Improving Efficiency of Schooling in the Maldives: Is De-shifting a Desirable Policy Direction?

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Aishath Sheryn
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Abstract

Education, a vital component of human capital, is essential for the growth of nations. Developing countries, faced with limited resources and budget constraints, adopt strategies that they believe will improve access to education and at the same time reduce costs. This thesis explores the desirability of one such policy option, double-shift schooling, with respect to de-shifting, its reverse policy. Whether de-shifting is a desirable policy direction is assessed, based on other countries' experiences, alternative strategies and the current education situation in the Maldives, a country presently under this transition. Some of these alternative strategies are explored for their effectiveness in improving the quality of education.

In the case of the Maldives all schools were operating a double-shift system prior to 2009 and the government is now attempting to convert all schools to single-shift, by the end of 2013. Although the Maldives has achieved 100 per cent enrolment at primary school level, this access has not been transferred to secondary level. Statistics indicate low levels of achievement at all stages of education. The education situation in the atolls is of particular concern, where the majority of schools suffer from a lack of locally trained teachers and learning resources.

In general, it has been found that double-shift schooling does not affect the academic standards of students. However, several costs, both direct and indirect, tend to make the quality of education in double-shift schools *appear* to be inferior, in comparison to single-shift schools. De-shifting, which involves large costs, does not guarantee an improvement in the quality of education, since there are several other factors which significantly affect academic performance.

For the Maldives, findings from the study indicate that in addition to the high costs involved, scarcity of land, may affect the progress of de-shifting. The attitude of teachers, whose working day is lengthened without financial compensation, is also a concern. Moreover, there are other areas within the education sector which are greatly in need of immediate investment. These include, improving access and equity at secondary level, especially in the atolls, and improvement in the training of local teachers. Unless such aspects are addressed, de-shifting, although desirable in the long run, may fail to deliver the benefits that it claims.

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List of Abbreviations

ALT	Academic Learning Time
CHSE	Centre for Higher Secondary Education
DSS	Double-Shift schooling
ELT	Extended Learning Time
FE	Faculty of Education
FSD	Full-School Day
GDP	Gross Domestic Product
GS	Ghiyasuddin School
HDI	Human Development Index
HSC	Higher Secondary Certificate
IGCSE	International General Certificate School Examinations
LDC	Least Developed Countries
IMF	International Monetary Fund
LDC	Least Developed Countries
MCHE	Maldives College of Higher Education
MDGs	Millennium Development Goals
MCHE	Maldives College of Higher Education
MPND	Ministry of Planning and National Development
MOE	Ministry of Education
NER	Net Enrolment Ratio
OECD	Organisation for Economic Cooperation and Development
PD	Professional Development
PPP	Public-Private Partnership
SBM	School Based Management
SES	Socio-Economic Status
SOEs	State Owned Enterprises
SSC	Secondary School Certificate
SSS	Single-Shift Schooling
UNDP	United Nations Development Programme
UPE	Universal Primary Education
USA	United States of America

1 Introduction

1.1 Introduction and Overview

Education generates the human capital of a country, which leads to an increase in the productivity of labour in turn to the growth and development of nations (Hanushek, 1996). In the case of a country with limited resources, the question of how the best education can be provided is critical. During the early stages of educational development, double-shift schooling (DSS) was a measure commonly used to bring about universal education within the confines of limited resources. However, as Hanushek and Wößmann (2007, p. 1) stated "Expanding school attainment, at the center of most developing strategies, has not guaranteed better economic conditions. What's been missing is attention to the quality of education-ensuring that students actually learn." One of the approaches to ensure this quality in education is moving from double-shift to single-shift schooling (SSS), and this is the central focus of this thesis.

DSS is the practice of accommodating two cohorts of students in one set of school buildings at different times during the day. It has been implemented in many countries in order to broaden access to education and, at the same time, limit the burden on their governments' budgets by reducing capital and variable costs. However, it is perceived to have several educational, as well as external costs, not the least being a decline in the quality of education. This calls into question the double-shift system and re-affirms the need to introduce de-shifting, the process of converting double-shift schools to single-shift ones, with the purpose of increasing the number of daily instructional hours. This study proposes - somewhat counter intuitively - that, on balance, the benefits of SSS do not necessarily outweigh that of a DSS system.

In doing so, it analyses the production side of both models of schooling and it attempts to identify the cost of capital, staff and management. However, detailed financial expenses are not included due to lack of availability of information. Cost analysis is undertaken through data collected from a number of countries' cases where such costs (within both models) have been compared. Additionally, academic achievements (under both types) are comparatively analysed, in order to realise the educational impact. For an economic assessment, effectiveness of the policy cannot be analysed without taking

into account alternative approaches with the same aim – improving the quality of education. Although there are constraints on information and the measurement of the effects, knowledge of these strategies will give an indication of areas where resources could be directed.

The Maldives where until recently the entire school system was on double-shifts, is an interesting case in which to examine the challenges associated with this transition. Whilst a single-shift may be desirable in the long run, its success depends on ensuring that mandatory conditions of the vital elements, including the quality of teachers and resources within the school system are up to standard. Thus it is important to ensure that resources are being directed where they are needed most and equally important that alternative strategies that improve academic performance are assessed.

This chapter begins with a brief introduction to the thesis, followed by the background of the study where the rationale and purpose of the study together with the research questions and methodology are presented. This is followed by the background of the Maldives, which leads to the last section where the structure of the thesis is presented.

1.2 Background of the Study

During the past decade, developing countries and the international community have been intensively striving to meet the Millennium Development Goals (MDGs) adopted by world leaders (in 2000) and set to be achieved by 2015. With the collective aim of ensuring human development reaches everyone, one of the goals is to achieve universal primary education (UPE). As outlined in United Nations (2006, p. 6) "ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling."

The Maldives surpassed this goal of UPE by 2002 (MPND, 2007b). However, it still faces major challenges in terms of the quality and equity of education that it provides. DSS, together with a lack of trained teachers and educational infrastructure, is considered one of the major reasons for overall learning achievements being low at all levels of education (MPND, 2007b). De-shifting all schools is a key policy objective of the Maldives' new government, with their primary aim being to improve academic

performance and to provide a more holistic education. In addition, this change is expected to improve the economic and social conditions of the country.

1.2.1 Rationale and Purpose of the Study

The researcher has an employment background in teaching and an education background in economics. This thesis is an attempt to combine these two areas of interest. The purpose of this study is to explore the economic consequences of the educational policy decision of de-shifting in the Maldives, and in particular to assess the effectiveness and affordability of the policy in the education sector.

From the available resources, it is not apparent whether the government of the Maldives has considered the costs and benefits of shift-schooling or taken into account other countries' experiences of de-shifting. This transition represents large costs and it is important to analyse if it is being invested in the right direction. Additionally, by considering the alternative options, it can be deduced whether de-shifting is the best measure within the resource constraints and opportunity costs.

This study analyses the implications of de-shifting in the light of international research. One of the objectives is to analyse the comparative statics of single-shift and double-shift schooling, in addition to the transitional procedure of de-shifting. There are three aspects to this: *the rationale for de-shifting; the transitional procedure; and the constraints and concerns.* Whilst economics is about finding the optimum allocation of resources, several factors limit the use of a cost-and-benefit analysis within policy decisions in education. Difficulty in measuring costs and outcomes, presence of externalities and time-lags in realising the outcomes, are some of these. Nevertheless, since economics is about making decisions between available choices, it is important to assess the relative efficiency of alternative polices with similar objectives (Klees, 1986). In recognising that de-shifting can be both costly and drawn out, this research also highlights alternative and complementary measures, which could contribute to the mandated target of improving the quality of education.

1.2.2 Research Questions

This study is particularly interested in the costs and benefits of shift-schooling and de-shifting, especially in developing countries with limited resources. The Maldivian case

is chosen to examine this process because it is currently going through a historical transition from a double-shift to a single-shift school system.

Specifically, the study seeks to answer the following questions:

1. Do single-shift schools provide a better academic outcome than double-shift schools?
2. What are the costs and issues involved in the implementation of single-shift schools?
3. Given these costs, is the transition justifiable?

1.2.3 Methodology

In order to find answers to the above questions, information from other countries on shift-schooling and de-shifting has been brought together for anlaysis. Additionally, research findings on alternative measures with the same objective of improving academic performances are analysed. Within the limits of available information, conclusions are drawn relating to these countries' situations and cases and their relevance to the Maldivian situation is assessed. The overall situation of the education system in the Maldives is examined to consider whether it is in a position to invest in the policy. Moreover, additional information required for a more comprehensive research is identified.

Unlike developed Western countries, available information and research on the Maldives is limited. Documents may not exist, or if they exist, they may not be generally available. In relation to information and data concerned with the Maldivian context, there is reference to various government policy documents. However, these documents are often only brief summaries and they do not necessarily give a clear indication of the objective therefore other sources of information are used. In the case of policy information, the Maldives is similar to the case of the United Arab Emirates where according to Gardner (1995, p. 290) "the government often uses press releases and speeches by officials to announce new policies or to report data to public, daily new papers proved to be a most useful source of both data and commentary." Thus, for several issues, daily newspaper articles have been sourced.

In addition, factual data on the change were obtained through heads of schools from four different schools (two from the capital and two from the atolls) through emailed requests for information. Ethical requirements for this procedure were observed. Firstly, approval was obtained from the Massey University Human Ethics Committee (see Appendix A). A copy of the information sheet is provided in Appendix B. Approval from the Maldives' Ministry of Education was obtained (see Appendix C), before emailing requests for information. Information from this source will be referred to as "Interview Information" in the thesis.

Limitations

Whilst informative data on the change to SSS was gathered for the Maldivian situation, feedback from a representative sample of schools was not included.

According to Hanushek and Wößmann, (2007), merely adding resources does not lead to quality in education, since institutions, structures, principles and efficient spending on education, are also as important. Most of the materials presented are descriptive, and they examine such institutions and the finer points of the education sphere. Many of the inputs are results from educational type studies on the effectiveness of different strategies. However, as pointed out by Levin (1988), 'effective', 'effectiveness' or 'cost-effective', which economists would base on a cost-benefit analysis that assesses outcomes for their monetary value, is different in educational terms. Whilst both disciplines use the same method for measuring costs, education measures outcomes based on educational objectives, such as reducing dropouts and improving academic scores (Levin, 1988). Most of the studies do not go through that extra step of evaluating the monetary effects of the outcomes. In addition, due to cross-country differences the application of these findings may not be suitable to a specific country. However, it gives an indication to the policy makers on which they can build their investment decisions.

1.3 Background of the Maldives

To find out whether de-shifting is a desirable policy direction, an understanding of the specifics of the Maldivian context is important. This section presents the country's background where some general features are discussed, which is followed by its economic, social and educational circumstances.

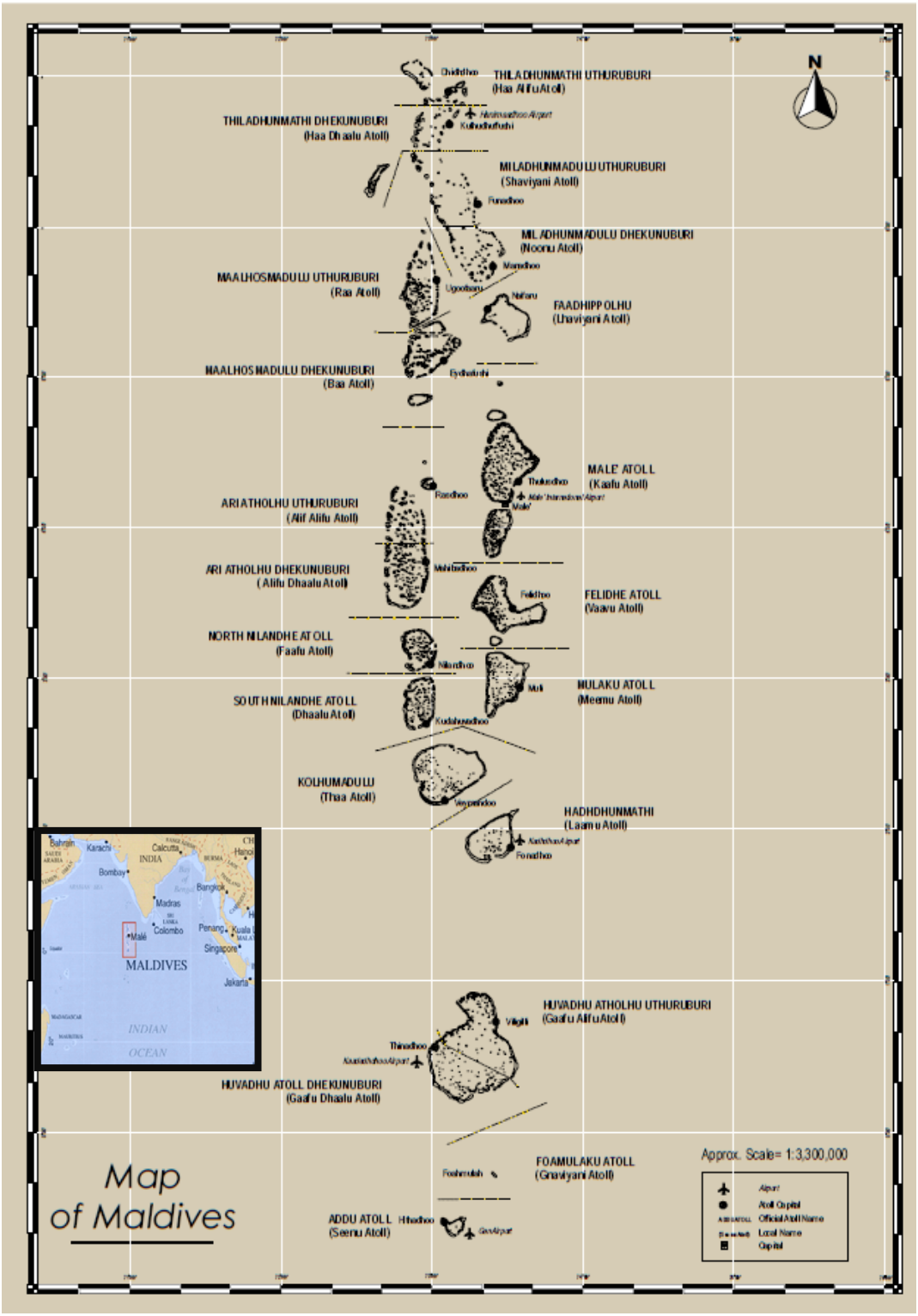
1.3.1 Country Background

The country's background presents a description of its geographical location, population and the capital city. Recent changes in the government and democracy of the country are also examined.

Geography

The Republic of Maldives is an archipelago of 1,192 islands situated vertically across the equator in the Indian Ocean, approximately 400 miles south west of Sri Lanka and the Indian subcontinent. The islands are low lying, no more than two to three metres above sea level, and cover a geographical area of 115,300 square kilometres, of which more than 95 per cent is water. With an average island size of less than half a square kilometre (Shareef, 2005), the country faces serious threats in terms of global warming, rising sea levels and natural disasters. An example is the damage from the Asian Tsunami of 2004, which completely washed away several islands with a cost estimated at 62 per cent of Gross Domestic Product (GDP) (MPND, 2005b). Figure 1.1 is a map of the country depicting the dispersion of the islands.

Figure 1.1: Map of the Republic of Maldives



Source: Large map adapted from MPND (2005b).
Insert adapted from *http://www.maldivesnet.com/wp-content/uploads/2007/12/maldives-map.gif*

Population and its Dispersion

The population of the Maldives estimated at 324,992 by the end of 2009 (MPND, 2010b) live on 196 administrative islands. Table 1.1, includes the number of islands categorised by various population sizes. More than 82 per cent of the islands have a population of less than 1,500 and merely two per cent of the islands house more than 5,000 inhabitants. The wide dispersion of population makes the provision of infrastructure and services a severe challenge for the Maldives' government, whilst the population size of the islands makes development projects unfeasible, since economies of scale cannot be achieved.

Table 1.1: Number of islands by population size

Population size	Number of islands
Less than 500	72
500 - 999	59
1000 – 1499	30
1500 - 4999	29
5000 - 9999	3
10000 and over	1

Source: MPND, 2007a. Adapted from http://www.planning.gov.mv/publications/census2006_island_level_tables/population/population/PP_05.htm

Despite the wide dispersion, the Maldivians enjoy their own distinctive lifestyle and culture with a common religion (Islam) and a common language (Dhivehi) which is unique to them.

Male', the Capital of the Maldives

Over a third of the population live in the capital, Male', an island comprising approximately two square kilometres, which is the focal point of all economic, social and political activities. Consequently, continuous internal migration has made it one of the world's most densely populated cities (Faisal, 2008). Figure 1.2 shows an aerial view of the capital, which is going through a boom time of high rise buildings.

Figure 1.2: An aerial view of Male', the capital of the Maldives

Source: Haval, 2011. http://www.worldofstock.com/closeups/TAN1254.php

Government: Democracy and Challenges

The Republic of Maldives follows a presidential system and it is one of the youngest democracies in the world. A new constitution was passed in August 2008, which resulted in the first multi-party presidential election (November 2008) leading to the end of the 30 year old presidency.

The islands, clustered into 26 natural atolls, have been grouped into 19 administrative units, also referred to as atolls, for the ease of administration. Where 'atolls' are mentioned in this thesis, it is in this administrative context. Each atoll has one capital island overseen by an atoll chief and each island has an island chief, who administers government activities. The new constitution mandates a decentralised administration for all islands and democratic elections for atolls and island councils. These will replace the government-appointed island and atoll chiefs. The first such elections are scheduled for February 2011 and this will bring about a historic change to the administration and governance of the islands.

The country faces severe challenges on its path to fully establishing democracy. There are aspects of politics that may make policy changes difficult. The root problem is the power struggle between the parliament (which is controlled by the opposition) and the president. According to 'The Economist'

> He [Mr Nasheed, the president] claims that an informal alliance of lawmakers is sabotaging his every proposal; an aide described it as "scorched-earth politics". The opposition has already passed an amendment which allows it to veto every lending or leasing agreement made between the government and an overseas party. Thus in one fell swoop it was able to scupper Mr Nasheed's planned privatisation of the capital's airport and much else besides. Hopes for foreign investment - at the core of the new government's ambitions and an essential part of its effort to plug the fiscal deficit - have been dashed. The parliamentary opposition had also threatened to kick out Mr Nasheed's ministers one by one, through a series of no-confidence votes. (Political crisis in the Maldives, 2010).

The volatile political atmosphere in the country and its influence on policy decisions indicates that systemic analysis - and informed debate on such decisions - is not given sufficient importance at all times. This can also mean that policies have to be relatively simple and it can be arduous to put in place any procedure which requires a series of developments and decisions.

1.3.2 Economic Background

This section presents a brief overview of the Maldivian economic background. It examines the country's development through the level and growth rates of its gross domestic product (GDP) in addition to highlighting the major sectors contributing to its development. The new directions in the government's role in the economy through the privatisation of state owned enterprises (SOEs) are also examined. Employment and unemployment trends together with the growing concern relating to expatriate employment are also presented.

