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# Executive summary

This report reviews trends in educational needs and challenges of lower and upper-middle income countries to assist DFAT in its consideration of future support to the Sri Lankan education system. The TOR posed four questions, addressed below. The report and annexes draw on the international literature on education, public policy, economics, political science and official documents from national governments and bilateral and multilateral agencies, with special reference to countries in East and South East Asia. The Executive Summary draws on both the report and the annexes.

## Is there a trend in the kind of education needs lower and upper-middle countries face in relation to economic growth and political stability?

The following trends can be identified.

* In all countries reviewed, education policy has been directed towards the twin goals of economic growth and the creation of strong national identity.
* In the transition from low income to middle income status, there was an abundant supply of low paid, productive, disciplined labour with basic education and low skill levels.
* High levels of basic education and literacy preceded economic growth.
* Access to education was and is gender equitable.
* Public expenditures on basic education were equitable.
* Access to all levels of education has been open, competitive and largely meritocratic.
* Expansion and gradual improvement of education at all levels has been a necessary but not sufficient condition for economic growth.
* Technical and vocational education has made an important contribution to skills development.
* The ‘developmental’ states of many Asian countries were borne of political conflict. Economic growth was not the fundamental goal of development but a means to it. The fundamental goal was the political survival and stability of the state. The legitimacy of these states rested on their ability to promote and sustain economic growth in the productive system, domestically and internationally.
* Developmental states do more than plan and regulate the economy. They use education to mould the identities, attitudes and motivations of young people to ensure a continuing collective commitment to, and active participation in, the goals of national development.
* Education is used by states as a political tool to legitimise who gets what and to promote national identity. The choice of the language of instruction in schools and universities is central to the politics that surround education.
* The creation of strong national identities and solidarity through education in the wake of colonial independence and economic and other political crises was an important ingredient in the rise of some Asian countries.

## Are there examples of projects/interventions that have worked particularly well to address the education needs of lower middle and upper-middle income countries?

There is no ‘panacea’ for the ways in which education is organised in order to meet the goals of economic growth and national solidarity. Moreover, the ways in which education, economic growth and political interact in any given national context depends on a wide range of demographic, economic and political characteristics (e.g. the social and ethnic diversity of the population, the stage of economic growth, the underlying level of education of the population, the underlying level of political stability/instability and the nature of the political regime). Appendices to this report illustrate this diversity in relation to two lower middle income (Vietnam and Sri Lanka), two upper-middle income (Malaysia and Thailand) and one upper income country (Singapore). They also describe successive long-term phases of education reform undertaken since the 1970s to the present, as these countries have made their transitions from low income to middle income status, and, in the case of Singapore, to high income status. However, the following point to the importance of investments in general education.

* Economic ‘returns’ to investment in education vary by level of education and shift over time, as more children gain access to the different levels of education. The contribution of education to economic growth depends on the quality of education, as well the quantity.
* Investments in primary, secondary, and technical and vocational education are not either/or choices. Investment in secondary depends on investment in primary; so too investment in technical and vocational education depends on investments in secondary.
* There is no single indicator of good quality education. Judgements of quality rest on considerations of basic inputs, pedagogic processes, student experience and output measures, such as scores on achievement tests and public examinations.
* The goal of increased economic returns from education investments underpins attempts to understand the determinants of ‘learning quality’ and ‘learning outcomes’.
* While there are many rigorous studies of the determinants of school achievement in OECD countries, there are fewer rigorous studies in developing countries. Two recent rigorous reviews of literature from developing countries are instructive. Working from the field of econometrics Glewwe et al (2013) identify only three factors which have consistent impact on learning outcomes: teacher knowledge of the subjects they teach; teacher attendance and absence; and availability of desks. The authors concluded that ‘these results are not particularly surprising and provide little guidance for future policies and programs’. Working from the fields of education and psychology, and focusing on studies of teachers and teaching, Westbrook et al (2013) identified the following as important ingredients of learning outcomes: the use by the teacher of feedback, sustained attention and inclusion; the creation of a safe environment in which students are supported in their learning; the teacher drawing on students’ backgrounds and experiences; the use of a range of grouping practices (whole-class, group and pair work); the frequent and relevant use of learning materials beyond the textbook;open and closed questioning, expanding responses, encouraging student questioning;demonstration and explanation, drawing on sound pedagogical content knowledge;theuse of local languages and code switching; planning and varying lesson sequences. Teacher education, including practicum, the quality of the school curriculum and guidance materials, all contribute to effective pedagogy. Of particular importance are: (i) teacher peer support; (ii) alignment of professional development with teachers’ needs, the promoted pedagogy and modes of assessment of their practice and follow-up monitoring of teachers; (iii) support from head teachers; and (iv) alignment of forms of assessment with the curriculum. Neither this nor the Glewwe et al (2013) review was able to draw any conclusions about the modalities/mechanisms of intervention.
* Interventions designed to develop national identity and political commitment to broader national development goals are usually of four types: (i) medium of instruction; (ii) values education; (iii) student composition of schools; and (iv) school rituals and co-curricular activities. For example, in an ethnically diverse Singapore, the medium of instruction in primary and secondary education has been English since 1987. In a similarly diverse Malaysia, Malay has become the common medium of instruction in all primary and secondary schools from this year, 2014. In 2002, Malaysia introduced English as the medium of instruction for the teaching of mathematics and science in primary and secondary but this policy was reversed in 2012. The Vietnamese regime controls the formation of national identity through various channels of political socialisation, including curriculum subjects in primary and secondary education. Since the introduction of English as a common medium of instruction Singapore’s schools have admitted children from all social groups to ‘integrated schools’. Before this, when English, Tamil and Chinese were used as media of instruction, different language streams were accommodated in one building and one ‘integrated school’.

## What are the challenges faced in implementing education reforms in lower-middle and upper-middle income countries?

Myriad challenges are faced by those who strive to change systems, schools and the practices of teachers, principals and students.

