of English begins in grade 3. Usually, the class teacher teaches all subjects in the curriculum.

7.3.2.2 Junior Secondary School - Age 12 -14 years

The curriculum consists of 12 required subjects, electives and extra-curricular activities. At this stage, unlike in primary school, teaching is done by separate content specialists.

7.3.2.3 Senior Secondary School (High) - Age15 -17 years

The aims of education at the high school level are stated as; to foster each student's personality and ability needed to preserve and strengthen the backbone of the nation; to develop students' autonomy, emotional development, and critical thinking abilities to be brought to bear in and out of school and to improve physical strength and foster a sound mind.

As already indicated in section 2.0 of this study report, the indicators regarding secondary are among the highest in the world. Together with a high HDI of 0.916, South Korea has its Mean Years of Schooling as 12.2, a Secondary Gross Enrolment Ratio of 100.34 (in 2019) and a Net Enrolment Ratio of 98.0 (in 2016). Despite the broad aim of secondary education as stated above, the focus of endeavour is College and University education.

7.3.2.4 Tertiary Education

As indicated above, with its very high Secondary Gross Enrolment Ratio and college entry focus, the entry into the tertiary education segment is very high in South Korea. Although this contributes to the high HDI of South Korea, there are attempts to broaden the scope of education as indicated below.

7.3.2.5 Attempts at Change of Focus of Education

Despite the success of South Korea as a leader in education with its high academic focus, there are attempts to broaden the scope of education. Among these is Humanity Education, 'with goals of instilling values of etiquette, public order and democratic citizenship' A government report in 1995, Korea's Vision for the Twenty-First Century, indicates that 'the curriculum must encourage students to be "global citizens which include openness to diversity, broad perspectives, and understanding of the various traditions and cultures of other countries, and sensitivity to environmental issues and conflicts among regions and races. Accordingly, there should be greater emphasis on tolerant and open-minded attitudes towards diversity and differences."

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ANNEXES

8 Annex 1: Need to Utilize in Full the Advantages Flowing from A Uniform and Comprehensive SBA Scheme

(Extracted from Chapter 10 of the SEMP Final Report on SBA)

8.1 The Summative Written Component - Focus on Key Concepts

The summative written component should be considered as a complementary and integral part of the examination scheme together with the SBA component. It has to be conceded that SBA; by its use of several modalities closely related to pupil learning, assessed closer to the learning activities and not restricted by the need for total coverage of a two-year course through a simultaneously held, 'sit-in', write-in' test mechanism, is the richer, more educationally valid and superior component of pupil assessment. It has also to be conceded that pupils have already been assessed more comprehensively through SBA.

The current practice of using lesson units, as units for testing, in the preparation of the table of specifications for the summative test needs to be reviewed. Lesson units are like building blocks used to build up the content of a subject. They are like the scaffolding used in erecting a building.

The pupil who has gone through the entire content at the end of course should have a holistic perspective of the subject. Therefore, summative testing at the end of a two-year long course should relate to the understanding of the subject in a holistic perspective. This understanding of the subject in a holistic perspective is that which has to be carried forward as the outcome of studying the subject and it is this understanding that facilitates the transfer of learning to real-life applications etc. Such an understanding would involve the mastery of the great ideas, basic concepts or key concepts fundamental to the subject. These run through the entire subject and cannot be confined only to lesson units.

In Physics the laws of motion are fundamental to the understanding of the subject. It is the acceptance of the first law that external force is required only to change the state of motion and not for motion that changed our ideas of the physical universe and gave birth to modern science. Similarly, the understanding of the concept of evolution and the laws of genetics is necessary to comprehend the subject of biology. It is such few key concepts that provide the linking for all the other phenomena exposed and explained in a subject. This proposal is most appropriate for subjects such as science and social studies which are built around a few interlinked concepts.