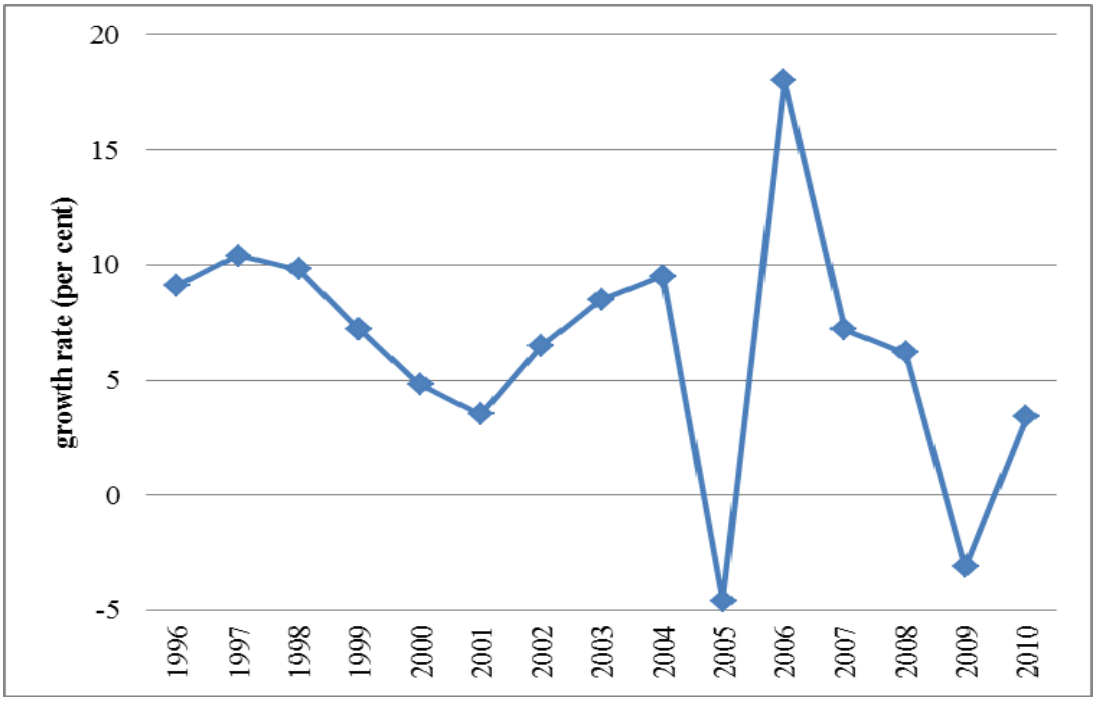
Gross Domestic Product

Despite its limited resources, the Maldives has shown impressive economic growth over the past three decades. When it gained independence in 1965 after being a British protectorate it was one of the poorest nations in South Asia but it has demonstrated an average growth rate of 7.2 per cent[1] for the period 1995-2009. This is a significant development when compared with the rising larger nations such as China, 9.9 per cent

[1] Researcher calculations based on data by MPND (2010b).
http://planning.gov.mv/yearbook2010/yearbook/key_indicators/19.14.htm

and India 6.74 per cent[2]. There were only two years with negative growth (2005 and 2009), which resulted from the Asian tsunami in 2004 and the 2008 global economic recession. Today the Maldives has one of the highest per capita incomes in the region with GDP per capita[3] for 2009 being US$ 4,157, and has been classified as 'upper middle income country' as of 1st of January 2011[4]. Figure 1.3 shows the path of GDP in the past fifteen years.

Figure 1.3: The growth rate of Gross Domestic Product, 1997 to 2010



Source: MPND, 2005a, 2010a.
Data accessed from: http://www.planning.gov.mv/publications/25yearsstats/25_yrs_stats/15_NationalAccount/15.3.htm and http://planning.gov.mv/yearbook2010/yearbook/16_nationalpercent20accounts/16.3.htm

Until the introduction of tourism in 1979, Maldivians had a subsistence economy, which was generally dependent on fishing and to some extent agriculture (Maniku, 2008). However, within the last two decades the tourism sector has developed and become the

[2] Based on data retrieved from: Euromonitor International from International Monetary Fund (IMF), International Financial Statistics and World Economic Outlook/UN/national statistics.
[3] At current market prices.
[4] The World Bank classifies countries according to Gross National Income per capita into low income, (US$995 or less), lower middle income, (US$996 - US$3,945), upper middle income (US$3,946 - US$12,195) and high income (US$12,196 or more) (The World Bank, 2011). GNI figures were not able, so GDP figures are used. In addition, this is a rough estimation, due to the effects of changes in price level and exchanges rates.

largest contributor accounting for one third of GDP (Maldives Monetary Authority, 2010), whilst manufacturing is the largest sector by employment (MPND, 2010a).

State Owned Enterprises

The government has major control over the economy through SOEs, thus limiting the scope of the private sector in the country's development (Hayashi, 2009). The newly elected president believes in a limited government role in businesses and he favours more market-based approaches. Thus, the government has begun to privatise SOEs under its Public-Private-Partnership (PPP) policy. The Privatisation of the International airport is in its final stage and the government is also seeking expressions of interest in relation to the turning over of state fisheries and electricity companies to the private sector (Hayashi, 2009). The privatisation of public schools has also been initiated with the aim of ensuring quality and choice in education.

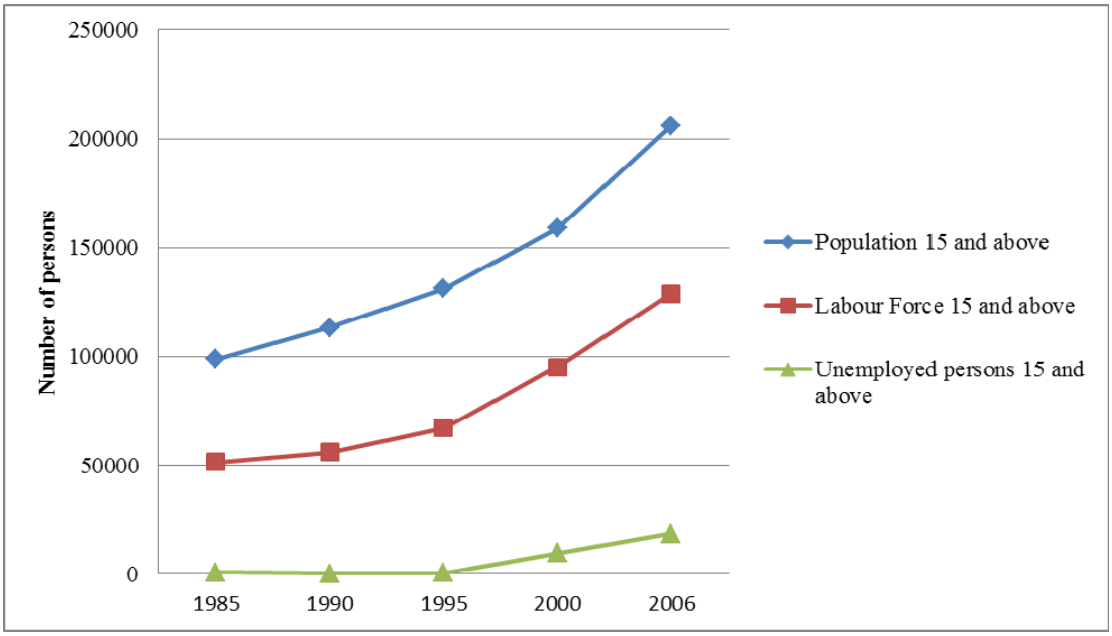
Employment

Although the population growth rate of the Maldives is falling (3.2 per cent for the period 1977-1985 and 1.7 per cent for the period 2001-2006) the population itself is still very young with a high dependency ratio of 56.8[5]. The working age population as a share of total population has increased from 55 per cent (in 2000) to 63 per cent (in 2006) (MPND, 2008). During the same period the labour force participation rate improved from 60 per cent to 64 per cent.

Figure 1.4 shows the growth trend of the working age population, labour force and unemployment. As seen in the figure, the unemployment rate had been zero throughout, until it jumped to 10.2 per cent in 2000 and 14.4 per cent in, 2006[6] (MPND, 2008). This is an indication that job creation has been unable to keep pace with the growth rate of the working age population. Another factor that contributed to this increase in unemployment is that the education sector failed to match the labour market requirements of the economy, since the growth of expatriate employment is also a growing concern.

[5] Per 100 persons age 15-64.
[6] The Census Analytical Report notes that there has been a change in the definition of 'unemployment' in the census for 2000 and 2006, which indicates that the previous figures may have been understated.

Figure 1.4: Growth trends of working age population, labour force and unemployment, 1985 to 2006



Source: MPND 2005a, 2008.

Common to most developing countries, the Maldives also suffers from a lack of human capital. The absence of a university[7] in the country and higher education or tertiary education in most of the islands coupled with limited opportunities for higher studies and vocational training, are the main 'bottle necks' for the required human resources. Moreover, locals do not work in elementary jobs due to low wages, poor working conditions, social perceptions and cultural factors (MPND, 2008). Since the Maldives lies amongst regions of excess labour in South Asia, its rapid economic growth followed by the development of a dynamic tourism sector and a boom in the construction industry has further heightened the inflow of unskilled foreign labour. According to the Ministry of Planning and Development (2008), expatriate employment accounts for one third of the total working population.

Being a highly import-dependent country with a narrow economic base of tourism and fishing, the economy is greatly sensitive to external shocks (Hayashi, 2009). There is a large gap between total exports and imports and this gap has continued to increase due to an increase in imports especially following the construction industry boom after 2004. This was (to some extent) due to infrastructure needed following the Asian

[7] The country's first university was inaugurated on the 15th of February 2011 (The President's Office, 2011).

Tsunami. The current account deficit was further increased as a result of an increase in prices of imports due to the recent upsurge in global commodity prices. The current account deficit for 2008 stood at US$ 647.3 million in 2008 (Maldives Monetary Authority, 2010).

1.3.3 Social Background

Over the years the Maldives has made remarkable improvements in its Human Development Index (HDI)[8] which in 2010 stood at 0.602. According to UNDP (2010), the Maldives is now classified in the medium human development category. This value is above the average of South Asian countries and also that of the other countries in the medium human development category. Life expectancy at birth now stands at 72.3 years, a 6.3 year increase since 2000. The adult literacy rate is 98.4 per cent, the highest in the region. However, mean years schooling (adult) is relatively low at 4.7 years.

Although the above numbers are reassuring, the country has serious social issues that need to be addressed. Drug abuse, gang violence, theft and robbery have increased at alarming rates, especially in the capital. From all the assault cases logged in 2010, 70 per cent were gang related and 30 per cent of all the arrests made in 2010 were drugs related (Maldives Police Service, 2010). According to Faisal (2008), the causes of these serious social issues are housing congestion (due to overcrowding) and increasing unemployment amongst the youth of the country.

With a Gini coefficient of 0.41 for the whole country, which is significantly higher than its neighbouring countries, income inequality between the capital and the atolls continues to widen (Hayashi, 2009). Decentralisation, which is at its preliminary stage, is believed to be able to reduce this gap and pave the way for economic development to be spread nationwide. Administration and governance directly through island and atoll councils is expected to reduce the hassles and lags of a centralised administration. The country awaits this transformation following the upcoming local council elections.

[8] An index that measures countries overall human development and their well-being. It ranks all countries from 0 to 1 (lowest human development to highest) based on three measures: longevity (life expectancy at birth; Knowledge (adult literacy rate); and standard of living (real per capita income adjusted for purchasing power parity) (Todaro and Smith, 2006).

1.3.4 Educational Background

Education plays a key role in the economic stability of a nation by increasing its human capital eventually leading to economic growth and an improved standard of living, hence it is of great importance to the Maldivians. Various policies including de-shifting have been implemented to improve the quality of education. An overview of the country's education sector is important to realise the effects of such policies.

This section begins with a review of the role of traditional education and the introduction of Western education in the country. This is followed by the structure of formal education and the curriculum. The types of schools and their respective enrolment levels are also presented, together with the teaching force's situation: local, expatriate and untrained categories. The main objectives behind the current education policies, including de-shifting, decentralisation and privatisation are also examined.

Traditional Educational Institutions and the Development of Western Education

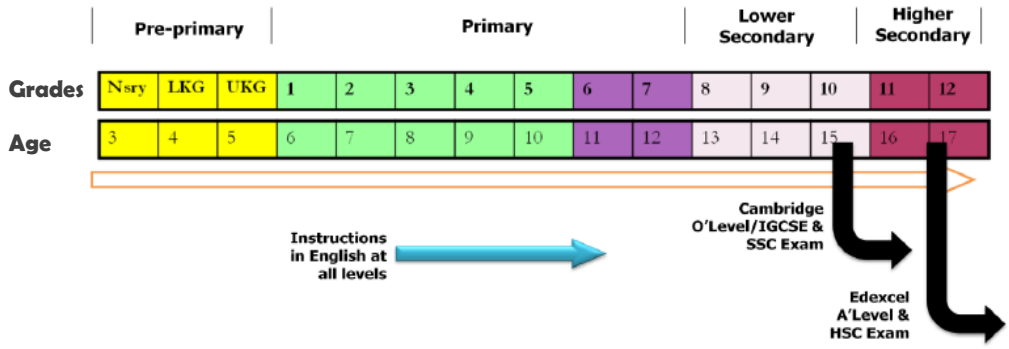
The traditional educational institutions of the country: *Edhuruge*, *Makhthab*, and *Madhrasa* have contributed towards the achievement of many educational objectives including a high rate of literacy and the preservation of the national culture and traditions (Zahira, 2005). According to Mohamed and Ahmed (1995), a Western style of schooling was introduced in Male' in 1966 as part of broader education initiatives. Its aim was to prepare individuals for training that they would receive overseas to meet the increasing developmental needs of the country. Since that period, the Maldives education system has been highly centralised. Decentralisation and privatisation in education has been initiated recently and this will be further examined in Chapter Five.

Formal education was mainly provided in the capital until the 1970s, when the government began expanding it to the atolls. However, the island schools were severely constrained in terms of a lack of trained teachers and resources, so their quality of education remained much lower than that in the capital (Zahira, 2005). This issue will also be examined in Chapter Five.

Structure of Formal Schooling

Schooling in the Maldives, as shown in Figure 1.6, has been structured on a 3-7-3-2 cycle: three years of pre-primary[9] followed by seven years of primary schooling, leading to three years of lower secondary school studies, followed by two years of higher secondary school studies[10]. The medium of instruction is English except for Islam (religious studies) and Dhivehi (the local language).

Figure 1.5: Education system at school level



Source: MOE Maldives, 2010a. Adapted from the 'Maldives Schools Information at a Glance 2010'.

Curriculum

Primary education in the Maldives is based on a national curriculum whereas secondary education follows an external curriculum. The secondary curriculum has three main streams which the students can choose form: science, arts and commerce. However, this choice is only available in the capital city and a few other schools with a high student population (Shareef, 2005). The remainder of the students have to study within the commerce stream.

At the end of the 3-year lower secondary cycle students either sit for Cambridge Ordinary (O) Level or International General Certificate School Examinations (IGCSE)

[9] These three years may be available only in the capital and the highly-populated islands (Didi, 2007).
[10] Since the beginning of the academic year 2011, the Ministry of Education has initiated a change in structure to a 3-10-2 cycle. This is intended to give students the benefit of completing primary and lower secondary education under the same roof.

whilst at the 2-year higher secondary cycle they take the EDEXCEL Advanced-level examinations. Equivalent examinations for local subjects at these levels are Secondary School Certificate (SSC) and Higher Secondary Certificate (HSC) examinations, respectively.

Types of Schools and their Enrolment

The Maldives school system is comprised of government, private and community owned schools. Government schools do not charge school fees. However, until recently parents had to bear the costs of text books, stationery and the examination fees. Government schools in the Maldives are 'better off' and considered to be 'prestigious' compared to private and community schools (Zahira, 2005). The current government has initiated privatisation of government schools under its PPP policy which will be discussed in Chapter Five.

The private and community schools generally provide pre-primary education (MOE Maldives, 2010b) and schools which serve higher levels are usually comprised of over-aged students and those who have dropped out from government schools. The Ministry of Education provides finance and resources for these schools, such as school buildings and teachers' salaries. Table 1.2 includes the percentage of schools and the respective enrolment levels for the different types of schools. It shows the majority of schools are government and these schools include over 80 per cent of the total school enrolment.

Table 1.2: Types of schools and their enrolment levels

Types of schools	Number of schools (percentage of total)	Percentage of total enrolment
Government	59	81
Community	18	11
Private	23	8

Source: MOE Maldives, 2010b

There is high enrolment at primary level (100 per cent) but enrolment at secondary level is significantly low due to inequality in access especially for higher secondary education in the atolls. In 2008, the net enrolment ratio (NER) for lower secondary was 69 per

cent whilst for higher secondary it was 6 per cent. This is further explored in Chapter Five together with details of enrolment trends at different levels from 1998 to 2008 as presented in Figure 5.1.

Teachers

The education system in the Maldives lacks local qualified teachers. The Faculty of Education (FE) under the Maldives College of Higher Education (MCHE) has been training teachers at primary level since 1977. This training was extended to diploma level in 1996 and recently to degree level (Zahira, 2005). However, supply of local teachers still falls short of the demand and the short fall has been made up through the use of expatriate and untrained teachers. The majority of these expatriate teachers come from neighbouring Sri Lanka, India and Pakistan. Table 1.3 includes the percentage of local and expatriate teachers at various levels of education. It indicates that 34 per cent of the teaching force are expatriates and they dominate lower and higher secondary education. These teachers are costly to employ as they are paid additional remuneration such as housing and living allowances (Nilsson, 2003). These high numbers also represent a large amount of outward remittances.

Table 1.3: Percentage of local and expatriate teachers at different levels of education, 2008

Level	Local	Expatriate
Pre-Primary	100	0
Primary	90	10
Lower Secondary	33	67
Higher Secondary	24	76
Total	**66**	**34**

Source: MOE Maldives, 2010b

A lack of qualified teachers is another challenge that the Maldives' education sector has to overcome. Over 30 per cent of the total teaching force is either untrained or temporary[11]. Table 1.4 includes the percentage of teachers classified under trained[12],

[11] Temporary teachers are most likely to be fresh school leavers without any training or experience.

untrained and temporary within the different levels of education. It shows that more than 70 per cent of teachers in pre-primary and over 40 per cent of teachers in the primary category are untrained.

Table 1.4: Percentage of trained, untrained and temporary teachers at different levels of education, 2008

Level	Trained	Untrained	Temporary
Pre-primary	27	53	20
Primary (Grades 1-7)	58	27	15
Lower Secondary (Grades 8-10)	94	5	1
Higher Secondary (11-12)	99	1	0
Total	**69**	**21**	**10**

Source: MOE Maldives, 2010b

Chapter Five further examines the situation of teachers related to the quality of education provided in the Maldives.

Current Education Policy

Since the inauguration of the new government, several policy changes have been initiated within the education sector. The president has affirmed that the ultimate goal of the government's education policy is to create a "perfect citizen". He characterised this to be a person who is self-sufficient and contributes to the economic development of the country (Goal of the government's education policy, 2010). According to this policy, this can be achieved through a well-rounded holistic education. This not only aims to increase the pass rate of students but it would also ensure that all students actively participate in literacy, sports and other social activities during their school life. One of the strategies under this policy is to de-shift the school system, the main focus of this thesis. In addition to this policy, decentralisation and privatisation is also on the agenda to increase stakeholders' participation and increase the contribution of the private sector to education. These policies will also be briefly analysed with respect to de-shifting.