* Factors influencing the success of reform implementation include the: (i) clarity of the prescribed change; (ii) simplicity of the prescribed change; (iii) degree of consensus about the need for change; (iv) technical quality of the change project/program; (v) the practicality of the change; and (vi) the availability of funds.
* Characteristics of a positive process of implementation include: (i) ongoing in-service training and leadership; (ii) school principal leaderships; (iii) local direction, commitment and support; (iv) a clear process of implementation and institutionalisation; (v) monitoring and problem solving; and (vi) community support.
* Evidence from Thailand’s experience of implementation challenges in education reform offer valuable lessons for elsewhere:
* the complexity of system-wide reforms that require change in embedded behaviours of professionals represents a significant obstacle to change
* there is a common tendency to treat change as an ‘event’ rather than a process, and therefore, to underestimate the time frame for system-wide change
* even in highly hierarchical societies, users ‘on the ground’ possess the capacity to resist centrally mandated changes
* the process of change is characterised by gradual adoption of changes as potential users move through different stages and levels of use
* there is evidence of mutual adaptation during the implementation process as reforms are reinterpreted by local users
* change is facilitated by alignment of policies and processes engaged by actors at multiple levels of the system
* top-down change appears to be effective at defining priorities and directions, but insufficient by itself to motivate people to change embedded behaviours
* meaningful change in the behaviour of educators results when bottom- up initiatives are reinforced by top-down vision and structural arrangements, and outside-in support
* in systems which expect school principals to be managers, reforms that prescribe that they should, in addition, become instructional leaders, face particular challenges.
* Education policies aimed at improving access and improving quality evince constellations of vested interests. A synthesis of 38 cases of education reform designed to improve education access and quality in basic education in Latin America suggest that access-oriented reforms tend to be easier to implement, since they provide citizens with increased benefits and politicians with tangible resources to distribute to their constituencies, such as an expansion of jobs for teachers, administrators, service personnel, construction workers, and textbook and school equipment manufacturers. Quality-enhancing reforms by contrast often focus on accountability and cost-effectiveness and threaten the interests of many of these stakeholders who, in turn, block their implementation.
* The literature on the political economy of education reform draws attention to a range of factors that influence the nature and process of reform. *Inter alia,* these are: (i) the underlying drivers of reform (e.g. regime change, economic decline); (ii) actors with vested interests; (iii) incentives and threats in promoting and resisting reform, e.g. government, teacher associations, teacher unions, parents, students, civil society organisations and development partners; (iv) characteristics of the policy and implementation decision process, e.g. clarity and complexity of the intervention, strength of technical team, political interference; and (v) strategies used to promote and resist reform, e.g. the generation of political will, financial incentives, enhancement of teachers’ professional identity, teacher and student strikes, teacher absenteeism, elections and resistance campaigns. While a consideration of underlying drivers, key actors, incentives, incentives and threats, policy decision processes and strategies operate in all reform contexts, the specific composition of drivers, actors, etc. will vary from context to context.

## In Sri Lanka, we know that access to education to education is quite high, but the level of education outcomes is still lacking. Is this a common theme for lower-middle and upper-middle income countries? How can it be addressed?

* Yes, levels of learning are a common theme in the current discourse that surrounds education policy reform in most countries. For example in 2010, Malaysia used its 2009 PISA results to justify further benchmarking of student outcomes against international standards, establish new curricula, introduce accelerated learning pathways for high performing students, establish clear learning standards and revamp national examinations to include assessments of ‘higher order skills’. Historically, the interest in comparative levels of learning arose as much from political as economic factors (e.g. the Russian launch of sputnik prompted the first round of comparative studies of learning achievement among 10, 14 and 17 years olds in a group of (mainly) OECD countries). Since then, successive waves of studies have included a gradually increasing number of middle-income countries. Singapore has consistently performed among the top three of all participating OECD countries. Thailand and Malaysia perform more modestly and at similar levels. Vietnam entered the list of countries participating in the PISA studies only recently and outperformed the much richer Thailand and Malaysia in Maths, Reading and Science.
* Notwithstanding the central role of context in determining learning outcomes, Goodwin (2014) highlights three lessons that can be drawn from Singapore: (i) making teaching a high quality profession through attracting, retraining and sustaining young persons of high quality; (ii) placing teachers as professionals at the centre of educational reform, improvement and accountability; and (iii) creating a basic level of care for all students. The OECD (2011) attributes Singapore’s success to 10 system characteristics: vision and leadership; alignment of the education system to economic development goals; close match between policy intentions and implementation across all schools; clear goals, rigorous standards and high stakes gateways; curriculum, instruction and assessment processes that match standards; high quality teachers and principals; strong central capacity and authority to act; accountability; meritocratic values; and adaptation of proven practices from abroad.
* The strong performance in the PISA rankings of Vietnam, whose GDP per capita is 1/37th of that of Singapore and 1/7th of Malaysia and one quarter of Thailand, suggests no simple relationship between the wealth of a country and level of learning outcomes. At 6.6% of GDP, Vietnam allocates a very high percentage of government expenditure to education, higher than Singapore (3.2%), Thailand (5.8%) and Malaysia (5.1%). This underlines the importance accorded to strengthening the education system.

## Sri Lanka compared

While the TORs do not seek a commentary on Sri Lanka (a commentary would require a systematic review of Sri Lankan literature on each of the above questions), the following comments, drawn from a limited review of Sri Lankan literature, may be of value to DFAT.

In the 1950s and 1960s, Sri Lanka’s levels of education performance rivalled those of the countries that were to become the high-performing Asian economies. While growth in the quantity and quality of education is accorded a key role in the story of success of, especially the Asian tiger economies, economic policies were as, if not more, important. On the economic front, Sri Lanka’s poor record has been attributed, *inter alia*, to: (i) the import substitution policy, resulting in low growth and high levels of unemployment among educated youth and political unrest; (ii) low levels of foreign exchange, domestic savings and investment; (iii) an inefficient public sector; and (iv) politicisation of the implementation of policy reforms and of the public sector. Unlike the various political conflicts faced by the tiger economies in their early years of growth, Sri Lanka experienced a relatively peaceful transition to political independence. Her need for political survival, and for a strong state-legitimating economic modernisation program, was relatively weak. Ethnic conflicts and civil war would emerge only later. While the ending of the war in 2009 presented Sri Lanka with an opportunity to use education as a means of building peace, forging reconciliation and creating strong national identities, her performance to date on this score is disappointing.

Sri Lanka’s education reform policies and practices over the years have differed from those of the Asian tigers in several respects.

* Sri Lanka has placed a very strong emphasis on equality of educational opportunity as a goal for education, where other countries have placed a stronger emphasis on education as a means to economic growth and a strong national identity.
* In contrast to Korea and Taiwan, Sri Lanka did not invest heavily in technical and vocational education.
* In contrast to all four Asian tigers, Sri Lanka did not permit the establishment of new private schools or universities.
* In contrast to Korea and Taiwan, the expansion of education has not followed manpower planning principles.
* Education has been geared more to the goal of achieving equality of educational opportunity than to economic growth.
* The unplanned growth of secondary education and the extremely slow growth of the Sri Lankan economy from 1960 to 1977 led to unemployment and frustration, and contributed directly to waves of social unrest among Sinhala youth in 1971 and 1987–1989 and, to a large measure, to the growing unrest of Tamil youth in the late 1970s.
* Since the 1970s, the day-to-day implementation of education policy reforms, especially in the matter of teacher appointments and teacher transfers, has become increasingly politicised. This has thwarted many attempts to build good quality education for all.
* Over the past half century, the Sri Lankan education system has failed to build a sense of national identity, solidarity and cohesion. Since the relegation of English as a medium of instruction, the separation of middle class students by ethnicity and language and the failure of link language programs, education has not contributed to the forging of national values among young people that transcend ethnicity.

Sri Lanka spends a very small percentage of her GDP on education, in comparison with all other countries in Asia (making her achievements in enrolment all the more remarkable). Between 2001 and 2010, government education expenditure as a proportion of GDP ranged from a high of 2.67% in 2006 to a low of 1.86% in 2010. This is extremely low when compared with 41 countries in the Asia Pacific region (Little 2012). Only Myanmar spends less. Sri Lanka also spends a very low proportion of education expenditure on primary education. With a modest increase of total education expenditure to 3.0% of GDP and of education expenditure devoted to primary to 30.0%, Sri Lanka could make substantial improvements in the quality of education.