In the case of mathematics, some modifications may be necessary while in the case of languages the term key concepts may not be appropriate. However, the identification of key concepts should be a necessary exercise in curriculum development. Such an exercise may even change the sequence and design of the lesson topics. The testing of topics in lesson units in summative examinations tends to promote cramming of lesson unit related specifics and does not encourage focusing on great ideas or key concepts needed for a better understanding of a subject. To fully realize this aim, advanced information should be provided

to teachers and pupils so as to improve teaching-learning while reducing the cramming burden.

The changes required in the summative examination to implement this proposal are;

- Designing the summative examination so as to cover the conceptual scope of a subject.
- Designing the summative examination to test the key concepts or the ‘big ideas’ related to a subject and not the trivia associated with subjects.
- Including of key concepts extracted from several lesson units in place of lesson unit-based concepts in the table of specifications used to design the test paper.

9 Annex 2: Changing Role of Education – Preparing Students for the Future World of Work.

SLAAED Newsletter, Vol. 5, March 2017, Craig D. Gerald, Centre of Public Education, US, Defining a 21st, Century Education

- Social skills for collaboration, teamwork, management, leadership and conflict resolution.
- Personal skills for self-management, making sound judgements and managing risk.
- Problem – solving skills to think critically and analyse.
- Learning skills to acquire new knowledge.
- Communication skills including reading and writing.

10 Annex 3: A 21st Century Education

A 21st century education is about giving students the skills they need to succeed in this new world, and helping them grow the confidence to practice those skills. With so much information readily available to them, 21st century skills focus more on making sense of that information, sharing and using it in smart ways.

The coalition P21 (Partnership for 21st Century Learning) has identified four ‘Skills for Today’:

- Creativity
- Critical thinking
- Communication
- Collaboration

These four themes are not to be understood as units or even subjects, but as themes that should be overlaid across all curriculum mapping and strategic planning. They should be part of every lesson in the same way as literacy and numeracy.

Creativity is about thinking through information in new ways, making new connections and coming up with innovative solutions to problems. Critical thinking is about analysing information and critiquing claims. Communication is understanding things well enough to share them clearly with other people. Collaboration is about teamwork and the collective genius of a group that is more than the sum of its parts.

There are other skills that are important, which fall within these four areas. Entrepreneurship can be considered a skill of its own. Inquiry and problem solving are key. Emotional intelligence (EQ) is one of the most important keys to successful work and relationships. The bottom line? Education needs to be all about empowering students with transferable skills that will hold up to a rapidly changing world, not prescribed content that has been chosen for its past relevance.

10.1 Digital Technology

While digital integration is also fundamental to a thorough 21st century education, it is not enough to simply add technology to existing teaching methods. Technology must be used strategically to benefit students. Students are increasingly advanced users of technology even as they enter school for the first time, so this can often mean being open to the possibilities presented rather than attempting to teach and prescribe the use of certain programs. Many a classroom 'technology class' has baffled children by attempting to teach them about programs, websites and hardware that are no longer relevant or that they understand far better than the teacher does.

10.2 International Education

21st century schools are also responding to demand by moving into international education. ISC Research have tracked these changes in their research. In the past, international schools were primarily for the families of military personnel and diplomats. In the year 2000 there were 2,500 international schools globally with fewer than one million students attending, but in December 2016 there were over 8,600 international schools with almost 4.5 million students. The vast majority of these students are now local children hoping to attend universities in the West. Schools which aren't traditional 'international schools' are also striving to create an internationally connected education through travel opportunities, exchange programs, school partnerships, international school leadership, and online communication. Learning to be a global citizen is crucial in a world where technology is erasing borders, and you don't necessarily need an international education master's degree to incorporate this into your teaching.

21st century teachers need to serve as a guide or mentor for their students, not as the all-knowing sage providing them with all their information. With so much access to resources of all kinds, children are invariably going to know more than teachers on different topics, and be a step ahead of the technology in use. Teachers need to be empowered as facilitators and motivators for learning, so that they can empower their students in turn.