[12] A teacher is considered trained if s/he attained a Maldives Accreditation Board accredited advanced certificate or a higher teaching qualification (MOE Maldives, 2010b).

Through the collective effects of all these policies the government believes that quality of education will improve.

1.4 Organisation of the Thesis

This thesis is comprised of six chapters. Chapter One provides an introduction to the thesis and it outlines the purpose and rationale for the study. A background of the Maldives, together with general information on its education and economic situation is also presented.

Chapter Two presents the comparative statics of shift-schooling. In addition, objectives behind the implementation of the DSS including its advantages and costs are analysed in comparison with the SSS system.

Chapter Three deals with de-shifting: the transition to a SSS system. A number of countries' cases are highlighted with their respective objectives, costs and the procedure adopted for the transition. Moreover, the effects of de-shifting and how additional time has been utilised will be examined.

Chapter Four begins with an analysis of school time along with school inputs such as teachers and the use of instructional technology followed by ways of ensuring an effective use of it. This chapter also examines other factors influencing student academic standards including parents, peers and time-out-of-school since effective use of these have been found to improve student performance. Alternative strategies to improve academic performance, probably at a lower cost, are also included.

Chapter Five considers shift-schooling and de-shifting within the Maldivian context. The impact of key issues raised in Chapters Two, Three and Four are discussed.

Finally, Chapter Six discusses the main findings. This chapter also includes policy implications, limitations of the research and recommendations for future research.

2 Double-shift Schooling: An Overview

2.1 Introduction and Overview

"Public education represents one of the largest expenditures undertaken by federal, state, and local governments, and hence the effectiveness of this spending is of vital importance to educational policy makers" (Eide & Showalter, 1998, p. 348). This efficient allocation of education resources is a particular concern for developing countries (Simmons & Alexander, 1978). These countries believe that DSS can save on costs whilst at the same time encompass other benefits — including educational, and economic ones. However, the same system has been found to have both direct and external costs: educational, social and economic.

Whether DSS is an efficient method can be analysed based on its costs and outcomes. Applying a straight cost-benefit analysis is problematic within education for reasons such as defining and measuring costs and outcomes, the presence of externalities, depreciation of capital, and time-lags (Hanushek, 1996). Costs from the production side are mainly categorised into fixed and variable costs whilst the outcomes, according to Belfield (2000), may be defined in several ways: programme completion, employment, enrolments, and student learning. Usually, assigning monetary values for educational products is difficult especially due to the presence of external benefits and the time-lags for the benefits to be realised. According to Bray (2008), the main proxy for outcome is educational attainment. Based only on academic achievements, the few studies available have indicated that in general, DSS does not negatively affect students' standards.

This chapter attempts to present an overview of double-shift schooling, beginning with its definitions and models. This is followed by an examination of the objectives behind this type of schooling and its potential costs. The following section offers a comparison of DSS and SSS, in addition to considering the differences between shifts within the DSS system.

2.1 Defining Double-shift Schools

DSS is the most common form of multiple-shift schooling, a term used to describe schools that cater for more than one set of students within the school day. Bray (1990a,

2008), one of the few scholars who has studied this practice, defined it as a system where a school facility is used by two entirely different sets of students at two different time periods during a school day, as opposed to the same students occupying the premises for the entire day[13]. This section underlines the difficulties in searching the literature due to the variations in terminology. Further, it highlights the different models under the DSS system.

Variations in Terminology

Nhundhu (1995) noted difficulties when searching the literature on DSS, due to the variations in terminology used which *include double-session, double timetable, bi-sessional, half day, shared time programs* and *split-half schools*. In addition, the system has been known by unusual names in various countries. According to Bray (2008), in Zimbabwe it is referred to as *hot seating*, a term reflecting the continued use of chairs throughout the school day whilst in Mexico teachers who teach both shifts are known as *taxi teacher* describing their rush to end one session in one school in the morning to get to another school in the afternoon.

Whilst the different terms are mainly interchangeable, differences in the meaning of the terminology in some countries makes a literature search even more difficult. According to Bray (2008), in Botswana there are actually three systems: the single-shift, the double-shift and the double-session. The single-shift and double-session have equivalent number of hours whereas the double-shift has a reduced number of hours per shift. In Uganda, the term double-shift refers to schools that accommodate the same grades both in the morning and afternoon whereas double-sessions refer to certain grades being taught in the morning and others in the afternoon. Moreover, the case in Buenos Aires, Argentina is confusing when double-shifts is actually used to imply that the same set of students are in school for both shifts meaning full day schools (Llach, Adrogué, & Gigaglia, 2009).

[13] Single-shift schools, which is also sometimes referred to as single-session, uni-session or full day schools. (See Bray 1990, 2008, London 1993).

Models of Double-Shift Schooling

As Bray (2008) highlighted, several models of DSS are possible although the most common are the overlapping and end-on shifts. In the overlapping system one group arrives before the previous group completes their school day whilst in the end-on type one group of students completes their lessons and vacate the premises before the next group arrives.

2.2 Objectives Behind Implementation of Double-shift Schools

This section examines the objectives behind the implementation of DSS. According to Kleinhans (2008), it has been a policy initiated by governments in developing countries to quantitatively expand their education system or simply to fulfil their pre-election pledges. He insists that for many countries the policy of DSS proved to be an effective temporary solution to the huge increase in demand for education following their countries' independence and democracy. Additionally, it helped achieve international obligations such as the Millennium Development Goals (MDGs) (Nhundhu, 1995). This section explores the educational and economic objectives behind the DSS.

2.2.1 Educational

This section explores the education objectives behind DSS the main aim of which is to improve access at a lower cost. Implementation of DSS on quality grounds since it enables a reduction of the student/teacher ratio thus allowing for the benefits of teaching small groups is also examined.

To Increase Access

The main objective behind DSS has been to increase student enrolments without straining the budget for additional investment in infrastructure. This has been particularly true in urban areas where for economic and social reasons, migration has strained existing facilities in populated areas. This is the case in Burundi where DSS was initiated in 1982 and enrolments increased by 256 per cent (Ministry of National Education, 1988, as cited in Eisemon et al., 1993). It is the same story in many other countries such as Hong Kong (Ho, 2006), Trinidad and Tobago (London, 1991) and

Chile (Delannoy, 2000). The practice of DSS is more common in developing countries although some wealthier countries have also adopted this system.

To Improve Quality

Double-shifts can result in a reduction in class sizes thus allowing for more personalised teaching (Bray, 1990a, 2008). However, the effect of class size on academic achievement is a debatable issue. A study based on American schools (Hoxby, 2000) and another study based on the majority of the developed countries (Wößmann, 2007) found that class size did not have a significant effect on attainment levels. A similar study by Asadullah (2005) based on 2165 secondary schools in Bangladesh, reached the same conclusion. The optimum class-size according to Michaelowa (2001) is 100 students beyond which he believes that the negative effects of large class sizes begin to arise and at that time double-shifts can be considered.

2.2.2 Economic

Developing countries wanting to implement DSS believe that it saves on costs and thus, they consider it to have economic advantages over SSS. According to Kleinhans (2008), it helps to cope with the issue of limited classroom space and limited educational budgets. This section examines economic advantages of DSS for its stakeholders: savings on costs means of additional income for teachers and reducing the opportunity cost of schooling for children.

Savings on Capital and Recurrent Costs

One of the most obvious savings within the shift system would be that of capital costs: school buildings, equipment, libraries, laboratories and other facilities. Table 2.1 shows the magnitude of reduction in costs as a result of the implementation of DSS in some countries. It indicates that savings on capital costs could be as much as 50 per cent as seen in the case of Zambia. Although this includes the use of double-shifts and triple-shifts (The World Bank, 1995), in countries such as the Maldives and Chile where almost all the schools were on double-shifts, the infrastructure costs in education could be reduced by as much as half when compared to SSS.

Table 2.1: Percentage savings in capital and recurrent costs as a result of the implementation of double-shift schools

Country	Percentage savings		Author
	Capital	Recurrent	
Tanzania	40	20	Davidson (2004)
Trinidad and Tobago	40	40	London (1993)
Jamaica	33	33	Leo-Rhynie et al; (1981, as cited in Bray, 1990)
Malaysia	25		Beebout (1972, as cited in Bray, 1990)
Zambia	50		World Bank (1995)

Table 2.1 also indicates that substantial savings on recurrent costs, which mainly consist of teacher and administrative staff salaries, is possible under DSS depending on the conditions put in place (London 1991). For example, if teachers are willing to work both shifts without doubling their salaries then savings would be possible. Such is the case in Senegal (UNDP, 1991) and Uganda (Kleinhans, 2004), where teachers were paid 25 per cent of their salary for their work in the second shift. In Mozambique, teachers were paid 60 per cent of their basic salary (Mulkeen & African Region World Bank, 2005). Moreover, Bray (1990b, 2008) remarked that even if teachers who worked both shifts were paid double salaries the system would still save on teachers' accommodation[14] and training. The cost of administrative staff could also be reduced if the same staff members covered both sessions. Furthermore, the costs of security and labour such as cleaning staff would also be saved since double-shift schools would be occupied for most of the day.

[14] Where employers are required to provide this.

Additional Income for Teachers

Developing countries often offer very low teacher salaries (Osin, 1998). Consequently, their teachers have to engage in a second job, to supplement their income. DSS provides the opportunity for teachers to work in both shifts and thereby increase their earnings. A number of examples from countries where teachers work double-shifts and receive an additional percentage of their salary, have already been mentioned in the previous section, *Savings on Capital and Recurrent Costs*.

Reduces Opportunity Cost of Schooling for Children

One reason for lower school enrolments in developing countries especially in rural areas is due to the opportunity cost of schooling for students and their parents. These students often have to choose between attending school or meeting their family and community obligations (Kea, 2007). This is the reason why DSS is particularly attractive to parents in poor rural areas where school-aged children undertake paid or unremunerated work or household duties. Allowing children to fit both work and school into their schedule is one of the policy objectives of DSS in The Gambia where school-aged girls were facing difficulty in attending school due to their household and 'gendered labour obligations'. These responsibilities, which are highly valued and considered mandatory by families and the community, included daily work in community groups, which only consisted of females. However, with the introduction of DSS in 1990 the enrolment of girls increased considerably because they were able to go to school for one half of the day and attend to their household and gendered labour obligations during the other half (Kea, 2007). In addition, in some parts of the world school-aged children have to be involved in paid activities due to their families' lower income status. Many students attending DSS in Mexico take up jobs such as car washing and selling new papers (Denham, 2009). In countries such as the Maldives, students from the higher grades are paid to give private tuition to students in lower grades (Mohamed, 2006).

However, Kea (2007) believed that child employment is in conflict with international agreements and policies which call for a reduction in child labour by increasing their access to schools. According to Admassie (2003) and Steinberg (1993), child employment (beyond 20 hours per week) interferes with schooling by absorbing too much of the child's time and energy and thus it reducing her/his academic achievement.

DSS is primarily implemented to meet increasing demands for access during a phase of limited placements. It is seen as an economic measure to meet the high demand for school enrolments. Whilst it saves on costs, it also supplies opportunities and time for teachers and students to earn additional income, or to attend to their family or community requirements. However, the system places direct and external costs on the education system, families and societies. In addition, it has been observed that it is inconvenient for its stakeholders. The following section further specifies these costs and inconveniences.

2.3 Costs of Double-shift Schooling

The previous section highlighted the advantages of DSS, especially the increase in access to education whilst at the same time reduce costs. However, it is believed that DSS incurs additional maintenance costs including wear and tear due to excess utilisation of buildings and equipment when compared with SSS (Bray, 1990a, 2008; Linden, 2001). In this respect, Fowkes (1969) asserted that double-shifts means double expenses since the costs of electricity, light and maintenance tended to be double. In addition, there are several other direct educational costs and external costs to parents and society. Furthermore, it imposes several inconveniences on stakeholders. The remainder of this section examines these costs.

2.3.1 Educational Costs

DSS imposes several educational costs and therefore some educationalists believe that it is inferior (Bray, 1990b, 2008; Linden, 2001). It is important to examine this belief since the success of the measure depends on the quality of output, which tends to be lower due the presence of these costs. This section examines three of these costs: reduction in school time, narrowing of the curriculum, and reduction in the quality of teaching.

Reduction in Instructional Time

One of the threats of DSS, according to Kleinhans (2004), is the possibility of 'losing out' on classroom time. Table 2.2 compares weekly instructional time between single-

shift and double-shift-schools in nineteen countries[15]. In some countries such as Bangladesh and Sierra Leone this instructional time has fallen below the minimum requirement of the educational authorities as a result of the implementation of DSS. An extreme case was noted in Burundi, where there was only three hours per school day. Kim (1999, as cited in Abadzi, 2009) estimated a 19-30 per cent loss of time in African countries with the introduction of DSS. According to Eisemon et al (1993), this limited instructional time is occasionally compensated for by combining classes and shifts which makes it difficult to teach reading and communication skills .

This loss of instructional hours, particularly at primary level, has a 'knock-on' effect in higher level education such as colleges and universities. Khan (2007) noted that in Bangladesh (which according to the above table has the highest difference between shifts) students reaching these higher levels lacked foundational knowledge as a result of their limited time in primary schools. In addition to formal classroom time, DSS leads to a reduction in informal interaction time with peers thus hindering the social development of the child (Batra, 1998).

Table 2.2: Comparing the average weekly instructional time (in hours and minutes) in single-shift and double-shift schools, in 20 countries

Country		Single-shift	Double-shift
Bangladesh	Junior	38 hours 25 mins	22 hours 30 mins
	senior	23 hours 30 mins	16 hours 30 mins
Burkina Faso		30 hours 00 mins	21 hours 00 mins
Burundi*			15 hours 00 mins
Egypt*		32 hours 30 mins	25 hours 00 mins
Eritrea	Junior	20 hours 00 mins	20 hours 00 mins
	senior	23 hours 20 mins	23 hours 20 mins
The Gambia		26 hours 00 mins	23 hours 24 mins
Ghana		22 hours 55 mins	19 hours 35 mins
Hong Kong		23 hours 20 mins	22 hours 10 mins
Jamaica		25 hours 00 mins	22 hours 30 mins
India*		30 hours 00 mins	17 hours 30 mins

[15] For Burundi, only the information on double-shifts was available.

Kenya*		40 hours 00 mins	20 hours 00 mins
Laos	Junior	19 hours 00 mins	19 hours 00 mins
	senior	22 hours 00 mins	22 hours 00 mins
Myanmar		25 hours 00 mins	25 hours 00 mins
Nigeria, Imo State		22 hours 05 mins	22 hours 05 mins
Philippines	Junior	25 hours 20 mins	23 hours 20 mins
	senior	30 hours 10 mins	24 hours 10 mins
Senegal		28 hours 00 mins	20 hours 00 mins
Sierra Leone[16]*	primary	17 hours 30 mins	20 hours 20 mins
Singapore	junior	22 hours 30 mins	22 hours 30 mins
	senior	24 hours 30 mins	24 hours 30 mins
Zambia	junior	20 hours 25 mins	20 hours 25 mins
	senior	26 hours 40 mins	26 hours 40 mins

Note: This table is based on Table 4.1 from Bray (2008) with additional material added from Batra (1998), Mensch & Lloyd (1998)and The World Bank (2006)
*School days were multiplied by five using the assumption that these countries follow a five day school week.

Narrowing of the Curriculum

In New Zealand the aims and objectives of education are categorised into three functions which need to be combined for the all-round development of children (The Treasury, 1987): *individual, society* and *the economy*. The *individual* function deals with satisfying the individual by developing the innate and hidden skills whilst the function of *society* is concerned with uniting the individual to the community, by instilling in her/him the values and responsibilities of that society. The *economic* function ensures that the individual develops the skills and ability to take on her/his economic role, through a career or a job.

Schools, as a result of their curriculum, aim to provide this holistic development of students. Whilst the importance given to core subjects such as language and mathematics remain more or less same, it is the other subjects which contribute to this development that suffer under DSS (Bray, 2008). These subjects may include technical

[16] The annual instructional hours for the double-shift schools of Sierra Leone[16] fell below the 'Education for All' Fast track Initiative (FTI) bench mark of more than 850 hours (The World Bank, 2006).

and vocational subjects (which contribute to the *individual* and *economic* aim), moral and civic education and music and sports activities that develop the function of *society*.

Reduction in Quality of Teaching

Under the DSS, the quality of teaching is perceived to be lower due to the limited time and teacher burnout. These are examined below.

Limited Time: Teachers in the DSS system claim that there is not sufficient time to effectively teach all subjects in the syllabus (K. Michaelowa, 2002). This was found in a study based on student achievement in Burkina Faso, Cameroon, Côte d'Ivoire, Madagascar and Senegal. However, it is apparent from Table 2.2 that for countries such as Eritrea, Laos, Myanmar and Singapore, DSS operated with the same instructional time as SSS.

Teacher Burnout: Van Dick and Wagner (2001) demonstrated that an increase in workload increases the stress on teachers. This may be the reason why teachers who work both shifts, especially in different institutions are not able to contribute to educational effectiveness (Llach et al., 2009). This has been confirmed by Nishimuko (2007), who found that by having to work both shifts teachers are under pressure since the longer working day hardly leaves time for lesson preparation. For example, teachers working double shifts would not only be exhausted from the additional hours, they would also be distracted from their work in their attempts to complete one shift and rush to the next shift which may be in a different location — as seen in the 'taxi teachers' in Mexico. This may be the reason behind Batra's (1998) findings, which showed that 83 per cent of teachers believed that if they work both shifts one shift will inevitably suffer. The introduction of double-shifts in order to overcome the shortage of teachers in Tanzania resulted in more untaught classes. The teachers did not turn up for some of the extra classes since they were not fully compensated for their extra work (Davidson, 2004).

A lowering of the quality of teaching due to lack of financial incentives can be overcome by the enforcement of proper compensation. Situations where teacher burnout affects the quality of teaching can be reduced or eliminated depending on the arrangement of classes or subjects taught by these teachers. A major portion of a teacher's load is preparation time. Teachers working under a double-shift system may

have a double workload in terms of the number of teaching hours. However, their actual work load can be considerably less, since they can transfer preparation time from the first shift to the second shift using the same content. Repeating the same content can also be beneficial for the second group since the teacher can modify his/her explanation according to feedback from the first class and thus the teaching can be improved. Teaching the same content for a number of times in a day may also be easier, depending on the subject. Mathematics, for example, is less problematic and marking loads should not be significantly affected by the number of students compared to subjects such as languages. Schools should be able to decide which teachers (in which subjects) are in a position to teach double-shifts.

This section examined the possible educational costs of DSS. A reduction of instructional time, narrowing of the curriculum and a lowering of the quality of teaching were some of these costs. Although for some countries' cases, instructional time under DSS was lower compared to SSS, there are many countries which accommodate the same number of hours under both systems. Core academic subjects are given equal importance under DSS, however, those that contribute to all round development may not be offered due to limited time. With acceptable financial compensation and organisation of subjects and classes amongst teachers, DSS can operate without hindering the quality of teaching. The following section examines some external costs that have been ensued under DSS.