To date, Sri Lanka has not participated in international surveys of achievement such as PISA or TIMMS, though curriculum-relevant TIMMS items have been included in surveys of Grade 4 national assessments. Results from the most recent study, using 2009 and 2013 data, show a disappointing 10-point decline in performance from an already low position. The government has offered no comment on this finding to date. At the same time, Sri Lanka’s public examination system is of a high standard, entry to university extremely competitive and standards of entry much higher than in many OECD countries.

Notwithstanding Sri Lanka’s strong political commitment to equality of education opportunity, there remain large disparities in inputs (e.g. teachers and infrastructure) and outputs (e.g. student performance in the national assessments), by province, school type, gender, medium of instruction and location.

Current Government of Sri Lanka/DFAT/World Bank investment focuses, *inter alia*, on raising mean levels and reducing disparities in performance in primary education in Maths, first language and English, and on these and Science in secondary education. These are sound strategies that require sustained investment over the long term. A holistic approach to improving the quality of education involves interventions in six areas: (i) building the instructional skills of teachers and management skills of principals; (ii) assessing students; (iii) improving data systems; (iv) facilitating improvement through the introduction of policy documents and education laws; (v) revising standards and curriculum; and (vi) ensuring an appropriate reward and remuneration structure for teachers and principals.

# Introduction

Australia is considering the future needs of the Sri Lankan education system beyond the current Transforming Schools Education Project. This report aims to inform this thinking by reviewing the trends in educational needs and challenges for lower-middle and upper-middle income countries and how these issues have been addressed.

The terms of reference for this report comprise four questions:

1. Is there a trend in the kind of education needs for lower-middle and upper-middle income countries face? The report should focus on education needs in relation to enhancing economic growth and political stability. Lower-middle and upper-middle income countries with a post-conflict and multi-ethnic setting would be particularly relevant if possible.
2. Are there any examples of projects/interventions that have worked particularly well to address the education needs of lower-middle and upper-middle income countries? What are they? What mechanism/modality do they use? Who is the implementer? Why were they successful?
3. What are the challenges faced in implementing education reforms in lower-middle and upper-middle income countries?
4. In Sri Lanka, we know that access to education is quite high, but the level of education outcomes is still lacking. Is this a common theme for lower-middle and upper-middle income countries? How can it be addressed?

The report should focus on the experiences of one lower-middle income, two upper-middle income and one high income country (e.g. Vietnam, Malaysia, Thailand and Singapore).

The report focuses on primary and secondary education as discussed and agreed with the Department of Foreign Affairs and Trade (DFAT)[[1]](#footnote-1). Where relevant, the report refers to vocational, technical and higher education, but these literatures do not, in the main, fall within the purview of this report. The identification of relevant literature was conducted through an internet-based search using strings of keywords[[2]](#footnote-2) and a selection of materials from the consultant’s existing knowledge of the field. Literature is drawn from the fields of education, public policy, economics, political science and official documents from national governments and bilateral and multilateral agencies.

The report is presented as an overview report with annexes. The main report is organised around the four questions above and draws from the international literature on education, economic growth and political stability and the four country case studies.

Annexes 1 to 4 are case studies of relations between education, economic growth and political stability in Vietnam, Malaysia, Thailand and Singapore constructed for this study by the consultant. Annex 5 presents a comparative overview of population, economic status, political status characteristics and the knowledge economy index, of these countries in relation to Sri Lanka. Annex 6 lists the variables in studies of the impact of teacher and school characteristics on learning achievement. Annex 7 provides the main conclusions from McKinsey’s 2010 report, *How the world’s most improved school systems keep getting better*. Annex 8 is an abstract from *A rigorous review of the political economy of education systems in developing countries* (Kingdon et al, 2013). Annex 9 offers a theory of change for education policy challenges in conflict-affected contexts (Novelli et al, 2013). Annex 10 compares the five focus countries on the global competitiveness index. Annex 11 is a brief overview of the public examination systems in the five countries.

# Question 1: Education needs in relation to economic growth and political stability

## Education and economic growth in successful Asian countries

Human capital theory has long posited that growth in education leads to increases in economic productivity and the growth of the economy (Schultz, 1961). In 1993 the World Bank produced a landmark report on economic growth and public policy in East Asia, *The East Asian Miracle.* The report seeks to explain why it was that, from 1965 to 1990, eight high performing Asian economies grew more than twice as fast as the rest of East Asia, roughly three times as fast as Latin America and South Asia, and 25 times as fast as Sub-Saharan Africa. The eight economies were: Japan; the four tigers – Hong Kong, the Republic of Korea, Singapore and Taiwan; and three newly industrialising countries of South East Asia – Indonesia, Malaysia and Thailand. Not only did their economies grow but these countries were ‘unusually successful at sharing the fruits of growth’. The main engines of growth were: human capital, private domestic investment, a decline in population growth rates and wealth-sharing programs promoted actively by the state (World Bank 1993, pp2-5). The common trends in education were:

* a head start in education and continued investment in education
* education policies focused initially on the expansion and development of primary education followed by secondary education
* higher shares of public expenditure to basic education than to higher education, compared with countries in other regions
* tertiary education was largely met by a self-financed private system
* states could invest heavily in education because:

- economic growth generated the necessary resources

- teacher salaries rose at a slower rate than average wages

- population growth declined, the rate of growth of the school age population declined, resources were liberated for increases in school quality

- these countries adopted various ways of sharing wealth (e.g. Singapore undertook a massive housing program) increasing the demand for schooling among the poorest families.

## Education and political stability in successful Asian countries

Many authors have added to this account of the Asian ‘miracle’. Castells (2000) identifies seven key elements in the rapid economic development of Singapore, Korea, Taiwan and Hong Kong, two of which are political in nature. The first political factor is the *politics of survival* which arise as a result of major national tensions and conflicts. Castells (p284) suggests that:

“The East Asian developmental state was born of the need for survival, and then it grew on the basis of a nationalist project ... *Survival came first.”*

Economic development was not *the* fundamental goal of development but a means to it. The fundamental goal of a developmental state in these high performing Asian economies (HPAEs) was political survival and stability. In the case of Singapore, Castells (pp284-85) points to the race riots of 1964, Singapore’s expulsion from the Federation of Malaysia and the threats posed by a communist insurgency in peninsula Malaysia through the 1960s.

A second political feature is *geopolitical position*. The perceived threat of the spread of communism in Asia after World War II led to massive political and economic support for Asian states from the United States of America on the condition that they become its ‘vassal’ states (Castells, 2000, p279). Singapore was at the centre of cold war tensions and recipient of large-scale aid from both the United States and Britain between the 1950s and 1970s. The presence of British military bases during the 1960s and requisitioning from the USA for the Vietnam War also benefitted Singapore economically (Green 2007).

Important economic features were the *outward orientation of the economy*, specifically the export of manufactured goods, and the *absence of a rural landowning class*.

Castells does not directly discuss education but some trends can be discerned from what he writes about labour and the informational paradigm. He speaks of the *availability of educated, productive, cheap, disciplined and re-skillable labour; and* the *ability of economies to adapt to the informational paradigm and the changing pattern of the global economy*. Research and development in science and technology were vital for the high technology sectors of the new global economy and their emphasis on science and technology. There was ‘an ability to shift from one level of development to another and from peripheral incorporation into the global economy into a more dynamic, competitive positioning, in higher-value generating activities that led to sustained growth’ (Castells, 2000, p282).