This shift is great news for teachers. Instead of struggling to give kids all the information they need to succeed in areas the teacher knows little about, they can support students as they make their own steps into different fields. It's about preparing kids to go beyond their parents and teachers, making sure they have the skills to do it, and then helping along the way as they build confidence to achieve.

This means teachers need to be forward-thinking, curious and flexible. Teachers must be learners: learning new ways of teaching, and learning alongside their students. Simply asking questions like “what will my students need twenty or fifty years from now? How can I help give them those skills?” can change your mind-set, make you a leader, and help you bring about change in your classroom, school and community.

- Start today: Practical tips for a 21st century school
- Invite students to contribute to strategy meetings and decision making
- Create adaptable learning environments suited to different sorts of collaboration and group work
- Encourage students to take ownership of community service programs
- Find ways to connect students to people their age in other parts of the world
- Review your use of technology in the classroom: how can it be made more effective?

In a time when mental health and wellbeing is one of the biggest challenges facing young people, a 21st century education can give students the skills they need both for now and for the future. Skills like communication, critical thinking and EQ go beyond the workplace: they can help people through the most difficult times of their life. Finding your passion, doing it well, having a sense of purpose and focus, and being able to control your own work and life are all significant steps on the path to wellbeing.

10.3 Result

The ability to think critically and creatively, to collaborate with others, and to communicate clearly sets students up for success in their careers, but also empowers them to lead happier, healthier lives.

Bringing your school into the 21st century requires taking the lead instead of trailing behind, actively seeking out new ways of doing things and staying in touch with the world outside of the education system. Change on a broad scale requires leadership in the classroom and across the school community, but every teacher can take steps immediately to help their students succeed.

11 Annex 4: Work and Learning, Joint Operational Study. Oct-Nov 1997, Final Report

11.1 UNESCO/APEID, 1978

This is a Report made for UNESCO/APEID by a team from The Curriculum Development Centre.

Sri Lanka, State Council for Educational Research and Training (SCERT), India, Indian Institute of Management, India, Under-privileged Children’s Educational Programme, Bangladesh, and A.H. University, Bangladesh.

The Report was on Project Work as a Component of the Senior Secondary Curriculum in Sri Lanka. The team visited selected schools and project sites in Dehiwela and Kandy, the contents of the Report is summarized below, mainly by quoting sections of the report.

11.2 Project Work as a Component of the Senior Secondary Curriculum

The programme of visit included an orientation session, visits to 5 schools and associated sites, a local health office and a regional education office. The sample of projects examined was very small compared to the 1,020 projects in their second year of operation. However, the visiting personnel were provided with the opportunity of discussing the programme with regional administrators, public agency personnel, resource teachers of Project Work, teachers and pupils. The curriculum materials, data sheets pupil files etc., were made available for inspection. Some of the projects were viewed under the normal conditions of operation and the outcomes were also viewed.

11.3 Background

The development in 1976, was a part of the Education Reforms of 1972, to remedy a lack of a definite practical component and training in problem solving and multi-disciplinary approaches. To ensure that exercises in problem solving are not based on sterile hypothetical situations, community or real-life situations are made as the bases of projects. The Project Work curriculum developers take into account the need for providing opportunities for exploration (without fear of failure), making and testing hypotheses and making “great leaps and huge guesses”¹¹. This enables community development through the use of the school as a conduit for channelling services to the community.

Project Work had 11 objectives grouped under the headings; as group activities, as a development activity with public agency participation, as a means of learning skills, and attitudinal aims. Under a Cabinet Decision obtained, public officials were enabled to claim assistance to project work as part of the official duties. There were 1020 projects involving 769 schools and about 20,000 pupils in 1976. In 1977, there were about 1000 schools with about 30,000 pupils involved.

The Curriculum Development Centre had produced detailed Handbooks, Teachers Guides, for Assessment methodologies for Exam purposes and a Newsletter.