2.3.2 External Costs

As pointed out by Bray (2008) DSS imposes several external costs to the parents and society. This section looks into the cost of child-minding, private tuition, and increase in juvenile crime that has been a consequence of DSS in some countries.

Cost of Child-Minding

One impact of DSS is the extended period of time in which children are not supervised by the school or parents due to their working day not coinciding with the school day. The implications are increased costs for working parents in terms of child-minding services (such as baby-sitting) and post school activities. These costs may increase the opportunity cost of employment for mothers and thus lead to a reduction in the participation of women in the labour force.

Cost of Private Tuition

Section 2.3.1 mentioned several educational costs including a reduction in instructional time and narrowing of the curriculum. In order to compensate for this, parents have resorted to private tutoring, a dramatically growing phenomenon worldwide (Abadzi, 2009). In developing countries, 'rent-seeking' by teachers has further exacerbated this issue (Glewwe & Jayachandran, 2006). Some teachers in Ajerbaijan (Silova & Kazimzade, 2006) and Sri Lanka (Glewwe & Jayachandran, 2006) deliberately avoid teaching the full syllabus. They claim time pressure issues when actually their motive is to encourage students to have private lessons, increasing the teachers' earning potential. This has the risk of private tuition being 'complementary' to formal schooling. In this case, DSS further increases educational inequality between the rich and the poor.

In order to reduce such rent-seeking behaviour, some educational authorities such as those in Singapore and Jamaica prohibit teachers from working in more than one shift or giving private tuition to students they teach (Bray, 1990a, 2008). Nonetheless, DSS may be just one of the reasons for this trend in private tuition. From parents' and students' perspectives, the increase in competition for higher education places is another major factor that has led to an increase in private tuition.

Social Costs

In societies where children do not find work, or they are left unsupervised during out-of school hours, idle time has led to various social problems. According to Hunyepa (2005, as cited in Bray, 2008), the increasing incidences of drugs and alcohol and juvenile crime has been a consequence of DSS system in Botswana. Similarly, Homel (1984) claimed that the shift school system has enabled the black adolescents of Chicago to get into all types of delinquent behaviour. He insists that the half-day school has also turned out to be a half-day on the streets which has become an initial step towards juvenile crime. Social consequences, such as indiscipline, truancy and loitering in town, were the reasons why 98 per cent of parents were opposed to DSS[17] in Uganda (Kleinhans, 2004) and the reason for de-shifting in Trinidad and Tobago (London, 1991).

[17] Found in a survey carried out to identify attitudes towards DSS by its stakeholders, two years after the implementation of the policy.

This section looked into the indirect costs of the DSS system. It has the potential to increase the opportunity cost of working mothers in terms of child-minding for the part of the day when the children are not in school. DSS has also led to an increase in demand for private tuition which further increases the gap between the rich and the poor. In addition, the system is blamed for an increase in juvenile crime in some countries. Moreover, it imposes several inconveniences on its stakeholders which are examined in the following section.

2.3.3 Inconvenience of the Double-shift System to its Stakeholders

Limited classroom hours, official school timing and the tight schedule under DSS impose a number of problems for stakeholders. This section explores the inconveniences for staff and management, teachers, students and parents.

Staff and Management

The management of schools may find it difficult to arrange staff meetings at a time during the day when all the teachers would be able to attend. The same situation applies for students when conducting extracurricular activities. According to Bray (2008), this can be solved by having meetings and activities during weekends. However, it is unlikely that this option will be welcomed by teachers, students or even parents.

With the whole day occupied by teaching, there is no time to implement staff development programmes or sports and recreational activities. As a consequence, staff members lack the loyalty and sense of belonging which are crucial for both their job satisfaction and the development of the institution. Furthermore, a study based on Mexico by Denham (2009) and another based on Hong Kong by Yim (1990) noted that the head teachers of the morning sessions had more responsibility and influence than the head teachers of the afternoon sessions and hence, there is a tendency for the morning shift to dominate. This creates tensions between the management of shifts.

Parents

With school times not aligning with the working times of parents, DSS is particularly inconvenient for parents who have children attending different shifts (M. C. Williams, 1976). A survey conducted by Nhundu (2000) in Zimbabwe revealed that 77 per cent of

head teachers and 75 per cent of teachers reported parents holding negative attitudes towards double-shift schools. It was also found that parents were strongly against the shifts and that they were willing to contribute to the construction of additional classrooms to end the system.

Students

As for the students, their school day seems to be prolonged by having to stay back, or they have to return to school later in the evenings or at weekends for extra and co-curricular activities. In addition, Michealowa (2002) found that the timing of DSS may be problematic for students, with respect to climate (afternoon heat) or life rhythms, such as a student on an early shift perhaps having to skip breakfast since schools begin as early as 6.30am. This is the reason why students studying in the early shift cannot concentrate in the classroom (Batra, 1998), despite their preference for the morning shift.

Similar to the case of the teachers mentioned above, a lack of interaction between shifts paves the way for hostility and imbalance between the students. In addition, if higher grades[18] or students from higher academic or economic backgrounds[19] are allocated to the morning session, they may feel superior to their afternoon counterparts. Moreover, a loss of control over the classroom environment and equipment, such as the disruption of seating arrangements and lost property are further issues faced by teachers and students within the shift system. Batra (1998) believed that such mishandling of school furniture and equipment is due to a lack of a sense of ownership which needs to be overcome.

This section explored several costs related directly to education in terms of quality and maintenance and external costs imposed on parents and society. In general, all parties concerned found DSS to be a 'rushed' process: everyone rushes to get to school for an early start, then they rush to vacate the premises for the next shift (Williams, 1976) to a point that London (1994a) believed it has had a destabilising effect on societal norms, by interfering in the daily living routines of families, which in turn has had adverse effects on other tiers of society. The net benefit of DSS will depend on its output, is

[18] Such as the case of the Maldives. Bray (2008) suggested a grades rotating scheme as an alternative, where one student who attended the morning session would then attend the afternoon session in the following year.
[19] Such as the case of Mexico.

usually measured in terms of student performance compared to SSS. This is presented in the following section.

2.4 Comparison Between the Two Systems

Few studies have been conducted to identify if there is any negative effect from a shift system on the academic standards of students. These studies have not generally indicated whether one system is better than the other. A number of different countries' cases found that DSS had not affected the overall performance of students and these are summarised in Table 2.3 below.

Table 2.3: Countries' cases where DSS did not affect performance level

Country	School level	Details	Author
Western Australia	High School	Based on parents' feedback	Williams (1976)
Hong Kong		A general study conducted to identify the change in academic performance between double- and single-shift schools	Yim (1989)
Brazil	Primary	Based on literacy levels in the first two years of primary school	Fuller and Clarke (1994)
Chile	Secondary	Based on the academic performance of 353 Grade 8 students	Farrel and Schiefelbein (1974 as cited in Bray 2008)
Florida, United States of America	High School	No significant effect on the achievement levels of average and above average students	Diwan (2002)

Although Table 2.3 indicated countries' cases that found DSS did not hinder educational output, there are a few countries' situations which have found otherwise. One study where DSS was found to negatively affect attainment levels was undertaken in Utah (USA) where 79 per cent of students (from grades one to six) were promoted to the next grade in DSS, compared to 89 per cent for SSS (Hollingshead, 1939). In addition, it was found that DSS led to poor academic performance in Cote d'Ivoire

(Obanya & Touré, 2003) and in Tanzania (Mbelle, 2008) although details are not available.

The countries' cases mentioned above, which indicate DSS hindering academic standards and those in Table 2.3 showing that DSS did not in general affect achievement levels cannot be generalised for four reasons. Firstly, details of the studies such as the significance levels were not available. Secondly, the studies focussed only on one or two subjects such as mathematics and language which administrators considered to be important, irrespective of the number of shifts the schools operated (Bray, 1990a). For a general conclusion, the effects on other subjects need to also be considered. Thirdly, the studies did not consider the effect of other schooling variables and other factors which affect student performance. The characteristics of students, peer influence, type of school management their quality of teaching, and the availability of resources, are some aspects within the school system, which can all have a significant influence on teaching and learning. In addition, elements outside the school spectrum such as parents, private tuition and a child's socio-economic background also affect performance. Ignoring these other inputs usually leads to biased results (Hanushek, 1996). Finally, administrative factors such as discrimination in the allocation of students to schools are also significant factors. According to London (1991), student allocation to schools in Trinidad and Tobago was such that high scoring students were assigned to the nation's prestigious schools, which all implement a single shift, the lowest scorers were placed in double-shift schools which (in that country) rank low in popular esteem as educational institutions. This discriminatory streaming of students naturally led the single-shift schools to perform better than the double-shift schools.

This section examined whether DSS leads to a reduction in the quality of output in terms of academic achievements. Academic comparison between DSS and SSS cannot be fully understood due to the limited research. Whilst most of the studies mentioned indicated that implementation of DSS does not lead to a lowering of academic standards these cannot be generalised. The studies were based on core subjects and they did not include the effect of other variables which affect student performance. The following section compares the morning and afternoon shift in terms of academic achievement and stakeholders' perception towards these shifts.

2.4.1 Comparison Between Shifts: Morning and Afternoon

This section explores the differences between shifts. Whether there is a difference in performance level between the shifts is examined, together with stakeholders' perceptions towards shifts.

Academic Comparison

This area also suffers from limited research. Denham (2009) has been one of the few researchers to study (in depth) the difference between shifts. There were four key findings from his research which compared two shifts operating in the same buildings in Mexico. Firstly, the afternoon shift had a higher percentage of low income students. Secondly, the morning shift had more access to educational materials. As a third factor, the afternoon shift included students with lower test scores and a higher percentage of students in the lowest performance level of curriculum, based on tests in mathematics and language[20]. Consequently, as the final point, the afternoon shift suffered more from a higher failure rate, more over-age students and higher dropout rates. This is also in line with Palafox et al. (1994), who surveyed 34,422 randomly selected Mexican primary school children. They found that the morning shift children performed better than those in the afternoon shift. Similarly, a study by Dia (2003, as cited in Abadzi, 2009) suggested that the late-shift suffers the most (due to DSS) in Guinea and Burkina Faso and this is bound to have a negative impact on children's achievement levels.

However, the reason may not be due to the fact that teaching and learning is occurring in the afternoon. Both Denham (2009) and Palafox et al. (1994) cautioned that their results do not indicate that the morning shift is of a higher quality, rather, it is the discriminating factor in allocating students to the shifts which explains the academic difference. Students with higher achievement scores, who usually come from family backgrounds that are educationally and financially well off, were assigned to the morning shift thus discriminating between the shifts.

[20] According to Denham (2009), the selection process for the double-shift schools leaves a concentration of the neediest students in the afternoon sessions and teachers in the afternoon have to mainly deal with exhausted students, who have been involved in paid activities during the morning.

Perceptions Towards Shifts

Another disadvantage for the late shift may be the teachers themselves. Those working during the afternoons — and in particular those that teach in both shifts — are not punctual and they do not have the attitude that a devoted teacher should possess towards their afternoon shifts (Slater et al., 2005; Denham, 2009). This has become a chronic problem in afternoon shift schools in Mexico. Abadzi (2009) found that afternoon shifts wasted more time and she mentioned a report conducted in the Dominican Republic where it was observed that afternoon shifts used 58 per cent of the intended time for learning activities whilst morning shifts used 73 per cent.

The few studies on attitudes of stakeholders to both morning and afternoon shifts have indicated that the majority prefer the morning shift. Surveys conducted with shift school teachers in Delhi, India by Diwan (2002) and in Zimbabwe by Nhundu (2000) found a high proportion of teachers preferred the morning sessions. Yim (1990) believed that morning sessions are more popular in Hong Kong because students and teachers feel fresher and better able to concentrate during the mornings. On the same note, Bray (2008) suggested that teachers and students are unenthusiastic about attending schools on hot afternoons in tropical countries.

Societal, parental and schools' negative perceptions of the afternoon shift may be explained by the student allocation procedure and teacher characteristics. In his research on Morelos Secondary School in Mexico in 2002-2004, Saucedo (2006) found that children in the afternoon shift were labelled as problematic, whilst those in the morning shift were considered to be obedient and well behaved. This could explain the preference for the morning shift in Carine High School, Western Australia (Williams, 1976) where 80 per cent of the students liked the early shift because it allowed them plenty of time for play and homework after school. Seventy five per cent of the parents in this study favoured the early shift claiming that children who rise earlier are fresher for school in the mornings and more leisure and study time is available to them after school. It is also believed that parents prefer the morning shift since it allows them to spend more time with their children (Cheung, 1995).

Whether someone is attending the morning or afternoon shift, their day will begin in the early morning. Therefore, both teachers and students are usually already tired by the

time their formal school day starts in the afternoon. According to Admassie (2003), the performance and motivation level of both students and teachers decreases in the afternoon, thus negatively affecting their work.

2.5 Conclusion

DSS is a tool that has significantly enhanced access to education, thus limiting the strain on education budgets. Whilst it saves on costs and increases employment opportunities for teachers and students, it is sometimes considered inferior to SSS, since there are educational, and external financial and social costs associated with it. Although the majority of the studies mentioned have indicated that there is no difference between the two systems, in the performance of core subjects a reduction in instructional time has led to the sacrifice of important subjects required to fulfil all the functions of education.

There is a consensus that the morning shift is preferable on the grounds that all parties are energetic and fresh in the morning, thus fostering teaching and learning. Moreover, when school timing and parents' working times align together, as in the case of full day schooling, it saves the cost of child-minding. It also reduces the social cost of unsupervised children wandering about the streets and allows family time together, an important aspect of society's wellbeing. However, it has been found that discrimination in streaming students to schools and to shifts may be the reason behind the cases where DSS was found to have educational and social costs. This is the reason why Bray (1990a, 2008) believed that with proper management and organization, double-shift schools can be academically as desirable as single-shift ones.

Finally, in relation to the first research question — *Do single-shift schools provide a better academic outcome than double-shift schools*? — the information presented in this chapter does not clearly indicate that one is better than the other. This conclusion, however, may be biased due to several reasons. It is built on only a few studies and these are based on core subjects. Most of the details required for a proper analysis, such as level of education, grades, significance level of the results, are not available. In addition, the influence of many important variables such as quality of teachers, students' socio-economic background and the influence of parents and peers, has not been taken into account. Furthermore, discrimination in allocating students to schools and to shifts also affected the results.

DSS has been seen as inferior, partly due to its organisation. It is also perceived to be in conflict with the functions of education, thus imposing external costs on family and society. These factors have led countries to abolish the system, as soon as conditions have permitted. The following chapter examines this process of *de-shifting.*

3 De-shifting: Issues and Experience

3.1 Introduction and Overview

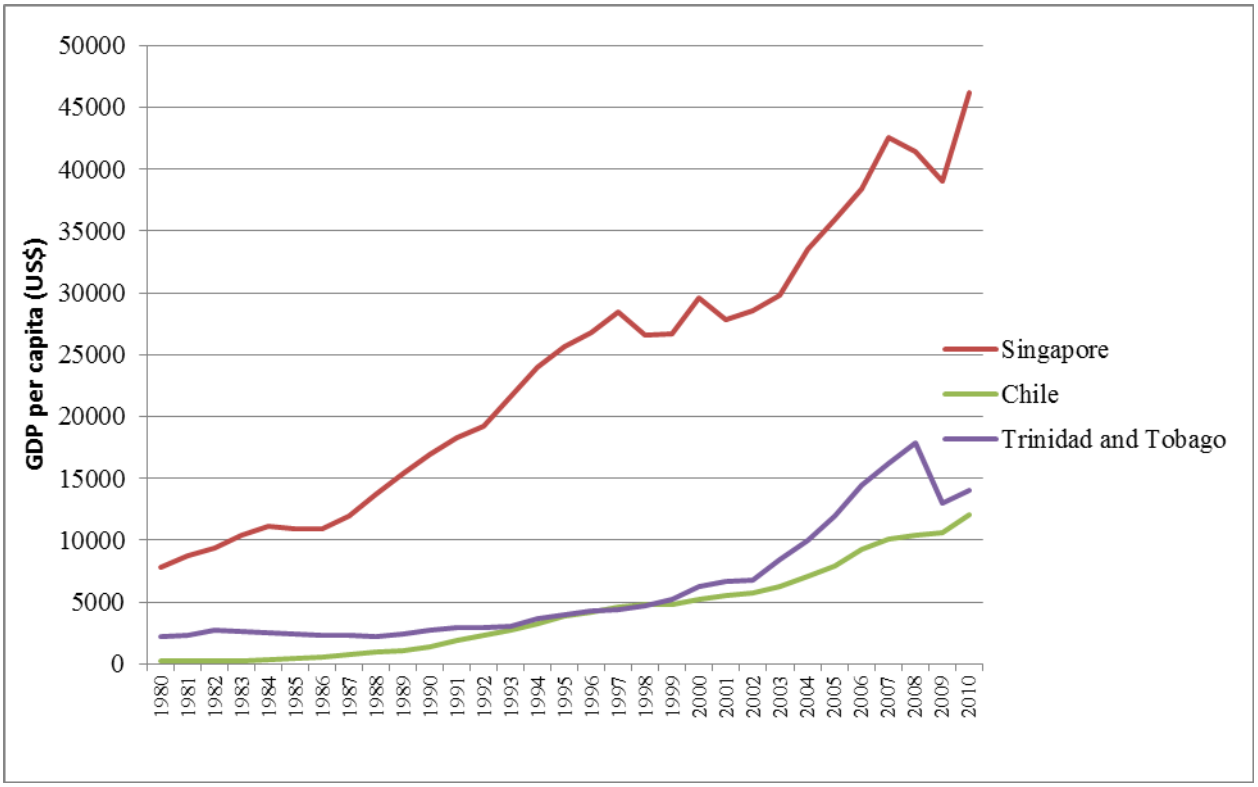
The previous chapter presented an overview of DSS and it specifically examined the benefits and costs of the measure. It also compared its output with that of SSS and found that implementation of the shift system does not affect academic performance in general, although the effects of other variables need to be taken into consideration when drawing conclusions. However, DSS was perceived to impose social and economic costs and these have led countries to de-shift, converting double-shift schools to single-shifts ones with the purpose of increasing the number of daily instructional hours. This process requires an enormous investment, especially if a major proportion of schools are on double shifts. De-shifting, while producing a favourable level of social and economic conditions, does not improve academic performance to the same extent.

This chapter examines this conversion within the experiences of a few countries' cases, primarily the Full School Day (FSD) in Chile, de-shifting in Trinidad and Tobago and conversion to a single-session school system in Singapore. In order to analyse how these countries' cases can be related to the special focus of this thesis, a general overview of these countries' economic circumstances is important. This is presented in the following section. This is followed by the specific objectives behind these countries' policies of de-shifting. The organisation and procedure of the transition are then presented followed by the associated costs. This in turn leads to an analysis of the outcomes and the means by which the additional time was utilised. This is not, however, limited to just these countries' cases. The final section summarises the findings and answers Research Question Three, *Given these costs, is the transition justifiable*?

3.2 Economic Overview of the Countries' Cases

For drawing conclusions based on de-shifting experience of country cases and assessing their relevance to the focus of the thesis, the Maldivian situation, requires background knowledge of the economic situation of these countries which is presented in Figure 3.2.