A final feature – and arguably the most fundamental common of these four countries – was *the role of the state in the development process.* Castells refers to ‘the dragon of the developmental state breathing on the tigers’. A state is developmental:

“… when it establishes as its principle of legitimacy its ability to promote and sustain development, understanding by development the combination of steady high rates of economic growth and structural change in the productive system, both domestically and in its relationship to the international economy”. (Castells, 2000, p283)

Developmental states also implicate education. The role of a developmental state:

“… goes beyond economic planning and regulation. It also involves the construction of national identity and the legitimation of state power. [Education] develops the attitudes and motivations in individuals which will ensure continuing collective commitment to and active participation in the goals of national development”.
(Green, 1997, pp47-48)

Education is used by states as a political tool to legitimate who gets what, and for political socialisation, especially in the creation of national identity. The use of education to promote national identity has been particularly potent in the post-colonial era, as seen in discussions and conflicts surrounding the choice of official languages of government and media of instruction in schools and universities. Economic globalisation and the need to maintain national sovereignty have given many of these discussions new impetus. Education is used to bolster 'self-strengthening' resistance to the encroachments of Western and/or Asian imperialism and to further projects of post-colonial nation-building (Lall and Vickers, 2010).

The creation of strong national identities in the wake of colonial independence and economic and other political crises has been an important ingredient in the subsequent economic rise of the Asian tigers. Education plays a strong role here, through, *inter alia,* language policies, curricula and student admission policies to schools and universities.

Morris and Sweeting (1995) offer a comparative analysis of education policies and investment in Singapore, Hong Kong, Korea and Taiwan during the periods when they made their transitions from low to middle income countries (Table 1). They emphasise the role of education in serving:

1. the maintenance of strong states
2. rapid economic and technological advancement
3. the creation of a distinctive sense of national solidarity and identity.

They are struck by the differences and the similarities between these four in the ways that education provision meets these objectives. In other words, there is no single educational ‘panacea’.

Table 1: Differences and similarities between the Asian tigers in education provision

|  |  |
| --- | --- |
| **Differences** | **Similarities** |
| Greater use made of manpower planning to guide educational planning in the period after initial industrialisation in Taiwan and South Korea | High levels of basic education and literacy for males and females were available to the population before initial economic take-off |
| Educational planning left to the market more in Singapore and Hong Kong | Expansion of secondary and then tertiary education in parallel with shifts towards technology-dependent manufacturing |
| Greater stress on technical and vocational education in Taiwan and South Korea | The school systems have been open, competitive and largely meritocratic, offering all sections of society the prospect of upward social mobility |
| In Taiwan and South Korea tertiary provision became more technically-oriented and the private sector was encouraged to expand | In Singapore, Taiwan, Korea and Singapore, (but not Hong Kong), school curricula have been used to promote a strong sense of social cohesion, patriotism and national identity |
|  | While education policies have been vital, economic policies have been more important in explaining the course of development |

More recently, the OECD (2010) underlines the significant investment made by Singapore in the technical and vocational education field with the establishment of a high quality Institute for Technical Education. This was designed to provide high quality training for young people in skill development programs responsive to the changing demands of industry and new technologies. Because its graduates were in strong demand, and the best students could proceed to polytechnics and universities if they chose, the status of vocational education rose. The number of places in universities and polytechnics was expanded to produce more scientists and engineers (OECD, 2010).

The main education conclusions that may be drawn from the above writings are that:

* education serves the development ends of economic growth and political stability
* education is a necessary but not sufficient policy for economic growth
* in the transition from low income to middle income, there was an abundant supply of educated, low paid, highly productive and disciplined labour
* high levels of basic education and literacy preceded economic growth
* access to education was gender equitable
* public education expenditures were equitable
* technical and vocational education have made an important contribution to skills development
* access to education was open, competitive and largely meritocratic education
* the creation of a strong sense of national solidarity and identity through education was a vital ingredient in the creation of both political stability and a collective commitment to the project of economic growth.

## Sri Lanka compared with the Asian tigers

In the 1950s and 1960s, when the Asian tigers (Hong Kong, the Republic of Korea, Singapore and Taiwan) embarked on their drives towards economic growth, Sri Lanka’s economic and social development status was already strong. Why was it that Sri Lanka’s economic development had fallen so far behind by 1990? Using the lessons learned from the Asian tigers (above), Little and Hettige (2013) offer an analysis.

Already by 1950, 80% of Sri Lankan children were enrolled in primary education, compared with 88% in Korea and Taiwan, 77% in Singapore and 50% in Hong Kong. Twenty per cent of children were enrolled in secondary education compared with 16% in Korea, 11% in Taiwan, 7% in Singapore and 13% in Hong Kong. In other words, already by 1950, Sri Lanka’s educational performance rivalled the East Asian tigers. By 1990, Sri Lanka’s enrolments in primary and secondary education were still impressive. Slightly more girls were enrolled in primary and secondary education than boys. Expansion of secondary followed the expansion of primary but largely in response to social demand rather than planning in relation to the manpower needs of the economy. Education expenditures were reasonably equitable with inequities appearing only from Grade 10 onwards. Given the level of public expenditure devoted to education, Sri Lanka had achieved remarkable levels of educational expansion, a fact noted regularly by the international development community.

However, there are also a number of differences between Sri Lanka’s education policies and performance and those of the Asian tigers.

* In contrast to Korea and Taiwan, Sri Lanka did not invest heavily in technical and vocational education.
* In contrast to all four Asian tigers, Sri Lanka did not permit the establishment of new private schools or universities.
* In contrast to Korea and Taiwan, the expansion of education has not followed manpower planning principles.
* Education has been geared more to the goal of achieving equality of educational opportunity than to economic growth.
* The unplanned growth of secondary education and the extremely slow growth of the Sri Lankan economy from 1960 to 1977 led to unemployment and frustration, and contributed directly to waves of social unrest among Sinhala youth in 1971 and 1987–1989 and, to a large measure, to the growing unrest of Tamil youth in the late 1970s.
* Perhaps most significantly has been the failure of the Sri Lankan education system over the past half century to build a sense of national identity, solidarity and cohesion. Since the relegation of English as a medium of instruction, the separation of middle class students by ethnicity and language and the failure of link language programs, education has not contributed to the forging of national values among young people that transcend ethnicity.

At the same time, it is important to remember that the Asian tigers’ economic growth was probably driven more by economic policies than education policies. Sri Lanka’s poor economic record of growth can be attributed to, *inter alia*, a wholesale import substitution policy resulting in low economic growth and very high unemployment among the educated, leading to political unrest. Foreign exchange and domestic savings and investment were low. The public sector was inefficient, and policy implementation in all sectors, including education, became increasingly politicised.

The absence of political conflict in the transition to independence in Sri Lanka is also significant. In Korea, Taiwan, Singapore and Hong Kong, the economic project of growth arose out of political conflicts of various kinds and the need for political survival. In Sri Lanka the transition to independence was relatively peaceful and the post-independence government continued pre-independence economic policies through the 1950s and 1960s.