11.4 Outcomes and Outputs Observed

11.4.1 Buddhagosna Vidyalaya, Dehiwela – Community Health Project

This involved 1000 poor families around Dehiwela Canal with high incidence of dysentery, typhoid and filarial. The Project involved public health education, persuading residents to

¹¹ Bruner, J. (1963). A needed theory of instruction association of education and curriculum development

drink boiled water, obtain immunization vaccines dental care and work involving organizing neighbourhood sanitation and constructing water seal latrines. The Dehiwela Canal Bank project had a remarkable impact in one year, among others, with typhoid cases reducing from 88 to 9, Hepatitis from 186 to 21 and Cholera from 11 to nil. (A visiting WHO official had noted in the Health Office Register that this is a world record!)

11.4.2 Vidyartha Maha Vidyalaya, Kandy – Irrigation and Agriculture Project

This was done with the assistance of Kandy Municipality and the Scout Movement. The construction work included 2 dams of 90 feet and 105 feet and 2,750 feet of channel work. This enabled the additional cultivation of 65 acres of paddy and employment for 25 unemployed youths. The project had given rise to 5 sub-projects involving setting up a pre-school, dairy farms, school leaver education, health education and minor-cop diversification.

11.4.3 Mahamaya Girls School – Integrated Rural Development Project

The Rural Development work gave health and economic benefits to Nuwerawela community. The work involved setting up a pre-school, and adult and skills education. 'History of Kandy' was another of the projects involving university professors, archaeologists, museum personnel and custodians of ancient temples.

11.4.4 Pushpadana Girls School, Kandy – Crèche Project

This was an indication of the potential schools have for becoming a conduit for the coordination of services. The school had taken over a Kandy crèche, beautifully decorated it with full length friezes.

The surroundings have been cleaned. The school, through its intervention had organized a comprehensive health service for the crèche children. In addition to the Health Department, various organizations such as the British Council, Kandy Multi-Purpose Cooperative Society and Francis Perera & Co. had provided financial and materials aid. The goodwill won through the care of the children has been utilized to deliver health services to the children.

Incidentally the pre-schools started by the above 2 schools are the largest and most prestigious in Kandy.

11.4.5 Imaginative Reconstruction

There are many insights generated by the projects in Sri Lanka particularly of a curricular activity with development objectives. For instance, modern technology in agriculture, carried out under the Ministry of Agriculture is being applied in many project work activities. Knowledge, approaches and methods in health education used by the Ministry of Health are also being applied in Project Work. The idea of conducting an intensive and extensive study

of the problems and needs of the community as a basis for developing Project Work activities may be another innovation that may have significance to other projects outside the country.

11.4.6 Implications

The lessons learned from Project Work have many implications for other areas of innovation in APEID (Asian Region) Since Project Work is closely related to the life and work of the people in every community at different levels of development, the data collected and analysed could have great significance for curriculum and materials development in areas such as science education, social studies, etc. development. Project Work activities help the school to become a centre of inquiry generating new knowledge in addition to its traditional function of as disseminator of knowledge. The school contains a pool of talent rarely gathered by any widespread organization. Thus, the school can act as a conduit for the channelling of services already available but rarely reaching the communities. The freedom given to the schools in the choice and development of projects is noteworthy, especially because this has led to a greater degree of innovation without loss of conformity where objectives are concerned. The pragmatic approach used in the development of the project and the inductive used in problem formulation is also noteworthy.

The evaluation developed for Project Work is worthy of close study because this is the first of its kind.

11.4.7 Project Work and On-Site Field Studies

This is an outcome of the Project Work programme of the mid-seventies. One of the projects was to use a small forest reserve in Kegalle as an on-site environmental study. Later this was developed with definite study sites and a field laboratory to provide first-hand environmental education by the end of the seventies there were seven sites developed for field studies in different parts of the country extending from the Adam's Peak vicinity to Jaffna. Pupils attending field studies sessions were lodged in the schools associated with the Field Centre. Using the residential facilities, a large part of the biology syllabus was covered during a week end session. The use of photo voltaic solar power was demonstrated first in Sri Lanka at the site in Horana. The power generated during the day was utilized in lighting up the classrooms and for use of projectors in the night sessions of field studies. In 2002 the program was extended to about 30 sites with ADB assistance. The number was further increased by 2012. The On-site Field Studies modality is another way of developing the study and work skills helpful to VHHD.