Figure 3.1: GDP per capita of the country cases (at current US$)



Sourced from: Per Capita GDP: International Monetary Fund, International Financial Statistics (GMID, 2011).

At the beginning of the transition period in 1997, Chile's per capita GDP was approximately US$ 5,000. In Trinidad and Tobago the majority of the schools were de-shifted between 2003 and 2010 and during this period its GDP per capita was well above US$ 7,000. In Singapore de-shifting was initiated in 2009 and its GDP was approximately US$ 39,000. Amongst these countries, Chile and Trinidad and Tobago were in the upper middle income status and Singapore in the high income category at the time of the conversion. Due to their economic status these countries might not face major financial constraints. In addition, it should be noted that in the case of developed countries such as Singapore and Chile, they may have a highly educated population base which would also have reduced the constraints of obtaining the required personnel for their developmental needs. For example, acquiring a qualified teaching force might not have been an issue.

3.3 Objectives Behind De-shifting

In many countries DSS was implemented as a temporary measure to solve an increased demand for education. Due to the costs mentioned in Section 2.4, de-shifting has been part of many countries' plans when the conditions were suitable. Table 3.1 presents four countries' cases and their main objective for de-shifting. It also includes the specific aims, by which the main goal is to be achieved.

Table 3.1: Country cases: Objectives behind de-shifting

Chile Authors: Bellei (2009), Kruger & Berthelon (2009) and OECD (2004)
Objectives and specific aims for de-shifting:

• Improve quality and equity
  o More academic and extra-curricular activities
  o Allow for different pedagogical approaches
  o Extend remedial help to students from poor socio-economic backgrounds
• Increase participation of women in the labour force
  o Align school day with parents' working day
• Protect socially vulnerable children
  o School extended until 4 pm so that children are under supervision for most of the day

Trinidad and Tobago Authors: Manning (2007) and London (1991)
Objectives and specific aims for de-shifting:

• Improve quality and equity
  o Improve status and prestige of lower secondary schools[21].
• Reduce truancy and anti- social behavior
  o By extending the school day

[21] Students attending these double-shift schools were mainly from poor socio-economic backgrounds and often these schools fared badly in national exams (London, 1991).

Singapore Author: MOE Singapore (2010)
Objectives and specific aims for de-shifting:
• Provide holistic education o Provide additional time for a wider range of academic and non-academic activities

Buenos Aires, Argentina Author: Llach, Adrogué, & Gigaglia, (2009)
Objectives and specific aims for de-shifting:
• Increase participation of women in the labour force o Align school day with parents' working day

As indicated in Table 3.1, the primary aim of de-shifting is to improve the quality of the output. In addition, the policy was implemented in order to increase the rate of participation of women in the labour force and at the same time reduce juvenile delinquency. The following section examines the costs and constraints associated with de-shifting based on three countries' cases.

3.4 Costs and Constraints of De-shifting

The main component of a transition such as de-shifting will be the associated costs for additional infrastructure, namely the provision of new school facilities and the upgrading of existing ones. Whilst these costs may well be limited to the transitional phase, recurrent costs such as an increase in teachers' and other staff pay (due to lengthening the school day) can be substantial. Table 3.2 presents some of these costs and although actual figures are not available for all the countries' cases, the magnitude of the costs can be captured in the estimates provided.

Table 3.2: Countries' cases: Costs of de-shifting

Chile Authors: OECD (2004) and Delannoy (2000)
Costs and Constraints:
• Cost of infrastructure estimated at US$ 883 million was between 1997 and 2003, where 66 per cent of schools were under FSD • Operational cost increased by 25 per cent • Investment cost of US$ 1.5 billion to build additional facilities

Trinidad and Tobago Authors: London (1993) and The House of Representatives Trinidad and Tobago (2007)
Costs and Constraints:
• Cost of de-shifting 25 schools was an estimated US$ 100 million • Recruiting and training teachers for vocational and technical subjects, which were introduced into the curriculum, proved to be a challenge

Singapore Author: MOE Singapore (2005)
Costs:
• An estimated US$ 440 million[22] for Phase 1: Construction of 11 new schools and upgrading of 28 new schools

As Table 3.2 indicates, the cost of building new schools and upgrading existing ones can be very large and although this can be limited to the interim stage, recurrent costs can be high even after the transition as in the case of Chile. In addition, there can be several other logistical and financial constraints which can limit a smooth transition.

[22] Equivalent of Singaporean dollar 560 million based on currency rates on 7th of February 2011 from: http://www.xe.com/ucc/convert.cgi?Amount=560&From=SGD&To=USD&image.x=61&image.y=14.

One such issue is the difficulty in obtaining qualified staff as in the case of Trinidad and Tobago. In such situations, an education system may have to employ untrained or low quality teachers. The effect of this situation can be detrimental to the quality of education, especially if the system had to replace a large number of teachers who had previously been working double shifts. In order to reduce such constraints, it is important to have a carefully laid out plan of action specifying requirements at the different stages of the procedure. This is examined in the following section.

3.5 The Course of De-shifting

Given the magnitude of the de-shifting process, which includes the involvement of vast investment in infrastructure and prominent logistical changes (amongst many other factors), it is only sensible to expect the procedure to involve several stages. These phases need to be carefully planned out with a systematic evaluation of the process at each stage thus allowing time and space for a smooth transition. Table 3.3 attempts to summarise the de-shifting procedure and changes in the three countries' cases.

Table 3.3: Countries' cases: Process of de-shifting

Chile Author: Kruger & Berthelon (2009)
Procedure:
• FSD initiated in 1997 to be completed by 2002 • Initially, small schools in rural areas were de-shifted • Schools submit proposals for their operational changes and infrastructural funds were supplied on a competitive basis, based on pre-existing deficits in infrastructure and location[23]
Changes in school timetable and curriculum:
• Increase in number of periods, from six to eight • Increase in time for co-curricular and extracurricular activities • Weekly hours in primary schools increased, from 30 to 38 • Weekly hours in secondary schools increased from 36 to 42

[23] Preference was given to schools in areas of socio-economic vulnerability.

Trinidad and Tobago Author: London (1993) and The House of Representatives Trinidad and Tobago (2007)
Procedure:
• Collecting of information and data, in order to notify students and parents of placements, subjects and courses offered and also classroom and accommodation requirements • An on-going assessment and evaluation to inform the Ministry of Education about what additional changes would be needed for a smooth transition

Singapore Author: MOE Singapore (2005, 2010)
Procedure:
• Initiated in 2009 to be completed by 2016 • Carefully planned out transition with detailed analysis of dates and locations of schools that were to be de-shifted • Divided into several phases, which included construction of 18 new schools and upgrading of 80 existing schools • Phase 1: construction of 11 new schools and upgrading of 28 new schools
Changes in school timetable and curriculum:
• Changes to time table and curriculum: additional hours available for physical education, art and music

Information from Table 3.3 indicates that these countries had a detailed plan of action to ensure a smooth transition. This is important so that stakeholders can make the necessary changes and adjustments. For example, supply of teachers in the short run is fairly inelastic. However, if the number of schools to be de-shifted each year is known, then teacher training needs can be accommodated accordingly. A transparent plan of action such as that in Singapore is helpful not only for the concerned authorities but also for the parents and the general public to be able to take the action needed to adjust to the changes.

In regards to investments in education, the effects are only realised after a time lag which could be several years. Due to the magnitude of the costs involved in de-shifting, it is particularly important to see if the outcomes justified the investment. The following section examines the effects of de-shifting in some countries' cases.

3.6 Outcome

The expected outcome of de-shifting in the countries' cases has been presented in Table 3.1. These include improving the quality of education and reducing external social and economic costs. Given the vast investment required in the various countries' cases it would be interesting to identify whether the outcomes matched the rationales. However, this would be a challenge given that there is very limited information available on this topic. In addition, Trinidad and Tobago had just completed the transition whilst the Singaporean case is on-going and therefore other countries cases such as Argentina and Uruguay are presented. The effects of the FSD programme in Chile have been studied by Bellei (2009) and Kruger and Berthelon (2009) and their overall findings are as follows:

- Small, statistically significant positive effects in achievement levels, both in mathematics and language Grades 9 and 10, after two years of FSD;
- Children reduced the time they spent watching TV and wandering around street corners (DESUC, 2001, as cited in Bellei, 2009);
- Reduction in teenage motherhood, thus improving women's future economic opportunities. This may reduce inequalities in the labour market opportunities, which are faced by high versus low income young women;
- Reduction in the need for child care and (as a consequence) increased participation in the female labour force, by women with children of primary school age (Cabrera, 2008, as cited in Kruger and Berthelon, 2009).

According to Llach et al (2009), Full-Day Schools were initiated in Buenos Aires, Argentina (in 1957) as a pilot programme which was extended to 50 per cent the primary schools, by 1970. The authors conducted a study to estimate the impact of its effects on schooling and earnings. The people interviewed were those who had completed primary school in 1977 and they fell into two categories: those that attended full-day schooling, when the policy was implemented in 1971 — treatment group (TG)

— and those that attended shift schools — the control group (CG). The sample was further stratified according to their socio-economic status (SES)[24]. The authors found positive and significant effects of full day schooling in three areas, as follows:

- Secondary school graduation rate was 21 per cent higher in the TG, dominated primarily by improvements in the low SES students[25].
- Access to and completing secondary/tertiary study was higher in the TG.
- Pursuing a career related to secondary studies was higher in TG and they changed employment less frequently.

However, significant negative effects were observed in the TG as follows:

- Timely conclusion of first tertiary study and that of postgraduate studies. This means that the CG students who went on to tertiary education were more able than the students from TG.
- No knowledge demonstrated of a second language, despite being taught this at school. This is an indication that extra material covered does not always lead to extra knowledge.

An evaluation of a full-time school programme, which was targeted for poor and disadvantaged students in Uruguay and which lengthened the school day from a half day to a full day, resulted in an increase in student test scores for mathematics and language (Cerdan-Infantes & Vermeersch, 2007). The Grade Three students from these schools were also found to be 10 per cent more likely to pass examinations when compared to their counterparts attending double-shift schools.

The Chilean case presented strong developments in the social and economic sector as a result of de-shifting. However, academic achievements in general (in the three cases presented), although positive, were not very promising. However, significant positive effects were found for students from the low SES. This may imply that students from the wealthier backgrounds may already be receiving the additional help required and therefore lengthening the school day did not have much influence on their academic standards. According to Llach et al. (2009), de-shifting failed to indicate positive results

[24] low, medium and high.
[25] This supports the evidence that increasing instructional time is a more efficient way of influencing the achievement levels of students from a low economic status.

throughout due to the low learning quality and inadequate curriculum of the full day schools which were the underlying reasons for this outcome. Low learning quality could be associated with the quality of additional teachers since it may be difficult to train the required number of teachers in the short run. The presence of an inadequate curriculum raises the question of how effectively the extended time has been used. This leads to the following section which focuses on the means by which the additional time available through de-shifting can be utilised.

3.7 Means of Utilising Extended School Time

- This chapter so far has explored the objectives behind de-shifting, its associated costs and the course of transition. The last section provided some outcomes of the policy. Although certain economic and social improvements were apparent, progress in terms of overall improvements in academic achievements was minimal which indicates the importance of effectively utilising the extended time. Table 3.1 mentioned how the extended time was to be used: to cover more content; to implement different pedagogical approaches and to provide additional help to economically disadvantaged students. This section details this further by allocating this additional time to reforming the curriculum and providing additional help for the students from low SES.

3.7.1 Reforming the Curriculum

The curriculum includes the subjects that are taught in a school. Extending school time provides the opportunity to reform the curriculum, which can include the strengthening of existing subjects and the introduction of vocational subjects.

Strengthening Existing Subjects

An increase in instructional time can benefit learning in three ways. Firstly, it permits teachers to cover more material; secondly, it increases the depth of the topics taught; and thirdly, different pedagogical approaches can be adopted (Bellei, 2009). Physical education, art and music are amongst the subjects which are not given a great deal of importance in DSS due to time constraints. However, it is believed that these subjects are essential to a holistic education since they develop the child's physical robustness

and they also enhance her/his creative and expressive skills. These, in turn, shape their personal cultural and social identity (MOE Singapore, 2010). This is the reason why the Singaporean curriculum was revised to operate with single-shifts, thus accommodating additional hours for these subjects. Teachers and students can fully utilise the facilities in the school and at the same time take advantage of others outside the school environment. This situation has been observed in Chilean schools (DESUC 2001, as cited in Bellei, 2009).

Introduction of Vocational Subjects

Children not being taught vocational subjects in school lack important skills, and this can eventually create a labour shortage in the vocational and technical fields of a country. According to Cuban (2008), employers in the USA criticised the limited time students spend in schools, claiming that it was insufficient to produce the skills they were looking for in workers in a globally competitive economy. De-shifting allows time for skill development subjects to be incorporated. Practical skills, such as needlework and woodwork, are some options that can prepare students for the job market.

3.7.2 Attention to Students from Low Socio-Economic Status

Extended hours also offer educational space for students who face difficulties with working at home (OECD, 2004). For this reason 70 per cent of the extra time resulting from the introduction of longer days in schools in Buenos Aires, Argentina, was devoted to academic activities which included individual assisted studying. This area needed to be given special attention since the effects of lengthening the school day were most prominently seen within this group of students. This is also in line with Bellei (2009) who concluded that there is a strong relationship between instructional time and achievement levels of students with initially low academic results.

3.8 Conclusion

Converting double-shift schools to full-day schools has been adopted by various countries, based on a mix of educational, social and economic grounds. The additional time generated by de-shifting is used for both academic and extracurricular activities. More time devoted to academic subjects, the inclusion of subjects for skill development and the lengthening of time spent on recreation are believed to have had a positive

impact on student development. However, an increase in academic achievement as a result of this policy, although positive, is fairly small. On the other hand, its academic impact on students from low SES is substantial. In addition, positive social and economic effects including a reduction in juvenile crime, and teenage pregnancy and improvements in women's participation in the labour market was evident in the case of Chile and Argentina.

De-shifting the school system requires extensive planning and it involves costs for infrastructural, administration and operational factors, during its initial stage. In addition, once de-shifted, the recurrent cost of education is likely to remain high due to the financial compensation needed for teachers' extended teaching hours. In countries such as Chile, it was decided that the benefits of de-shifting outweighed the disadvantages. However, this is not always the case. For example, in Hong Kong the proposal for de-shifting was declined on two separate occasions, not only due to its massive costs but also on the grounds that it would divert funds from equally or more needy domains within the educational sphere (Yim, 1990). For example, quality of teachers and resources needs to be of a suitable standard whether in a single- or a double-shift system. Lengthening school time while these factors remain inadequate will not only fail to deliver the expected outcome but also waste resources. The training of teachers and provision of resources are just two of the areas which would require substantial amounts of expenditure, especially in developing countries. In this respect, it can be anticipated that the opportunity cost of expenditure on de-shifting can be quite high. These will be further explored in Chapter Five for the Maldivian case.

In relation to the second research question - *What are the costs and issues involved in the implementation of single-shift schools?* – all the countries' cases reported high costs which were primarily due to the building of new schools and additional classrooms and other facilities. This may well occur in the transition period. However, recurrent costs are mainly comprised of teachers' salaries. This cost is likely to remain high throughout. The supply of teachers especially for specialist subjects such as vocational education can be a constraint. Since the supply of teachers in the short run is likely to remain fairly inelastic and if a major proportion of teachers taught double shifts this could result in a shortage of teachers and thus employment of poorer quality teachers. In addition, there can be several other issues such as students not being able to work or a

reduction in teachers' total income due to working both shifts. However, no information on these issues was available.

De-shifting provides additional time but the academic improvement in most cases is marginal compared to the investment it requires. Since de-shifting incurs high costs, the way in which increments in time can lead to improved academic performance needs to be critically analysed before an investment is made. In addition, from an economics perspective, it is important to look at alternative options. There are other factors (within and outside school) which influence a child's performance and these factors need to be taken into account when drawing conclusions. The following chapter examines components of the school day and it will specifically explore school time and schooling variables and other inputs which affect academic standards. Some of the strategies within these variables are explored as alternative options to de-shifting.

4 School Time and Other Inputs that Improve Student Performance

4.1 Introduction and Overview

With DSS being the primary focus, this study has already examined its advantages and possible costs. Although the system has been considered as an economic measure of increasing access, it has also been seen as being inferior, due to the limited instructional time and narrowing of the curriculum in additional to several external costs. These costs have led countries to de-shift as examined in Chapter Three. Objectives, costs, procedures and outcomes of de-shifting were assessed based on selected countries' cases. Whilst the costs were immense, the outcomes in terms of improving overall academic performance were not impressive. However, the academic performance of students from low academic and financial backgrounds was found to have improved significantly in Argentina and Chile. Whilst these conclusions are based on very limited evidence, they can be strengthened by adding the effects of lengthening the school day (but not necessarily as a result of de-shifting) since this has been considered by many countries in the hope of improving academic performance. However, including this effect does not alter the general conclusion on the academic results of lengthening the school day. Moreover, the importance of other variables, inputs and structures, which affect students' academic performance, has surfaced together with alternative strategies that are effective in improving academic standards. For an economic assessment, it is important to consider these alternative options and opportunity costs in order to conclude where investment would be most necessary and effective.

The chapter begins with an examination of school time: how this time evolved and why it is regarded as a major component. This is followed by a model which describes the economics of school time, that is, how increments in school time affect performance levels. The effects of this increase in school time is commented upon based on a review by Patall et al. (2010) prior to examining the components of school time. Recognising that a mere increase in school time does not lead to improvements in performance, the following section explores the other factors affecting students' academic standard: schooling inputs, parents, peers and time-out-of-school. Whilst all these factors complement academic performance, certain approaches are presented as cost-effective

measures for improving academic standard by optimising learning time. The last section examines how school management and organisation can be structured so that all these variables can collectively improve on the quality of education.

4.2 Analysis of School Time

This section, which examines school time as a major variable influencing academic achievement, begins by describing how a focus on the lengthening of school time has developed through various countries' educational policies. How increments in time induce learning is examined, using a model by Levin and Tsang (1987), followed by the effects of lengthening the school day. This then leads to a detailed examination of the structure of the school day.

4.2.1 School Time as a Major Variable Affecting Academic Performance

The relationship between time and academic learning gained a great deal of attention after the publication of 'A Model of School Learning' in 1963, by John B Carroll (Bloom, 1968; Carroll, 1989; Levin & Tsang, 1987). This model included five basic classes of variables, three time-related and two achievement-related, which influence student learning. The time related variables were *aptitude*[26]*, opportunity to learn*[27] and *perseverance*[28] whilst the other two were *ability to understand instruction* and *quality of instruction*. These variables were translated to

$$\text{learning} = f\left(\frac{\text{Time actually spent in learning}}{\text{Time needed for learning}}\right)$$ by Gettinger (1984).

However, Carroll (1989) pinpointed that it was the emphasis on time-related variables that attracted the most attention. He highlighted the case of Benjamin Bloom's 'Concept of Mastery Learning' in 1968, in which Bloom believed that all students could achieve mastery in any subject either by increasing time spent in learning and/or by reducing time needed for learning. It is believed that the common acceptance of Bloom's mastery learning model and its focus on time has been the impetus for many countries to consider lengthening school time, as a means of increasing academic performance

[26] Defined as variable(s) that determine the amount of time a student needs to learn a given task, or a unit of instruction, under optimal conditions of student motivation and instruction.
[27] Amount of school time allowed for learning.
[28] Amount of time a student is willing to spend on learning.