Internal conflicts would arise later. The ending of the civil war in 2009 has presented Sri Lanka with an opportunity to use education as one means towards building peace and reconciliation – one that is not being exploited to the full.

## Comparator countries

Any assessment of the relationship between education, economic growth and political stability must recognise the diversity of the societies in which education reform takes place. The TOR state that the experience of Vietnam (lower-middle income), Malaysia and Thailand upper-middle income) and Singapore (high income) should be included in this review. These four countries were chosen for their respective levels of economic growth and their cultural diversities with respect to other countries and each other. The ways in which education, economic growth and political interact in any given national context depends on a wide range of demographic, economic and political characteristics (e.g. the social and ethnic diversity of the population, the stage of economic growth, the underlying level of education of the population, the underlying level of political stability/instability and the nature of the political regime).

Annexes 1 to 4 present case studies of education, economic growth and political stability for Vietnam, Malaysia, Thailand and Singapore. Annex 5 presents a comparative overview of population, economic status, political status characteristics and the knowledge economy index, of these countries in relation to Sri Lanka. They also describe successive long-term phases of education reform undertaken since the 1970s to the present as these countries have made their transitions from low income to middle income status, and, in the case of Singapore, to high income status.

# Question 2: Successful education projects and interventions, modalities and implementers

In recent years, the contribution of education to economic growth has been re-evaluated in terms of its quality rather as well as its quantity. Hanushek and Woessman (2008) show positive ‘returns to education’ when the education measure focuses on what children and young people have learned, as measured through achievement tests. Differential income returns to test scores translate, they suggest, directly into differential economic growth rates.

What is not known is which types of projects/interventions yield the greatest impact on learning outcomes. In an attempt to address this question, Glewwe et al (2013) review extensive literature published between 1990 and 2010 on school resources and educational outcomes in developing countries. Which specific school and teacher characteristics, if any, appear to have strong positive impacts on learning outcomes and time spent on learning? From a pool of 9000 studies, based on research from emerging and developing countries (as defined in the World Economic Outlook Report April 2010 and including Thailand, Malaysia, Sri Lanka and Vietnam, but not Singapore) 43 are selected as using ‘high quality’ econometric methods. Only two teacher characteristics – teacher knowledge of the subjects they teach and teacher absence – have consistent impacts; and one class resource – the availability of desks. The authors conclude that these results are not particularly surprising and provide little guidance for future policies and programs.

This conclusion refers only to the attempt of the authors to identify answers to the question ‘What works everywhere?’ Their findings do not invalidate the attempts by a single country to establish what works in that country. A factor may be very important in one or two countries but unimportant in others. Unfortunately, like so many large-scale econometric studies, this review does not list the countries and the contexts from which the 43 studies derive; so we glean nothing about the economic, political and social contexts in which the interventions were implemented and the national and local factors that facilitate and inhibit reform. The authors were unable to conclude anything about modalities of intervention and the nature of key implementers. They also acknowledge in their conclusion that “what works best may vary considerably across countries and even within countries, which implies that future research should attempt to understand which policies work best in which settings” (Glewwe et al 2013, p52).

Notwithstanding the absence of many universal findings, the list of factors included in the studies provide a useful ‘pool’ of strategies worthy of consideration by DFAT staff working in the Sri Lankan context in dialogue with the Ministry of Education and others. See Annex 6 for a list of the factors included in the studies. At the same time, the universal findings on teacher knowledge, teacher absence and provision of desks (a likely proxy for classroom resources and space) are important for Sri Lanka and for DFAT. It is interesting to note that in Malaysia in 1991 when Vision 2020 was announced, improvements in the quality of teachers became a goal for education. Future investment in Sri Lanka might well focus on the upgrading of teacher knowledge of the subjects they teach in both primary and secondary school, especially in those subjects likely to promote economic growth, such as mathematics, English, science and ICT.

Another review, commissioned by DFID, addressed the question: ‘Which pedagogic practices, in which contexts and under what conditions, most effectively support all students to learn at primary and secondary levels in developing countries?’ (Westbrook et al 2013) Based on an initial pool of 489 studies, a final list of 45 studies was selected for methodological rigour and quality of contextualisation. The main conclusion drawn was that teachers’ use of communicative strategies encourages pedagogic practices that are interactive in nature and are most likely to impact on student learning outcomes. The following three strategies and six effective teaching practices were identified.

**Strategies:**

1. feedback, sustained attention and inclusion
2. creating a safe environment in which students are supported in their learning
3. drawing on students’ backgrounds and experiences.

**Effective teaching practices** (not all of which need to be simultaneously present):

1. flexible use of whole-class, group and pair work where students discuss a shared task
2. frequent and relevant use of learning materials beyond the textbook
3. open and closed questioning, expanding responses, encouraging student questioning
4. demonstration and explanation, drawing on sound pedagogical content knowledge
5. use of local languages and code switching
6. planning and varying lesson sequences.

How can teacher education (curriculum and practicum) and the school curriculum and guidance materials best support effective pedagogy? The review identified four key findings: (i) teacher peer support; (ii) alignment of professional development with teachers’ needs, the promoted pedagogy and modes of assessment of their practice and follow-up monitoring of teachers; (iii) support from head teachers; and (iv) alignment of forms of assessment with the curriculum.

Other, less rigorous, analyses identify a wide range of success stories and success factors. In 2007 and 2010, McKinsey produced two influential reports on high-performing school systems. Although neither focuses explicitly on the link between ‘high performance in education’ and ‘global economic competitiveness’, this underlying concern would seem to be implied. Both reports generate lists of characteristics and interventions that correlate with ‘success’ as measured by high levels of achievement (the 2007 report) or increases in achievement over time (the 2010 report). Of the five countries of central interest to this review, only Singapore features in these reports. Nonetheless, the generic system ‘lessons’ are likely to be of interest to DFAT.

The 2007 report asks: *How do the world’s best performing school systems come out on top?* The authors assert that high-performing systems do three things well.

1. They get the right people to become teachers: i.e. the quality of an education system
 cannot exceed the quality of its teachers. In the best systems:

* teachers are selected from among the top 10% of senior high school achievers
* university graduates view teaching as among their top three career choices
* the selection process into teacher training is very rigorous, including literacy and numeracy tests
* the ratio of places available in initial teacher education courses to applications is 1:10
* starting salaries of teachers are in line with other graduate salaries.

2. They develop these people into effective instructors: i.e. the only way to improve
 learning outcomes is to improve instruction. In the best systems:

* new teachers receive more than 20 weeks of ‘coaching’ in schools
* 10% of a teacher’s working time is used for professional development
* teachers are aware of specific weaknesses in their teaching
* teachers can observe and understanding better teacher practices
* teachers reflect on and discuss practice
* the best teachers and coaches are selected to train other teachers
* research on effective instruction is undertaken (with budgets equivalent to $50 per student per year) and fed into policy and classroom practice.

3. They ensure that every child is able to benefit from excellent instruction through
systems and targeted support: i.e. they raise the standard of every student.
In the best systems:

* there are clear standards for what students should know, understand and be able to do
* all schools are aware of their strengths and weaknesses through system-wide check on school performance
* effective systems are in place to support all failing students, leading to minimal performance variation between schools
* funding and support for students is focused where it can have most impact
* in support of this focus on failing students, education planners believe that schools can overcome the effects of social disadvantage. In the top performing countries there is a lower correlation between achievement outcomes and student home backgrounds than in lower performers. This is interpreted to mean that school systems in top performing countries help students overcome the disadvantage of home background.