11.4.8 Pre-school Education

Pre-school education in Sri Lanka began as a privately initiated venture as "Montessori Schools" but began to proliferate by the seventies so that it became subject under Ministry concerned with Children and Women. It is still a private venture catering to most of the pre-school children. Although pre-schooling provides a head start to subsequent formal schooling, the topic is excluded in this study as being outside the terms of reference.

11.4.9 Non formal Education

Non-formal education for those who skipped school, which is marginal with almost total school enrolment being available, is also excluded in this study.

11.4.10 University Education

It is recognized that university education is very important for VHHD. As such the expansion of the university system and the increase of their student numbers is a prime strategy as regards the supply of prerequisites and attributes of VHHD. The Open University modality is very valuable in this respect. The use of modalities other than the lecture method is an important requirement in this respect. The most effective is Project Work particularly Group Project Work. Universities already use Assignments and Project Work but what is required is Project Work designed on the basis of School Project Work indicated above.

11.4.11 Law Education

The Law College functions as a separate institution under the Ministry of Law, while there are faculties of law in the Colombo and Open universities. Professional competency is valued in law education. The need for reform of law education on the lines indicated above is recognized.

11.4.12 Technical Education

There was a separate system of Junior Technical Colleges and Senior Technical Colleges under the Ministry of Education beginning in the sixties. Now there are a provincial based system of Higher Technical Colleges and University of Technical Education (Univotech), in Ratmalana, all coming under a separate Technical and Vocational Education system. Technical education is traditionally work and practice based. Yet the need for reform of technical education on the lines indicated above is recognized.

11.4.13 Non-university Tertiary Education

This categorization of tertiary education is somewhat amorphous, the boundaries being not quite distinct. It is considered as the 3rd stage of secondary education with the first 2 stages considered as coming within school education. Nevertheless, as a workable solution, tertiary education may be defined as further education requiring advanced level qualifications. Tertiary Education has been recognized as integral to development and has been included as UN Sustainable Development Goal 4 (SDG-4) ensuring life-long learning for all including tertiary education. Reform of technical education on the lines indicated above should enhance its value in relation to VHHD.

11.5 Category considered as needing additional attention as providers of Prerequisites and Attributes of VHHD

The following sections (in italics) are indicated without any further elaboration in this preliminary draft for the purpose of getting further inputs at the discussion of this draft.

11.5.1 Public Administration related Institutions of Further Education

Several Government Departments have institutions to upgrade the abilities of public servants. The main institution is the Sri Lanka Institute of Development Administration (SLIDA). Sometimes diplomas are granted. Although these are aimed at improving the productivity of the public servants, their contribution pre-requisites to VHHD have to be considered.

There are several other government institutions, such as the Agrarian Institute of Research which can come under the institutions providing prerequisites of VHHD.

11.5.2 Government agency related Research Institutes

The government agency related research institutions, such as, the Tea Research Institute, the Rubber Research Institute, the Coconut Research Institute and the Paddy Research Institute come under this category.

11.5.3 Colleges of Education

There are several post-secondary education related Colleges of Education for the upgrading of qualifications of educational personnel coming under the Ministry of Education, providing diploma level education. Several hundred teachers are involved in this furthering of their education. The diplomas are granted with the collaboration of the National Institute of Education (NIE).

11.5.4 National Institute of Education (NIE)

The National Institute of Education (NIE) provides a variety of diplomas and degrees in subjects related to education. The National Institution Act provides NIE with powers to grant degrees a first level and post-graduate level.

No detailed recommendation is made at this stage. Yet the reform of teaching-learning using group project work and field studies would definitely enhance the contribution of these sectors to VHHD.