(Levin & Tsang, 1987). To find out if the relationship holds true, it is important to identify how a typical student will react to an increase in school time (*the economics of school time*). This is examined in the following section.

4.2.2 Economics of School Time: A Model by Levin & Tsang, (1987)

In order to investigate whether an increase in school time will lead students to learn more, Levin & Tsang (1987) devised a model which is similar to the standard educational production function:

$$A = A(C, e, t, S)$$

where, achievement in a particular domain, A, is considered to be a function of
C - the student's *capacity* to learn which includes factors such as intellectual ability and health;
e - *effort* to learn, where the greater the effort the more will be learned;
t - *time* devoted to learning;
S - level of *learning resources,* which include factors such as quality of schooling and out-of-school influences.

The focus of the model is on *time* and *effort* variables to determine how they affect student learning. Assuming that the student is both an efficient producer and a utility maximiser, s/he allocates *time* and *effort* to different activities — including learning. The aim is to determine the equilibrium of the model and indicate the point where the student maximises *achievement* (A), subjected to variations in *effort* to changes in *time*, with C and S assumed as given. The authors found that from the initial equilibrium status of *learning*, when there is a small increase in *school time* imposed on the student, s/he reacts by decreasing her/his *effort,* such that the level of *learning* does not change. For larger increases in *time* the student cannot adjust (decrease) her/his *effort* adequately to reach the initial equilibrium and therefore overall *learning* increases. However, since *effort* decreases, the magnitude of the increase in *learning* will be reduced. The main finding behind the model was with increments in time, effort per unit of time reduces, thus implying that although the overall educational effect may be positive, it will be small relative to the increase in time.

Although the model predicts decreasing returns, if the initial allocated time is considerably less, there could be increasing returns, in which case more time may result in more effort and achievement. This can be particularly true for working students and students from low SES who do not get additional help or time outside of school hours.

As previously mentioned, many countries lengthened the school day as a means of improving educational quality. The available data on this effect is both limited and it concentrates on standard achievement based assessments based on core subjects. A review of literature, based on this topic by Patall et al (2010), is presented in the following section.

4.2.3 Effects of Lengthening the School Day

Section 3.5 examined three countries' cases, where the academic effects of extending the school day (by de-shifting) have been assessed. Whilst the findings were marginally positive, it was emphasised that the results cannot be generalised. Patall et al. (2010) performed a comprehensive review of the literature since 1985 and found 15 studies (of various designs[29]) on the effects of lengthening school time on achievement levels. There are two studies, reporting significant positive impacts are of interest. One by is a study by Adelman et al. in 2005, where he examined a middle school that extended the school day to 7.5 hours. It was found that the number of students who passed a state level reading test increased from 77 per cent to 90 per cent over three years. The other study by Wheeler published in 1987, based on 1030 Californian schools, concluded that longer days led to higher academic scores. However, the majority of the other studies were inconclusive in regards to the effectiveness of extended school time in raising academic performance.

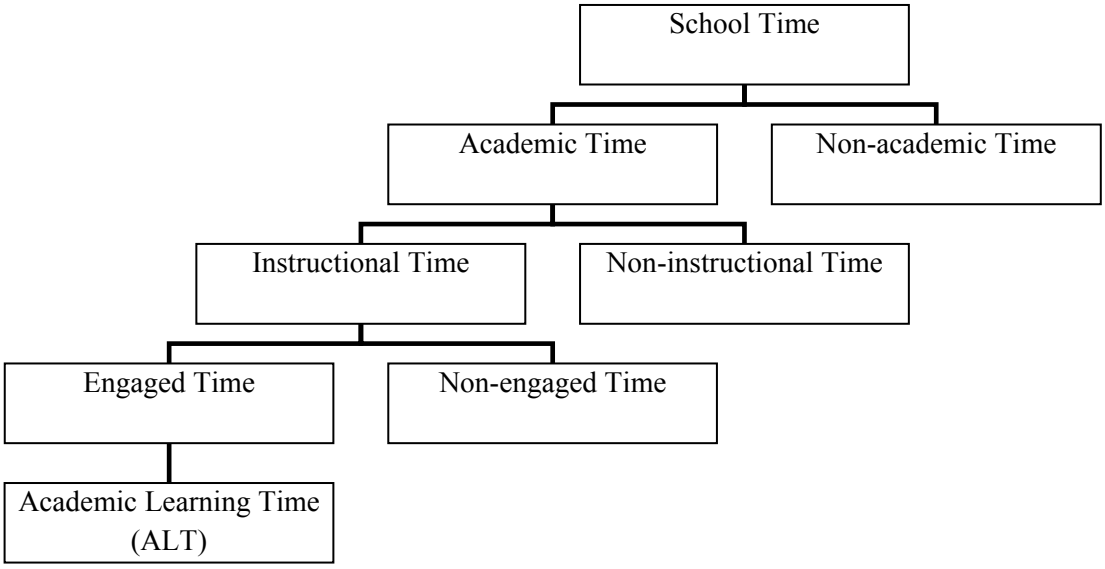
In an economic assessment, to find the relationship between school time and academic performance, the variable 'school-time' may be tested against output. However, school time is comprised of several factors and education literature highlights the importance of specific components which need to be considered when making decisions as to the effectiveness of policy relating to the lengthening of the school day (Karweit, 1985; Levin & Tsang, 1987; Patall etal., 2010). The following section presents a categorisation of school time with eight components.

[29] Correlation, quasi experimental, pre-post quasi experimental, case studies.

4.2.4 Structure of School Time

School-time is too broad a variable with which to analyse the effects of an increase in school time on performance. This highlights the importance of teasing apart the variables of the school-time identified in the literature, is illustrated in Figure 4.1.

Figure 4.1: Structure of school time



Source: Adapted from Patall et al. (2010), Karweit, (1985) and Aronson et al., (1998)(1998).

Figure 4.1 shows one possible categorisation of school time: the number of daily hours students are required to attend school. School time is divided into (1) *academic time* (also referred to as class time), the time within the school day that students are required to actually be in class or scheduled time per respective subjects and (2) *non-academic time*, which is usually the time not scheduled for subjects (examples being breaks and assembly). Academic time is further divided into *instructional time* (time devoted to teaching) and *non-instructional time,* (unintended loss of time, such as time spent in classroom management and discipline). Instructional time is then categorised into *engaged time* or *time on task* (where students are paying attention to a learning task and attempting to learn) and *non-engaged* time (time that individual students are not actively engaged in instructional or learning activities: for example day dreaming, talking, etc). Aronson et al. (1998) further narrows down engaged time to *academic learning time* (ALT) as a time when actual learning occurs.

Since the entire school time will not be devoted to learning, narrowing it down to academic time (or class time) can be a more useful measure for assessing the relationship between time and achievement. However, this can also be subjected to various 'time-losses'. With reference to several data sources from England and the USA, Ross (1984) stated that 20 per cent of 'in-class' time is spent on non-instructional activities (Ross, 1984). Karweit (1985) painted a gloomier picture and claimed that even under the best of circumstances half or less of class time is used for instruction. This was confirmed by Anderson and Walberg (1993) who found in their study that actual learning took place during just 42 per cent of the allocated time. This is a figure for high school students and it could be much lower for primary students. Hollowood et al. (1995, p. 249) identified six sources of interruptions that contribute to loss of instructional time:

(a) *Student interruptions* – such as disruptive behaviour, leaving the room and conflict with other classmates;
(b) *Teacher interruptions* – such as collection and distribution of materials, attending to misbehaviour, leaving the room for various purposes;
(c) *Visitor to class* – students coming to borrow or lend items and unexpected parent visits;
(d) *Loud speaker* announcements;
(e) *Transitions* – students and teachers moving from one class to another;
(f) *Other* – late starts and unexpected occurrences, such as fire drills.

Selecting a Proxy for Learning Time

Selecting a suitable proxy variable for learning time can be problematic. Smyth (1984) acknowledged a series of studies from the 1950s to the mid-1970s that have found that time-on-task was predictive of learning across a range of students (in various subjects) and across different classroom settings. However, Aronson et al., (1998) stated that if the student has already mastered the task assigned, or if s/he is not yet prepared to learn, due to the material being too advanced, then learning is not occuring during the entire 'engaged time'. In fact, they believe that the relationship between achievement and ALT is greater than that of engaged time.

The difficulty with all these components (engaged time and ALT,) is that they are difficult to meaure and vary substantially across schools, classes, subjects, grades, teachers and students. This has been highlighted by Karweit (1985) who pointed out that engaged time is not directly manipulated by legislative or other actions, whereas academic time (from which it is derived) is manipulated. Consideration of all the breakdowns of time and the ease of measuring it needs to be considered when identifying a proxy for school time with achievement.

Whether extending school day leads to imporvements in academic performance is not certain and literature stresses the importance of increasing the effectiveness of allocated time and engaged time, rather than merely increasing school time (Karweit, 1985; Patall, et al., 2010). Given the importance of quality instructional time, it is important to consider how to effectively reduce loss of it. According to Hossler (1988), this can be reduced through improvements in classroom control and management skills. He also points out the need for teachers to examine where they themselves disrupt the class, for example by leaving the room which then offers students the opportunity to waste time.

In addition, the influence of other factors in student achievement has been stressed (Carroll, 1989; Levin & Tsang, 1987; Rivin, Hanushek, & Kain, 2005). The achievement levels of students is directly influenced by three main factors: (i) school inputs, (ii) family and (iii) peers (Hanushek, 1995; Llach, et al., 2009). In addition. Steinberg (1993) lists (iv) 'time out of school' as an important variable affecting student performance. For best results, schools can organise these elements to work collectively. However, constructing such a bond may require changes in the organisation and management of schools.

The following section examines the importance of the above-mentioned four variables and how schools can effectively utilise these influences. In addition, it examines (v) reforming the organisation and management of schools since it is an important factor that can influence these other variables to work collectively.

4.3 The Importance of Schooling Variables and Other Inputs

The previous section emphasised that simply lengthening school time does not improve the quality of education and that the influence of other inputs was important. Examining

these factors is crucial for an economic assessment in order to identify the opportunity cost of investment in lengthening the school day and to identify other areas where investment can be more effective. This section explores the four types of influence: *school inputs, peers, parent* and *time-out-ofschool*. In addition, there is an analysis of how *structural reforms* can impact on the quality of education.

4.3.1 School Inputs: Teachers and Instructional Technology

One of the main components which affect educational outcomes is teachers, and the practice of instructional technology is one way in which teaching can be improved. This section presents these two variables as school inputs that can be improved in order to bring about effective improvements in teaching and learning.

Improving the Quality of Teachers

According to Hanushek (2010) "…two students starting at the same level of achievement can know vastly different amounts at the end of a single academic year due solely to the teacher to which they are assigned" (2010, p. 3). Literature indicates several methods by which teacher quality can be improved. This section highlights the importance of teacher education, mentoring and professional development, together with the rising interest in the 'performance pay' concept.

Many studies have confirmed that the quality of teaching plays an important role in describing variations amongst student performance (Hanushek, 2010; Hanushek, et al., 2004; Rivin, et al., 2005; Wright, Horn, & Sanders, 1997). Therefore, an improvement in teacher quality is considered more 'effective' in raising student standards when compared with other variables such as class sizes, overall expenditure levels and teachers' salaries (Darling-Hammond, 1999; Wright, et al., 1997).

There are a number of ways in which teacher quality can be increased, beginning with an improvement in teacher education. It has been found that teacher education, comprised of extended teaching together with course work which concentrates on learning and teaching, produces more effective teachers who are more likely to remain in the profession (Darling-Hammond, 2000). In addition, an induction programme[30] is

[30] Programmes offering support, guidance, and orientation for beginning teachers, during the transition into their first teaching job (Smith & Ingersoll, 2004).

essential for new teachers in order that they can deal with the stress, gain confidence and focus on their profession (Odell, 1986; Veenman, 1984). A study by Smith and Ingersol (2004) found that new teachers who were provided with an induction programme were less likely to change schools and profession. The most effective form of induction according to these researchers was having a mentor from the same teaching subject, common planning time, and collaborative work with other teachers.

Teacher development is a continuous process and, according Bell and Gilbert (1996), professional development[31] (PD) is seen as the key to being a successful teacher. An effective PD programme should be research-based and it needs to focus on the enrichment of the 'teacher' content and pedagogical knowledge so that it aligns with developments within the subject taught (Garet et al., 2001). PD also helps teachers to adjust to changes outside their subject matter or their teaching such as those of organisation and administration.

According to Hanushek (2010), the general level of teachers' pay is not related to improvements in their 'product', that is student achievement. He explains that teachers' salaries are not entirely subject to the market forces of supply and demand. Being public entities, schools are subjected to political forces. Teachers' salaries depend on government decisions and demand is derived from that of their product (educated students) which again is dependent on governments, as to how much quality and quantity is needed (Hanushek, 2010). However, there has been a growing interest in the area of 'performance related pay' or 'merit-pay' where teachers are paid according to their students' performance level (Lavy, 2009). A study by Atkinson et al. (2009) undertaken to evaluate the effectiveness of this policy in England (comprised of 23,000 students and 182 teachers from 18 different schools) found that the policy did lead to improvements in students' performance. Similar results were obtained by Lavy (2009) in Israel. This was due to an increase in the motivation of teachers and it resulted in the use of various pedagogical approaches to help the students learn. Developing countries however, may not be in a position to implement and monitor such a programme.

[31] Courses, workshops and seminars designed to enhance teachers' knowledge and develop instructional practices (Borko, 2004. p. 3).

This section explored improving teacher education, mentoring, PD and 'performance pay' as ways by which teacher quality can be strengthened. However, Hanushek (2010) believes that investing in such programmes is not usually preferred by governments. He states that politicians adopt policies (such as higher overall salaries) that have a direct impact on the current school personnel. According to Atkinson et al. (2009) these policies seldom lead to improvements in student performance. The following section examines another factor, which has been effective in raising academic standards, use of instructional technology

Use of Instructional Technology

The use of technology in teaching and learning increases student motivation and engagement and it ensures that students are more employable. In addition, it enhances their ability to work collaboratively although ways of measuring these effects are limited because most school-based assessments were not designed to fully capture the skills of instructional technology (Ringstaff & Kelly, 2002). However, according to Ornstein and Lasley II, (2004, p. 292) "the use of computers, scanners, CD-ROMs, music CDs, audio tapes, clip art, graphics, videos, cameras, overheard projectors and PowerPoints, cable television and telecommunication systems can maximize curriculum content and improve student learning." They believe that technology supports different learning styles and it helps to enhance individual talent at the student's own pace. This is supported by the findings of Ringstaff and Kelly (2002). They considered several studies conducted between 1985 and 2000 on the impact of computer-based tools, concluding that the use of computers led to higher test scores. In addition, these tools enhance teaching by maximising learning time and increasing the PD of teachers (Ornstein and Lasley II, 2004). The cost-effectiveness of employing *computer-assisted instruction* is further highlighted by Levin et al. (1984) who compared its effects with that of *student-tutoring*[32], *class size reduction* and *increasing instructional time*, in improving elementary school reading and math scores. Amongst these factors, the second largest was the effect (per $100 of cost per pupil) of the use of *computer-assisted instruction*, whilst the least cost-effective was *increasing instructional time*. In addition, Monk (1989), with reference to several studies affirmed that at the pace of technological development, the use of instructional technology will become

[32] Both peer and cross-age.

increasingly cost-effective in delivering subject matter when compared to teachers themselves. These findings may be more applicable today with a decline in the cost of computers whilst their capacity and strength has increased. However, for most developing countries the use of instructional technology in classrooms may not be feasible. The cost of computers, internet access and training teachers and students may be prohibitive.

4.3.2 Peers

Peer relationships have been found to be an important influence on students' academic achievement. Schools can effectively use this relationship in an organised way through peer and cross-age tutoring.

A major reason why only a small percentage of instructional time is productive according to Walberg (1993) is because whole-group teaching does not accommodate the differences in student learning rates. An effective way to solve this problem according to Gaustad (1992), is the use of small group teaching such as *peer-tutoring* where either students tutor other students of the same age or *cross-age tutoring* of younger students. This has been found to be beneficial to both the tutor and tutee. He explains that the small age difference and common school background makes tutors more cognitively closer to the tutees, and hence they are able to do a better a job at tutoring than adults or professional tutors. Allen and Feldman (1976 as cited in Gaustad 1992) confirmed this situation and they identified the tutors' comprehension of the informal language and gestures used by the tutees to facilitate the tutorial sessions. This enabled them to deliver subject content and study skills such as organising work and questions at their tutees' level of understanding. Tutors who have academically struggled themselves are believed to be more patient and understanding of their tutees (Lipitt, 1976 as cited in Gaustad, 1992). This empathy builds the tutees' confidence in addition to their tutors' confidence both of which improve academic performance and emotional wellbeing.

Gaustad (1992) referred to several state-level school tutorial programmes that have been successfully implemented in middle or higher level schools with the aim of assisting low-achieving, at-risk students and also helping tutors. A number of these programmes selected low-achieving students as tutors to prevent them from dropping out, to increase

their self-esteem and to improve their attitude towards school and thus reduce their cases of truancy and indiscipline. These tutorial programmes rewarded tutors either with a financial payment or academic credit — or both which according to Robinson et al. (2005) were strong motivators for tutors.

In addition to improving students' achievement and self-esteem, a well-planned peer and cross-age tutoring programme can improve the overall school climate. Gaustad (1992) insisted that (although there were initial problems with the programmes he reviewed) it soon became an integral part of the school system with students, teachers and parents favouring it. In addition, it is believed to be an economic way of improving educational standards. A study by Levin et al, (1984) mentioned previously found c*ross-age tutoring* to be the most cost-effective measure when compared to three other educational interventions: *class size reduction, increasing instructional time*, *computer-assisted instruction*. Cross-age tutoring showed the largest effect per $100 of cost per student. In addition, peer tutoring was found to be four times more cost-effective than lengthening the school day.

However, tutoring (whether peer or cross-age) is not free from pitfalls and costs. Gaustad (1992) pointed out that parents and children may resist this type of tutoring particularly if it comes from children of the same age. However, he believes that cross-age tutoring can limit this trend. Tutors (whatever their academic standard) need to be trained in the methods of content delivery and how to help their tutees. This requires considerable training and teachers' time. Selecting tutors and training them, ensuring continuous assessment, supervision and support for tutors and tutees, and scheduling tutoring to the school curriculum requires time and careful management. Harrison (1976 as cited in Gaustad, 1992) believed that many schools did not consider cross-age tutoring despite its effectiveness due to the logistics involved in its organisation.

The above mentioned studies were all based in the USA. However, schools everywhere can effectively conduct such tutorial programmes since it does not require an extensive investment and therefore can be implemented in schools. The following section explores the influence of parents on students' academic performance.

4.3.3 Parents

A study by Fan and Chen (2001) based on a synthesis 250 studies related to reducing the performance gap among students found that parent involvement was a major factor in the academic development of students. Similar research by Cotton and Wikelund (1989) produced the same result. Parent involvement according to the authors covers several different types of participation including parents' attendance at school functions and parent-teacher meetings. In addition, the provision of adequate study time and space, motivation and encouragement (Cotton & Wikelund, 1989), supervision of children during their free time, and encouraging participation in extra-curricular activities and community services (Aronson et al., 1998), are some ways in which parents can encourage their children's learning.