The second study, published in 2010, is titled *How the world’s most improved school systems keep getting better***[[3]](#footnote-3).** This ambitious report describes and analyses successful education reforms in 20 education systems, described as ‘sustained improvers’ (five years or more of consistent rises in student performance) and ‘promising starts’ (developing countries or emerging areas that have begun data-supported reform efforts more recently, and have seen improvement over two to three years). In some countries, several ‘episodes’ of reform are studied so in total a set of 34 ‘reform journey’ cases are studied. Not all of these system-wide reforms. Some reforms are undertaken in a state within a country, while others are city-based or even small school networks within cities. Systems are further divided into four categories, those that have improved from ‘poor to fair’, ‘fair to good’, ‘good to great’ and ‘great to excellent’, these categories being based on levels of achievement. Eight main observations from the McKinsey 2010 report are as follows. Further descriptions are reproduced, *verbatim* in Annex 7.

1. A system can make significant gains from wherever it starts – and these gains can be achieved in six years or less.
2. There is too little focus on “process” in the debate today. Improving system performance ultimately comes down to improving the learning experience of students in their classrooms.
3. Each particular stage of the school system improvement journey is associated with a unique set of interventions.
4. A system’s context might not determine what needs to be done, but it does determine how it is done.
5. Six interventions occur equally at every performance stage for all systems:
* building the instructional skills of teachers and management skills of principals
* assessing students
* improving data systems
* facilitating improvement through the introduction of policy documents and education laws
* revising standards and curriculum
* ensuring an appropriate reward and remuneration structure for teachers and principals.
1. Systems further along the journey sustain improvement by balancing school autonomy with consistent teaching practice.
2. Leaders take advantage of changed circumstances to ignite reforms.
3. Leadership continuity is essential.

While the 2010 report is presented in an extremely upbeat and persuasive style, its analysis is flawed in at least one major respect. Because it focuses only on improving systems, it omits from its analysis systems in which student performance was stable or in decline. Many of the interventions mentioned by the leaders of the improvers, the political changes associated with the onset of reforms and the assumption of office by new technical and political leaders are not uniquely associated with improving systems. Only through a comparison with systems deemed to have stayed in one place or gone into decline could the authors assert with any confidence that they have identified the most important reform drivers. The report acknowledges this when it says: “the systems that have been unsuccessful in trying to improve may carry out the same types of intervention that successful system undertake”, but it goes on to assert “but there appears to be one crucial difference, that they are not consistent, either in carrying out the critical mass of interventions appropriate to their performance stage, or in pursuing them with sufficient rigour and discipline” (McKinsey, 2010 p20). Since the report offers no evidence from ‘unsuccessful systems’ it is difficult, if not impossible, for this author to judge the veracity of the findings and the validity of the inferences drawn.

## Education interventions and political stability

In all the comparator countries, the goals for education include both economic development and national unity. Education has been, and continues to be, employed as a tool for political stability in Vietnam, Malaysia, Thailand and Singapore through at least four types of Ministry-driven interventions: (i) medium of instruction (MOI) policies (ii) curriculum programs focused on values and identities (iii) student admission policies and (iv) school rituals and co-curricular activities (see Annexes 1 to 4).

### Medium of instruction (MOI)

Sri Lanka’s policy of dual media of instruction in general education is rather different from that found in the comparator countries. In Singapore, the medium of instruction in primary and education has been English since 1987. Malay is the medium of instruction in secondary education in Malaysia and, from 2014, in all primary schools from Grade 4. Chinese, Tamil and Malay are used in primary Grades 1-3. In 2002, Malaysia introduced English as the medium for instruction for the teaching of mathematics and science in primary and secondary education, though that policy has been reversed recently. While the reversal reflects challenges in implementing radical reforms, it also reflects tensions between Malays and Chinese and between the use of language for national unity versus the skills required to compete in a globalised world (see Annex 2). In Vietnam, although the Education Law of 2005 asserts that ’the State shall enable ethnic minority people to learn their spoken and written languages in order to preserve and develop their ethnic cultural identity’, in practice minority students are likely to be taught by teachers who speak only Vietnamese and they perform worse in school subjects (MOET and UNICEF 2011).

### Curriculum program

The case studies for Singapore (Annex 4) and Vietnam (Annex 1) describe in some detail how common values and strong national identities have been forged through curriculum initiatives. Sri Lanka’s record on using curriculum subjects to forge common national identities among Sinhalese and Tamils is relatively weak. Indeed the content of history and social studies texts and the ways in which ethnic groups are portrayed has been the source of much discontent in the past. In 2008, the Ministry of Education, with support and encouragement from external donors issued a National Policy and a Comprehensive Framework of Actions on Education for Social Cohesion and Peace (MOE, 2008). A recent review of a number of school curriculum, teacher education, and textbook reforms identifies a range of challenges faced (Aturupane and Wikramanayake, 2011).

### Student admission policies

Singapore forges ethnic integration through its ethnically integrated primary and secondary schools, all of which use English as the medium of instruction. Even when English, Chinese and Tamil were the media of instruction in primary education, the different language streams were accommodated in one building and one ‘integrated school’. Children had opportunities to learn and play together in extra- or co-curricular activities outside formal lessons. In Malaysia, ethnic integration of students is forged mainly at the secondary stage of education.

In Sri Lanka, recent MOI changes (in which an increasing number of subjects are being offered from Grade 6 through the medium of English) re-open up the possibility of admitting students of all ethnic groups to the same school, with some subjects followed jointly in English and others separately through the mother tongue. Moreover, in those national schools with boarding facilities, there are opportunities for students from different ethnic groups not only to learn together but also to live together. Although the MOE has a policy on education for social cohesion, the priority and emphasis it is given is disappointing.

### School rituals and co-curricular activities

School rituals and co-curricular activities are perhaps the least politically sensitive – but also the least effective – way of promoting strong national identities. In Singapore, prior to the introduction of a common medium of instruction, these means were employed. But even then, ‘integrated’ schools admitted all language streams to the same school building. In Sri Lanka co-curricular activities among students of different backgrounds are popular (Aturupane and Wikramanayake, 2011).

# Question 3: What are the challenges faced in implementing education reforms in lower-middle and upper-middle income countries?

The literature on evaluations of education reform is wide ranging and draws from many social science disciplines. Most evaluation studies conducted in the 1960s and 1970s focused on the implementation of relatively small-scale innovations on the ground. They also focused more on why innovations failed rather than on why they succeeded.

“We learned more about what not to do than anything else (don’t ignore local need, don’t introduce complex, vague innovations; don’t ignore training needs; don’t ignore local leaders and opinion makers).” (Fullan, 1989 p3)

A second phase of evaluation studies, undertaken from the late 1970s, focused more on successful innovations, designed to impact, variously, on student achievement, teacher behaviours and commitment. Fullan (1989) offers a conceptual framework for the process of change, based around initiation, implementation and institutionalisation. Initiation involves needs assessment, deciding to start, the mobilisation of resources, and the development of initial commitments. Implementation involves the design of action plans, the carrying out of plans and the maintenance of commitment. Institutionalisation involves the process related to the norms and practices of institutions, evaluation and the consolidation of commitment. Factors influencing positive implementation are of two types – characteristics of the process and of the project itself. These are summarised in Table 2 below.

Table 2: Factors influencing positive implementation

|  |  |
| --- | --- |
| **Characteristics of the process** | Characteristics of the change project |
| * Ongoing in-service and leadership
* School-level (principal) leadership
* Local direction, commitment and support
* Clear process of implementation and institutionalisation
* Monitoring and problem solving
* Community support
 | * Clarity/complexity of the change
* Consensus/conflict about the need
* Quality/practicality of the change
 |

Source: adapted from Fullan (1989:11)

This framework derives from project implementation in the North American context. Reflecting on the differences between the characteristics of innovation and reform that distinguish North American contexts from those typically found in developing countries which are funded by the World Bank, Fullan (1989) acknowledges that in North America, project innovations are generally small, specific, operate on short time frames, rely on strong infrastructure and operate within a politically and economically stable environment. By contrast, World Bank ‘projects’ are described as large-scale reforms that comprise ‘bundles of innovations’, are implemented over a longer time frame, rely on a weaker infrastructure and in less stable political and economic environments.

Malaysia’s recent experience of introducing English as the medium of instruction for science and mathematics in primary and secondary school underlines the problems of implementing a radical program with little consultation and consensus about the need for change, lack of qualification and training of teachers and community resistance (Annex 2).

A review of recent educational reforms in Thailand set in relation to the broader international literature offers valuable general lessons that are nonetheless rooted in a middle-income context rather than the high-income context and federal political system of the United States (Hallinger and Bryant, 2013, see also Annex 3). These lessons included the following areas.

* The complexity of system-wide reforms that require change in embedded behaviours of professionals represents a significant obstacle to change.
* There is a common tendency to treat change as an ‘event’ rather than a process, and therefore, to underestimate the time frame for system-wide change.
* Even in highly hierarchical societies, users ‘on the ground’ possess the capacity to resist centrally mandated changes.
* The process of change is characterised by gradual adoption of changes as potential users move through different stages and levels of use.
* There is evidence of mutual adaptation during the implementation process as reforms are re-interpreted by local users.
* Change is facilitated by alignment of policies and processes engaged by actors at multiple levels of the system.
* Top-down change appears to be effective at defining priorities and directions, but insufficient by itself to motivate people to change embedded behaviours.
* Meaningful change in the behaviour of educators results when bottom- up initiatives are reinforced by top-down vision and structural arrangements, and outside-in support.
* Thai principals have evinced a role orientation that emphasises managerial and political behaviour, with the added distinction of being government officials who were never expected to fulfil the role of instructional leader. This has undermined their ability and willingness to adopt the role of instructional leader.

As noted earlier, education reform often arises under conditions of political instability rather than stability. It is used by states as a ‘way out’ of long-running civil conflicts. It is also used as a platform in political elections and occurs as a result of shifts in political regime. It also arises out of constitutional change. While conflict, regime shifts and constitutional change generate broad education reform and more specific education interventions, they also influence their formulation and implementation. A recent DFID-funded literature review of *The Political Economy of Education Systems in Developing Countries* explored a range of factorsthat constrain and enable the formulation and implementation of education interventions. Based on a review of 64 studies including some from Sri Lanka, Kingdon et al (2013) examine the interests, incentives, strategies, contexts and exercise of power of key stakeholders in the formulation and implementation of educational decisions.

Earlier research from Latin America had suggested that access-oriented reforms tend to be easier to implement, since they provide citizens with increased benefits and politicians with tangible resources to distribute to their constituencies, such as an expansion of jobs for teachers, administrators, service personnel, construction workers, and textbook and school equipment manufacturers. Quality-enhancing reforms by contrast often focus on accountability and cost-effectiveness and threaten the interests of many of these stakeholders who in turn block their implementation (Grindle, 2004). The review confirmed and extended Grindle’s findings. These include:

* the underlying drivers of reform will determine the nature of policy formulation and the range of actors with vested interests in promoting and resisting reform. The composition of interests as between, *inter alia*, government, teacher professions, trade unions, parents, students, civil society organisations and development partners will vary from context to context (e.g. trade unions in India have more force than they do in Sri Lanka)
* the implementation of reforms/projects involves incentives that promote reform (e.g. status and power gains, the growth of trade union membership, the expansion of jobs and patronage) and disincentives likely to resist reform (e.g. threats to pay, status, power, jobs, workload). Again, the composition of these will be context-specific
* characteristics of the policy decision process (e.g. clarity and complexity of the intervention, strength of technical team, political interference) will influence implementation
* as implementation proceeds, a range of strategies will be used by various actors to promote and resist reform. Strategies that promote reform include the generation of political will, financial incentives, enhancement of teachers’ professional identity, and preparedness on the part of government to negotiate with opposition/resistance forces. Strategies used to resist reform include teacher and student strikes, teacher absenteeism, elections and resistance campaigns.

A generic model of the political dynamics of education reform, which might be used as a framework for assessing the feasibility of supporting alternative interventions is offered in Annex 8.

Post-conflict settings create additional obstacles to project implementation but also opportunities for action. In another DFID-funded monograph, *The Political Economy of Education: Policy Challenges in Conflict Affected Contexts,* Novelli et al 2013reviewed 60 studies selected for academic quality. The review focuses on the contribution that education can, in principle, make to political stability and to the obstacles that arise at the stages of agenda setting, formulation and implementation of policies and programs for education in conflict and post-conflict settings. Challenges faced by those working on interventions in post-conflict contexts include weak financial and technical capacity, the marginalisation of the education agenda within broader diplomacy, development and defence agendas, and the exclusion of education specialists from global and national arenas of debate about post-conflict reconciliation. (For a fuller discussion see Annex 9.)

# Question 4: Achievement levels in Sri Lanka compared with elsewhere

The recent interest in cross-national studies of learning achievement from economists mirrors longstanding interest in the determinants of learning achievement by educators and policymakers, an interest borne as much of political as economic factors. Prompted by dismay at the Russian’s launch of the *Sputnik,* the West, through the auspices of the International Association for the Evaluation of Educational Achievement (IEA), launched a pioneering pilot study of 13 year old students in 12 countries in 1959. This was followed by the First International Mathematics Study (FIMS) in 1964, by several others in the 1970s and 1980s, to the Third International Mathematics and Science Study (TIMSS) first conducted in 1994. This stimulated the Program for International Student Assessment (PISA), first conducted in 2000 and most recently in 2012 (Little and Rolleston, 2014).

The 2012 OECD PISA survey was conducted among 15 year olds in all 34 OECD member countries and 31 partner countries and economies, representing more than 80% of the world economy. Malaysia, Singapore, Thailand and Vietnam, but not Sri Lanka, participated. Table 3 shows the mean scores achieved in maths, reading and science. Vietnam joined the survey for the first time in 2012 and surprised many with mean scores in maths, reading and science at the OECD average. Singapore retained a longstanding position near the very top of the table. Thailand performed marginally ahead of Malaysia.In 2010, Malaysia used its 2009 PISA results to justify: further benchmarking of student outcomes against international standards; establishing new curricula; introducing accelerated learning pathways for high performing students; establishing clear learning standards; and revamping national examinations to include assessments of ‘higher order skills’ (Annex 2).