The most effective form of parent involvement is when parents work directly with their children on learning activities at home. In addition to academic improvement, parental involvement contributes to positive developments in students' attitudes and behaviour (Cotton & Wikelund, 1989, Leichter, 1975).

Cotton and Wikelund (1989) mentioned several ways in which schools can encourage parent involvement in order to realise the above mentioned benefits. These methods include continuous communication with parents which will create awareness of their role in their child's education and involving them in school activities as much as possible. Ultimately, it is about strengthening the ties between school and parents. According to Comer and Haynes (1991), this improves the psycho-educational development of children. Similar to the case of parents, time-out-of-school can play a significant role in a student's performance and the following section examines this factor.

4.3.4 Time-out-of-school

Section 2.3.3 emphasised that unsupervised and idle time out-of school is seen as a major factor contributing to truancy and anti-social behaviour. Steinberg (1993) emphasised that time out-of school, when effectively used, can lead to improvements in academic achievement and classroom engagement. He noted that out-of-school activities such as leisure reading and attending cultural events directly benefit academic

performance. In addition, participating in co-curricular events leads to character development and a stronger attachment to the school which indirectly raises a child's school performance. There are various strategies by which this time can be effectively utilised. Two strategies, homework and the use of the community as a resource, are now examined.

Homework

An effective way that out-of-school time can be directed towards academic achievement is through the discipline of homework (Smyth, 1984) which Bloom (1968) defines as tasks assigned by school teachers for students that are to be carried out time-out-of-school. According to Hosler (1988), this is another way by which formal instructional time can be extended. Cooper et al. (2006) stated that homework, which is primarily for the purpose of practicing or reviewing material that has been presented in class, includes both instructional and non-instructional objectives. It encompasses a variety of different types which can be categorised according to their amount, skill area, subject, degree of choice for student, deadline for completion, degree of individualisation and social content.

In addition, a study was conducted by Cooper et al. (2006), in order to synthesise research conducted on homework and its effectiveness. They found that most educators agree that homework can be an important supplement to the academic activities carried out in the school. The authors reported that from 69 correlations between homework and achievement presented in 32 documents, 50 were positive. The authors further categorised academic benefits into immediate and long term ones. Improved retention of knowledge, an increased understanding, the promotion of critical thinking and curriculum enrichment, are some of the immediate effects. Long term effects include a better use of leisure time, improvement in study skills and an improved attitude towards school, so long as the homework does not become so large an amount that it becomes a burden on the child. Greater self-direction and self-discipline, improved time management skills and problem solving skills are some of the mentioned non-academic benefits of homework.

The literature also identifies some negative effects of homework such as various complaints from students, parents and teachers. Cooper et al. (2006) stated that students

feel pressured to complete homework assignments and claim that it takes away their leisure time. The authors also pointed out additional disadvantages such as loss of interest in school work, physical and emotional fatigue and cheating that actually counter the advantages of homework. On the other hand, according to Duquette (2009), parents can feel frustrated that they do not know how to best help their child and this can eventually create family tensions. She further stated that parents believe homework interferes with family time. Teachers can also become frustrated over a loss of control over monitoring and completion of children's assignments, a lack of time to prepare the work and a lack of parental support (Farkas et al., as cited in Cooper et al., 2006).

Community as a Resource

Section 2.3.2 highlights the fact that a limited school time may not be able to fulfil all the functions of education especially the *social* and *economic* ones. The community is a resource that can be organized to achieve these broad objectives of education, by utilising time after[33] school. Such is a programme the 'Extended Learning Time' (ELT) in the USA, where the school day was extended in such a way that community based organisations, such as the media, political parties, co-operatives, universities, research institutions, religious bodies, and health organisations, used the school premises, in order to conduct various programmes for the students.

One of the advantages of ELT according to Traphagen and Johnson-Staub (2010), is that it enables teachers to teach a well-rounded curriculum which cannot be provided by the school alone. It provided more time for the PD of teachers, in addition to an opportunity for parents and families to participate in their child's school activities. Several public schools[34], where ELT was implemented reported different types of community-based organisations which partnered with the ELT schools to:

- provide instruction in academic and enrichment content to students;
- provide PD for teachers;
- provide mental and physical health services for students;
- encourage parent outreach and involvement;

[33] or before in case of student attending afternoon shift only
[34] These were in Massachusetts and New Jersey: The Expanded Learning Time (ELT) is a publicly funded programme supported by a PPP.

- play a key role in the governance, funding, policy development and pedagogical practice within the school.

These collaborations have been of particular benefit to students from low-income backgrounds. During the ELT, partner organisations conducted small group tutoring, homework help, music, arts, sports and health and wellness programmes that have enhanced the students' academic, physical and emotional well-being. In relation to the community partners who participated in the programme, 50 percent provided their services free of charge whilst the remainder were paid through a state subsidy made to ELT. However, two limitations need to be addressed. Firstly, there is difficulty in defining outcomes to measure their success and secondly, there are challenges to aligning partner programmes with the schools' instructional objectives.

According to London (1994) the idea of involving the community as a resource to help students utilise their time out of school has been initiated in Trinidad and Tobago. It failed due to the conflict of power held by central government and the comminity organisations. Structural reforms, such as decentralisation may also be required for schools and community, in order to effectively implement the majority of the aforementioned strategies. The following section examines the structural reforms, decentralisation and privatisation, that have been initiated and implemented in many countries, in order to improve their educational outcomes.

4.4 Structural Reforms

The majority of the strategies mentioned in the previous section may be difficult to implement under a highly centralised system of education. In order to implement these alternative strategies, it is necessary to have an organisational structure that can facilitate the policies. In addition, decentralisation and privatisation have additional advantages. These include increased accountability and increased participation by stakeholders in the management of schools, where schools are managed under decentralisation or by the private sector. The following section examines these two forms of reforms.

4.4.1 Decenralisation in Education

Decentralisation can be at two levels: *functional*[35] and *territorial*, of which the latter is relevant to this thesis. This is the transfer of authority to different levels of government, such as central government, provinces, communities and schools (Bray & Mukundan, 2003) and comprises: *de-concentration, delegation* and *devolution* (Bray & Mukundan, 2003; Hanson, 1998). *De-concentration* is concerned with the transfer of responsibility for the ease and convenience of implementing rules for example, central government placing examination centres in the provinces. *Delegation* refers to the transfer of actual decision-making authority from higher to lower levels within an organisation[36]. In contrast, *devolution*, which involves a greater degree of transfer of power to the lower levels of the hierarchy, allows local levels to act without prior permission from a higher level within the organisation — for example, the transfer of decision-making with respect to the hiring and firing of teachers to the provincial or regional level.

Decentralisation in education affects how school systems operate and these effects may be felt in many areas including policy making, generating and spending funds, training and the hiring and firing of teachers (Geo-Jaja, 2004). Heredia-Ortiz (2006) performed a cross-country analysis to identify the impact of education decentralisation on education output. His study based on data collected from 62 countries found that decentralisation had significantly improved test scores and reduced dropout rates.

The main rationale behind decentralisation in education is to facilitate school-based management (SBM) and community participation that will in turn improve education. According to Zajda and Gamage (2009) teachers, school administrators, parents, students and the local community, are in a better position to decide what is best for their school since they are the stakeholders who are directly involved in empowering the school. SBM devolves decision making to schools which would then enable them to better align school policies to students' needs whilst community participation is based on the grounds that qualified people who are not necessarily education professionals can take part in the management decisions of the schools and govern schools effectively (Heredia-Ortiz, 2006).

[35] Functional decentralisation refers to the separation of power between authorities that operate in parallel, such as separating out the Ministry of Education into the Ministry of Basic Education and Ministry of Higher Education (Bray & Mukundan, 2003).
[36] However, this power can be withdrawn at the discretion of the higher ranked authority.

Consequently, many countries (both developed and developing) have adopted some form of decentralised school management system. New Zealand reformed its entire school system in 1989, to incorporate SBM (Williams & Harold, 1997). Since that time its schools have been managed by individual boards of trustees comprised of three to five elected parents, the principal, an elected teacher and a student representative. Additional members are added in order to balance minorities, gender and different socio-economic backgrounds (Wylie, 1995 as cited in Leithwood & Menzies (1998). In the early 1980s Australia adopted SBM in accordance with its decentralisation and devolution policy (Chapman & Boyd, 1986). Administrative committees were established within schools and the function of school councils was altered to a fully collaborative decision making model. Similarly, in 1988 the government of the UK passed the 'Education Reform Act' which included a decentralisation plan[37] where financial management of schools was delegated to the governing bodies of schools (Chapman & Boyd, 1986). This comprised the principal, elected parents, community members and a number of staff members. Amongst the developing countries, India opted for decentralisation of planning and management of primary education[38] where resources were allocated directly to districts (Varghese, 1996). This also included the involvement of local bodies and communities in the education planning process.

Although these countries' cases differ in the type and degree of decentralisation, they have been successful in changing the existing administrative and decision-making structures as manifested in their respective policies. It is believed that policy decisions and management decisions such as the hiring and firing of teachers are taken by the school personnel they can be aligned to the local needs of the schools and thus improve teaching and learning.

Another rationale behind decentralisation in education is that it facilitates community-school participation. This can have several advantages including an increase in the faith that parents and communities place in their schools. Cummings et al. (1992 as cited in Chieuw & Mandolang, 1992) drew on the Sri Lankan experience. They concluded that by strengthening the role of the principal in a school/community relationship an exchange of resources and the organisation of educational activities were facilitated. This, in turn, reinforced the relationship that the school had with its superior authorities.

[37] This is called the 'Local Management of Schools' (LMS).
[38] A programme known as the 'District Primary Education Programme' (DPEP).

In addition, if the parents and community members hold suitable skills such as law and accounting they can probably guide the school better than the administrative staff in the school.

However, not all cases of decentralisation have been so successful. Fullan and Watson (2000) reviewed several empirical studies, to identify the impact of SBM and concluded that it had failed to improve education outcomes. They identified two main reasons for this failure. Firstly, central government maintains a tight grip on certain aspects of authority and secondly, there was a lack of expertise to manage the daily activities that would enable improvement within the school. Such is the case in Jamaica, where SBM failed to achieve its objectives due to a lack of training and 'know-how' amongst the principals and local community (Fiske, 1996).

This section looked into how decentralisation can bring about improvements in education, specifically, how the community can be mobilised to implement alternative strategies that can bring about the same effect as lengthening school day. The following section examines privatisation in education, another policy emerging in most of the developed and developing countries to improve the quality of education. It is also explored as an alternative policy direction for efficiency in schooling, the focus of this thesis.

4.4.2 Privatisation in Education

The growing size of governments and their expenditure, coupled with complex, inefficient bureaucracies, have been largely blamed for diverting resources and 'crowding out' the private sector. Hence, many countries have been focusing on public sector reform (Mascarenhas, 1993) — and one such reform is privatisation. This is seen as promoting fundamental values such as freedom of the individual, consumer choice and the opportunity for greater initiatives by the private sector within a countries' economic development.

Historically, governments have played a major role in the provision of education mainly due to equity concerns and market failures. However, in order to ensure a high quality product innovative programmes and initiatives are crucial and these go beyond public resources and leadership (Patrinos, Barrera-Osorio, & Guaqueta, 2009). Proponents emphasise that privatisation is a reliable tool which can improve education in

developing countries. Hence, it is gaining popularity in the education sector in both the developed and developing world. As Green (2005) highlighted, privatisation brings out the advantages of competition within the education sector and at the same time it introduces parents and students to different options within the private range. According to Carnoy (1997), this competitive pressure will compel school authorities to provide higher quality education and at the same time reduce costs. In addition, privatised schools present an opportunity to implement a comprehensive package of innovations, including curricula and instructional and governance changes, thereby bringing down costs and improving results (Bauman, 1996).

Scholars who are against privatisation such as Geo-Jaja (2004) believe that market processes, whilst possibly leading to efficient outcomes, fail to generate the positive externalities associated with public sector investment in education and human development. In addition, according to Azfar and Zinnes (2003, as cited in Nordveit, 2005), the question of whether privatisation leads to low levels of corruption has not been evaluated since private producers can also waste funds and deliver poor products. An educated population is considered an essential ingredient for harmony and peace within a country. This is the reason why Geo-Jaja (2004) believed that the state should continue to play an important role in education thereby ensuring that the economic and social benefits of education are attained to their fullest.

4.5 Conclusion

This chapter has examined the concept of lengthening school time, its effects and other policies that improve student performance. An exploration of these factors was necessary since the literature indicates that the lengthening of school time in general does not lead to improvements in academic performance. In addition, for an economic assessment opportunity costs of lengthening the school day and the effectiveness of alternate options are important.

The structure of school time, based on its components, was analysed. With reference to several studies, it was concluded that increasing school time does not (in general) have a significant impact on performance. Optimum use of the allocated time and strengthening other inputs were the main arguments taken from the literature. A number of these other inputs, including teachers, instructional technology, peers, parents and

community were also examined in relation to their influence on students' learning. In addition, the ways in which reforms at the sector level, such as decentralisation and privatisation, could bring about improvements in quality, was discussed.

To reiterate, the main discussion of this thesis is shift-schooling and its impact on student performance. It has been found that DSS itself does not hinder academic achievement but due to the presence of negative externalities, a number of countries have considered de-shifting. Through an examination of a few available countries' cases it was found that the process is costly and drawn out. Depending on the costs involved the academic benefits were marginal. In order to further investigate this issue, additional cases relating to the lengthening of the school day were examined. Although the results were basically the same, they showed that the issue is more complex than just total time. Maximum use of allocated time and the improvement of other factors that affect performance were emphasised.

The following chapter analyses the main themes of this thesis in the context of the Maldives. The research questions are answered based on the progress of de-shifting and overall education conditions in the Maldives.

5 Application to the Maldives

5.1 Introduction and Overview

The main focus of this thesis has been to assess the desirability of de-shifting in the Maldives. The previous chapters have included an overview of DSS and the related costs and constraints of de-shifting. In addition, alternative options such as improving the quality of teachers, the use of technology in schools and peer and cross-aged tutoring were explored. In addition, influence of parents and time-out-of-school were examined. The literature indicates that some of these factors could bring about the same outcome of improved academic standards — probably at a lower cost. However, under a centralised system administrative and bureaucratic procedures may limit the implementation of these options. Thus, structural reforms were also discussed in relation to improving the quality of education.

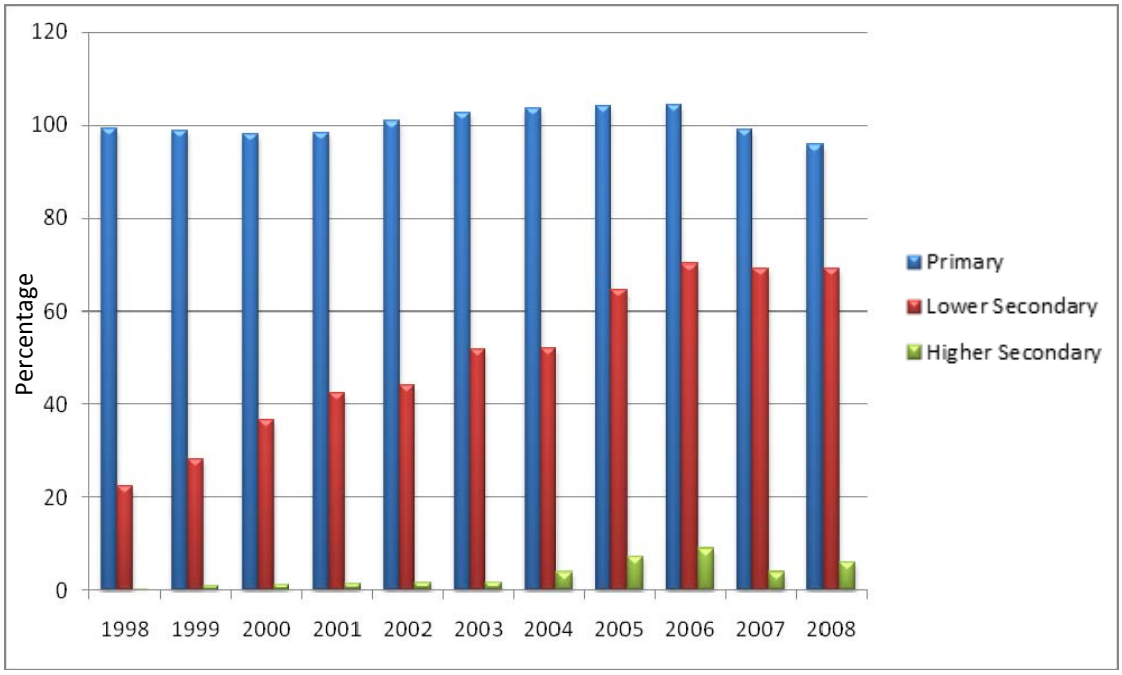
This chapter attempts to assess the main themes that have been discussed so far, in an attempt to answer the research questions within the Maldivian context. There are factors within the school system including the quality of teachers and resources that need to be of an adequate standard irrespective of the number of shifts the schools are operating. Hence, it is necessary to examine the educational background, especially the condition of these factors and access and equity, in order to justify de-shifting. This chapter begins with an overview of the shift-schooling structure and how DSS has contributed to education in the Maldives. This is followed by an examination of the policy objectives behind de-shifting and the associated costs and constraints in terms of the progress that has been made to date. The overall situation of the education sector in the Maldives is further explored in the following section together with the other factors (mentioned in Chapter 4) and the initiated structural reforms. With this knowledge justification for de-shifting is analysed taking into account the country's financial situation and circumstances within the education sector before concluding the chapter.

5.2 Double-shift Schooling in the Maldives

The Maldives is a small developing nation. It faces several challenges in providing education including a lack of both physical and human capital and financial resources. In order save on such costs the Maldives' schools have operated double-shifts since

formal schooling began in the country (MPND, 2007c). DSS has contributed significantly to the accomplishment of several milestones. Amongst these include achieving the MDG of UPE (as indicated in Figure 5.1) and obtaining high literacy rates which most countries in the developing world are still struggling to achieve.

Figure 5.1: Net enrolment rate by level of education, 1998 to 2008



Source: MOE Maldives, 2010b

Figure 5.1 shows the net enrolment rate (NER) at different levels of education, from 1998 to 2008[39]. It shows that enrolment at primary level has remained high throughout this period. However, this has not been extended to secondary grades. Although NER for lower secondary education has increased gradually, it still remains low (69 per cent), whilst that of higher secondary for 2008 is drastically lower (6 per cent). The main reason behind this situation is the lack of access to secondary education in some of the atolls (Shareef 2005).

5.3 Structure of Double-shifts

Prior to 2009, the double-shift system (based on the end-on type) was common to all schools in the Maldives. In this system, the morning shift starts at 6.50 am and ends at

[39] NER above 100 is due to the use of estimated population in the calculation and data duplications from schools (MOE Maldives, 2010b).