To date, Sri Lanka has not participated in PISA or indeed in any international survey of achievement. While it is difficult to judge in advance how well Sri Lankan 15 years olds might perform on PISA tests, it should be noted that the GCE O and A level examinations in Sri Lanka (sat by 15–16 and 17–18 years olds) are of a high standard and access to university among the most competitive in the world.

Sri Lanka has participated in the Grade 4 TIMMS survey indirectly. As part of the National Assessment of Learning Outcomes conducted in 2009 and 2013, Grade 4 students were administered a maths test based on TIMMS items selected for their relevance to the Sri Lankan maths curriculum. The items were chosen from the TIMMS item battery to reflect the Sri Lankan maths curriculum and were the same in 2009 and 2013. The results show a marked decline (2009 mean 403; 2013 mean 316) (NEREC 2014a). To date these findings have attracted no comment by the government.

Table 3: PISA mean scores 2012, Maths, Reading and Science (15 year olds) and TIMMS Maths 2011 (8 9 years olds)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **PISA Maths** | **PISA Reading** | **PISA Science** | **TIMMS 2011** |
| **Singapore** | 573 | 542 | 551 | 611 |
| **Vietnam** | 511 | 508 | 528 | Na  |
| **Thailand** | 427 | 441 | 441 | 427 |
| **Malaysia** | 421 | 398 | 420 | 440 |
| **Sri Lanka** | na | na | na | 2009 403\*2013 316\* |

Source: abstracted from OECD 2014 \*It is impossible to know how Sri Lanka compares with the 63 countries that participated fully in TIMMS in 2011, since the Sri Lanka TIMMS test, sensibly, used a subsample of items, chosen to reflect Sri Lanka curriculum relevance. If the mean difficulty of the items selected by Sri Lanka were the more difficult items across the 63 countries then, other things being equal, one might expect the Sri Lanka mean scores to be lower than those reported from other countries. Conversely if the Sri Lanka-relevant items were among the easier items internationally then, other things being equal, one would expect the Sri Lankan scores to be higher.

There are no simple explanations of inter-country differences in PISA performance. Singapore is a very rich country; Vietnam very poor by comparison. Yet Vietnam performs at a level higher than Thailand and Malaysia. The Vietnamese system is particularly efficient in its delivery of learning outcomes for all through the setting of minimum standards for all schools and supporting their achievement through carefully targeted programs (Young Lives, 2014). In the case of Singapore, the OECD (2011) has identified 10 system characteristics that contribute to Singapore’s success: vision and leadership; alignment of the education system to economic development goals; close match between policy intentions and implementation across all schools; clear goals, rigorous standards and high stakes gateways; curriculum, instruction and assessment processes that match standards; high quality teachers and principals; strong central capacity and authority to act; accountability; meritocratic values; adaptation of proven practices from abroad (Annex 4).

The PISA data indicate that 15 year-old boys perform better than girls in 37 out of 65 countries, while girls performed better than boys in five countries. Higher scores in maths are associated with socio-economic advantage, attendance at pre-primary school, high parental expectations, student contentment at schools, and punctuality in attending school

<http://www.oecd.org/pisa/keyfindings/pisa-2012-results-overview.pdf>

The TIMMS data indicate that at Grades 4 and 8, students have higher mathematics scores if:

their parents reported that they often engaged in early numeracy activities with their children, their children attended pre-school, their children started school able to perform early numeracy tasks and that there were learning resources at home.

They attended school regularly and punctually, attended schools where a greater proportion of students were from relatively affluent backgrounds, spoke the language of the TIMMS assessment as their first language, had a positive attitude towards learning maths, felt engaged in the learning of maths, enjoyed good nutrition and sleep and attended schools which emphasized academic success and had safe and orderly environments,

Their teachers were more experienced, confident and satisfied in their work (Mullis, Martin, Foy and Arora, 2012)

The most recent (2013) Sri Lankan NALO survey (NEREC 2014b), based on Sri Lanka-designed tests of achievement in maths and English, indicates major disparities between provinces (the South, Sabaragamuwa, North Western and Western perform better than Central, North Central, Uwa, the North and the East). Girls perform better than boys in English *and* Maths; Sinhala-medium students perform better than Tamil-medium students, and students attending urban schools perform better than students attending rural schools. Because the items in the tests differ from those used in 2009, changes in performance over time cannot be assessed. Unlike the TIMMS and PISA studies, measures of home background and school and teacher characteristics were not included in the survey. However, based on the findings of those surveys, more research and policy intervention is needed in Sri Lanka on reducing disparities in: (i) school inputs (perhaps through using a minimum standards approach); (ii) the availability of experienced and qualified teachers; (iii) student attendance; and (iv) health and nutrition. More work is needed in helping teachers to diagnose learning errors and in designing teaching and learning strategies that resolve them.

## Increase spending on education quality

There needs to be a continued emphasis in Sri Lanka’s general education system on the improvement of the quality of the teaching and learning inputs, processes and achievement outcomes. In part, this needs to be achieved through increased government expenditure on education.

Over recent years, government education expenditure as a proportion of GDP ranged from a high of 2.67% in 2006 to a low of 1.86% in 2010. This is extremely low when compared with 41 countries in the Asia Pacific region (Little 2012). While Sri Lanka spent 2.0% in 2011, only Myanmar, which has a low GDP, spent proportionately less. Australia spent 5.1%; Japan 3.8%; Singapore 3.2%; Malaysia 5.1%; Thailand 5.8% and Vietnam 6.6%. At 24.2%, Sri Lanka also spent the lowest proportion of education expenditure on primary education (Australia 36.0%; Japan 34.9%; Malaysia 28.6%, Thailand 34.6%; Vietnam 33.5%). Only Singapore spent a lower amount (20.2%).

With a modest increase of total education expenditure to 3.0% of GDP and of expenditure on primary education expenditure (to 30.0%) Sri Lanka could improve the quality of education substantially.

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1. 10 July 2014 tele-meeting ERF, DFAT Colombo and consultant [↑](#footnote-ref-1)
2. Examples of keywords are: education, secondary education, primary education, education reform, learning, education quality, economic growth, economic status, low-income, middle-income, lower middle income, upper middle income, high income, political stability, political instability, national identity, values, curriculum, cohesion, conflict, post conflict, aid, aid effectiveness, skills, skill development, Malaysia, Singapore, Sri Lanka, Thailand, Vietnam, Asian miracle, DFAT, DFID, World Bank, OECD, UNESCO, UNICEF, ADB, World Economic Forum. [↑](#footnote-ref-2)
3. The systems were: Armenia, Aspire (a US charter school system), Boston (Massachusetts), Chile, England, Ghana, Hong Kong, Jordan, Latvia, Lithuania, Long Beach (California), Madhya Pradesh (India), Minas Gerais (Brazil), Ontario (Canada), Poland, Saxony (Germany), Singapore, Slovenia, South Korea, and Western Cape (South Africa). [↑](#footnote-ref-3)