12.05 pm whilst the afternoon shift begins at 12.50 pm and runs until 6.30 pm[40]. It is not known whether the teachers' allocation to shifts is based on any criteria other than according to the grades they teach. Students' allocation to shifts can be based on a range of factors such as:

1. *Grade* - In the majority of schools, lower grades are placed in the afternoon shift and higher grades in the morning shift;
2. *Stream* - For example, for more demanding science and art subjects students study in the morning, whilst business students (who make up the majority) study in the afternoons;
3. *Gender* - This is practiced in some private schools, where boys attend in the morning.

Usually there is a different set of management staff (deputy principal, supervisors and head of departments), teachers, and administrative staff for each shift, although there are some teachers who work both shifts[41]. However, one principal oversees the entire school (Shareef, 2008). Principals and assistant principals are appointed to government schools by the Ministry of Education and (since there is no fixed term of employment) frequent changes in school management have been observed, sometimes on a yearly basis (Qasim, 2007).

5.4 Objectives behind De-shifting

Despite achieving UPE and high literacy rates, the Maldives education system faces several challenges, in terms of quality and equity. Chapter Two identified several educational, economic and social costs of DSS, almost all of which are apparent in the Maldives. Specifically, an increase in private tuition and juvenile crime together with a high unemployment rate amongst school leavers are major concerns that need to be addressed. The current government believes that these hurdles can be tackled by allowing the development of individuals (academically, physically and spiritually) through the school system, and this requires de-shifting (Government of Maldives, 2009). Consequently, in 2009 the president opened the first single-shift school and

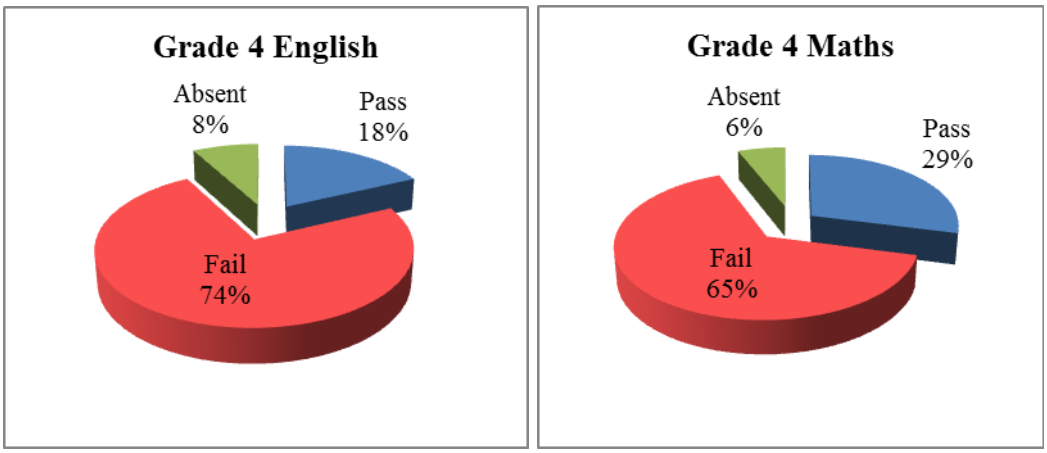
[40] Slight variations are possible for start and end times of sessions amongst various schools. Typically, on one day of the week, both sessions finish 35minutes later than the usual time. Finishing times may also change, depending on various extra and co-curricular activities, although this may be only applicable to certain groups of students.
[41] Mostly in a different school.

announced that by the end of his five year term all Maldivian schools would be single-shift. This section details the specific objectives behind de-shifting and offers an indication of how de-shifting will help achieve these aims in the Maldives. It also offers specific details in relation to the educational, social and economic background presented in Chapter One.

5.4.1 Improving the Academic Performance

Although the country excels at enrolment in the primary level, this achievement has not been extended to other levels. Moreover, national assessments reveal low levels of achievement across all grades (Didi, 2007). Figure 5.2 shows the results of a nationwide diagnostic test for Grade 4 students in the two core subjects, English and Maths. It can be seen that the overall result is very poor with just 18 per cent and 29 per cent achieving passes[42] in English and Maths, respectively. The same figures for Grade 7 (displayed in Figure 5.3) are even worse, at 16 per cent for English and 13 per cent for Maths.

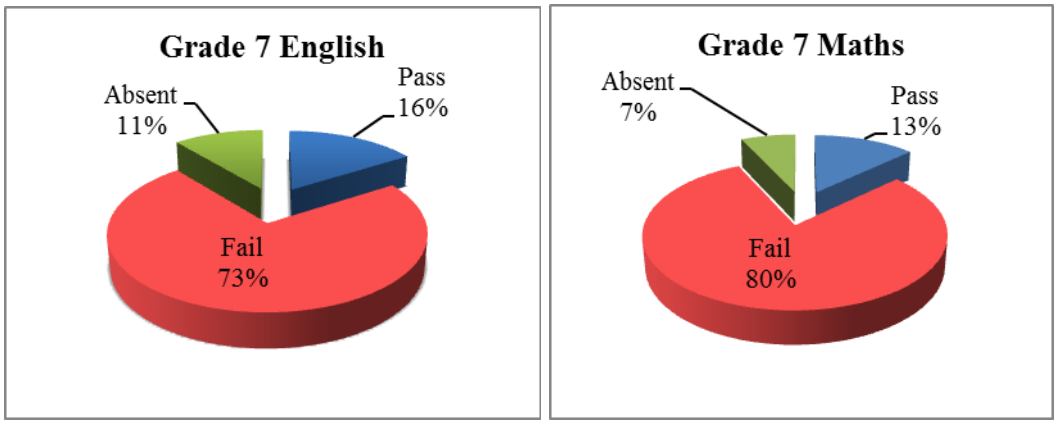
Figure 5.2: Results of diagnostic test, 2008, Grade 4



Source: MOE Maldives (2008b). Adapted from slides 16 and 20.

[42] Students who achieve either A, B or C.

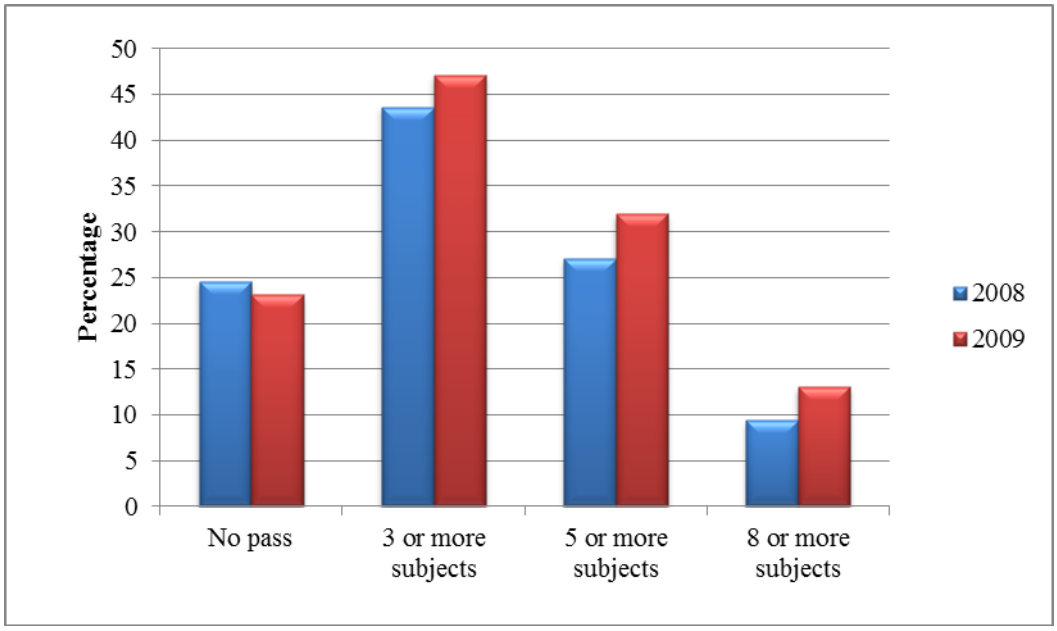
Figure 5.3: Results of diagnostic test, 2008, Grade 7



Source: Ministry of Education (2008b). Adapted from slides 44 and 57.

These low achievement levels are apparent even at secondary level. Figure 5.4. which shows the number of students achieving passes in different number of subjects, indicates that approximately only one third (or less) of the students who sat the Cambridge IGCSE in 2009 achieved passes in five subjects[43].

Figure 5.4: Pass percentage of students at Cambridge IGCSE 2008, 2009



Source: MPND, 2010b. Data accessed from:
http://planning.gov.mv/yearbook2010/yearbook/7_education/7.20.htm

Exactly how de-shifting will improve academic performance has not been mentioned in any of the policy documents, or within the additional government documents that have

[43] Included in these five subjects are Islamic Studies and the Dhivehi Language (the local language). Local exams are set for these subjects and they are counted as equivalent to GCSE 'O' level examination papers.

been referred to. However, based on countries' cases referred to in Table 3.1 it can be assumed that the Maldives is also expecting de-shifting to result in more teaching and tutorial time in addition to offering special attention to students from low SES.

5.4.2 Reducing Private Tuition

According to London (1991), DSS has the potential to worsen social inequalities as has been apparent in many countries. In the Maldives (because all schools have previously operated double-shifts) direct equity concerns regarding instructional time may not be a significant issue. However indirect inequalities such as private tuition have become such an integral part of the Maldivian education system that it has become complementary to formal schooling, for children to obtain a decent pass mark (Naseer, 2011). Since the availability of tuition depends on the socio-economic background of the family this tends to exacerbate an already severe situation of income inequality within the country. The ultimate result of private tuition being an essential educational cost will be an increase in dropout rates especially by children from resource-constrained families (Elbadway, et al., 2005), and this have economic and social consequences.

If teachers are required to teach a full day then necessarily, they would be required to teach extra subject hours which could include extra tutorials. Schools can target special remedial programmes for students with low academic standards. This might mean that students would have less need to seek private tuition. Such is the argument put forward by Aishath Safoora (the principal of the 'Centre for Higher Secondary Education' - CHSE) for the reforming of timings and programmes within her school (Shifleen, 2010). Whilst formal classes finish by 2 pm, tutorial and student support programmes are held in the afternoons. She believes that these programmes will eliminate the need for private tuition.

5.4.3 Reducing Juvenile Crime

Juvenile[44] crime such as drug abuse, gang fights, thefts etc. are on the increase and it remains a serious social concern that needs to be addressed in the Maldives. Twenty nine per cent of all arrests made in 2010 involved under 20 year olds (Maldives Police

[44] In the Maldives, people under 18 years are considered to be children. However, due to over-age students studying in private schools, the majority of the under 20s are supposed to be attending schools.

Service, 2010). From the years 2000 to 2006 the number of juveniles arrested for various crimes increased from 222 to 413, an increase of 46 per cent. (Juvenile violence, 2007) and those specifically related to violent crimes increased by 23 to 117, an increase of 500 per cent. The majority of these arrested youths are under 18 years of age and this figure also includes girls. These figures indicate the urgent need for a remedial policy.

Wilson (1987 as cited in Levitt and Rochester, 2001) believed that idle youth time was the main determinant of criminal activity amongst juveniles. Extensive data collected from eight states in the USA confirms that the peak time for juvenile crime is during 'off school hours' where children are left unsupervised (Fox & Newman, 1997). This situation is worsened in the case of double-shift schools where the children have more free time and truancy is much easier since it is difficult to detect who is missing from classes and who is supposed to be out of school. According to Fox and Newman (1997), juvenile crimes can be reduced through quality after-school programmes. The Maldives does not have such programmes and even if they did they would be unaffordable for the majority of students. By lengthening the school day children could be occupied for most of the day. This was also the major rationale for de-shifting in Trinidad and Tobago.

5.4.4 Reducing Unemployment

According to the MPND (2008), unemployment in the Maldives was at 14.4 per cent in 2006 and it was primarily comprised of school leavers. This situation, together with a heavy reliance on expatriate labour are a consequence of vocational and skills training being given little attention within the education system (Hayashi, 2009). One of the policies put forward to reduce unemployment is to ensure that the school system introduces students to employment, through work experience in employable vocational skills such as carpentry and home economics (Government of Maldives, 2009). Since time constraints within the double-shift system do not allow for the teaching of subjects which are not related to the set external curriculum, it is essential to lengthen the school day by de-shifting in order to incorporate such subjects into the curriculum.

5.5 Current Progress and Challenges

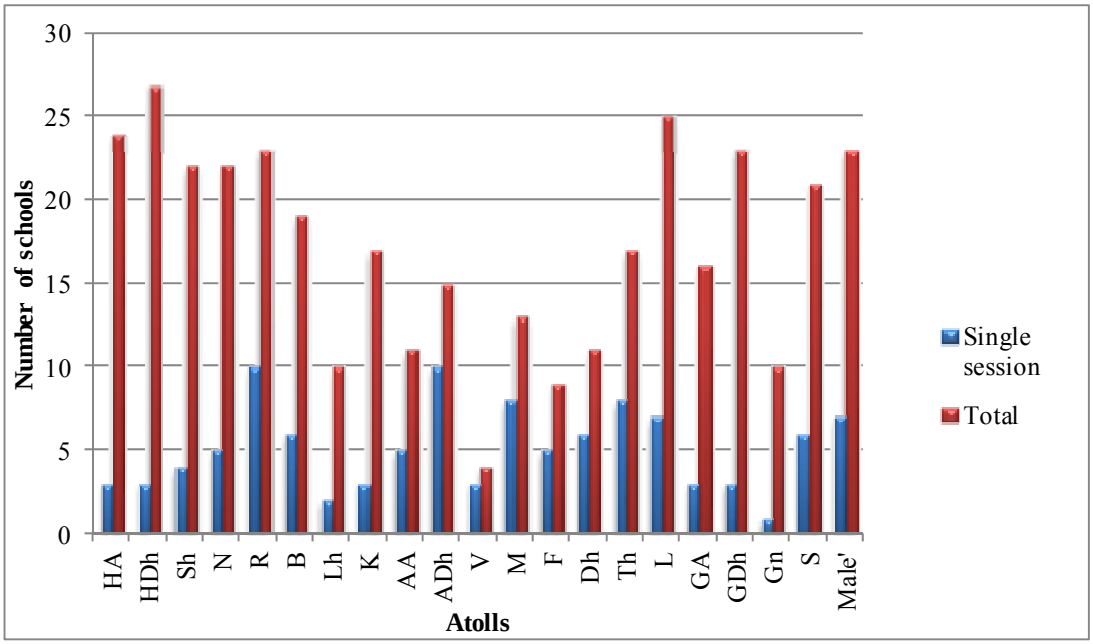
The previous section whilst outlining the objectives behind de-shifting also presented a clearer picture of the Maldives' education system in addition to highlighting specific social and economic issues. Academic standards overall are low and there is a heavy reliance on private tuition. In addition, high youth unemployment is also to some extent based on the education system. It is expected that through de-shifting positive improvements will occur and affect these issues. The following section presents the progress and challenges of the transition to date.

5.5.1 Progress

Unlike Singapore where the de-shifting procedure and plans are clearly laid out, the Maldives do not have a transparent course of action relating to which schools will become single-shift and when this will occur. This makes it difficult to verify whether targets are being achieved.

Figure 5.5 shows the total number of schools and those that were operating single-shift as of 2009. It shows that from a total of 362 schools, 108 were operating single-shifts. From these, 94 per cent had a school population of less than 500 (see Appendix E). The majority of these required just one or two additional classrooms, to convert them to a single-shift. However, the main challenge now is to transform those schools with a higher student population.

Figure 5.5: Total number of schools and single shift schools by atoll, 2009



Source: MPND, 2010b. Adapted from Table 7.18 Single Session Schools, 2009.

Changes in School Timetable

An analysis of the changes in the school time table is necessary, in order to compare how additional time is being used. Section 3.7 mentioned how this time was used in some countries' cases, for example strengthening existing subjects, the introduction of vocational subjects and providing specific assistance to students with low academic standard. Detailed information on how the additional time is being used in the Maldivian schools is not available. Information from the conducted interviews does, however, give a brief indication about the changes in timetabling. This is summarised in Table 5.1.

Table 5.1: Changes in school timetable

		DSS		SSS
		Morning	Afternoon	
Formal school time (in hours and minutes		5 hrs 30 mins	5 hrs 30 mins	8 hrs
The time session begins		6.30 am	12.30 pm	6.30 am
The time session ends		12.00 pm	6.00 pm	2.30 pm
Reporting time	Teachers	6.25 am	12.25 pm	6.25 am
	Students	6.30 am	12.30 pm	6.30 am
Starting time for classes		7.00 am	1.00 pm	7.00 am
Minutes per period		35 mins	35 mins	45 mins
Number of breaks		1	1	2
Duration of each break		20 mins	20 mins	30 mins
Number of periods a day		8	8	6

Table 5.1 is based on the feedback from Interview Information and it is possible that other schools may have a different timetable. According to the table, school time has increased by two and a half hours, however academic time (class time) has actually decreased from four hours 40 minutes (eight periods, 35 minutes each) to four hours 30 minutes (six periods, 45 minutes each). In addition, the number and duration of breaks has also increased. Under SSS there is class time (four hours 30 minutes), assembly (30 minutes) and breaks (one hour), with an additional hour not accounted for. In some schools a transition of five minutes is allowed for students and teachers to move from one class to another after every period (Interview Information). Although formal school time under SSS ends at 2.30 pm, extra classes and activities continue until late in the afternoon (Interview Information).

Since transition is still in its early stages, the majority of the schools that have been converted are those with smaller student rolls. Changes in instructional time indicate a slight fall, with the number and duration of breaks increasing compared to the previous double-shift system.

5.5.2 Challenges

As highlighted in Chapter Three, the cost, in terms of building infrastructure, classrooms, laboratories, toilets etc, is likely to remain the major constraint when de-shifting is being considered. In addition, availability and cost of teachers can be a major constraint. However, some of these costs can be limited to the transitional period. In addition, issues of space and the resentment of teachers are some of the challenges faced by the Maldives.

Costs

Several obstacles mainly related to cost arise in the process of de-shifting and some of these have been explored in Chapter Three. These costs have often turned out be larger than expected. As a result, countries such as Trinidad and Tobago and Hong Kong had to delay their de-shifting procedure (London, 1991, Yim, 1989). There is a lack of information relating to details of the costs involved in the case of the Maldives, which tallies with Ali's (2006, p. 25) affirmation that the "budget allocation information is not disclosed". More recently it has been revealed that, in 2009, 19 per cent of the National budget was allocated to Education compared to 16 per cent in both 2007 and 2008. (MNDP, 2010b). Total education budget for 2009 was 2302.515 million Rufiya[45] (US$179.184).

The construction of additional classrooms needed to convert 20 schools[46] to single-shift was an estimated US$ 1,712,450, In addition, a consultancy project which was required to perform a situation analysis[47] and develop an implementation plan for the conversion of all schools in the country, required US$ 10.35 million (Maldives Partnership Forum III, 2009). It is expected that the capital cost of de-shifting schools with larger student populations will be much higher since it will require more classrooms in addition to laboratories, staffrooms, toilets and other amenities

[45] Maldivian Currency.
[46] 20 schools need either two or three classrooms to be built for the conversion.
[47] This analysis was to be based on the procedure and experience of the 45 schools already converted: The document also recognises that there is much to be gained from international best practices.

Scarcity of Land

In the past, no school in the Maldives has operated a single-shift, due to both financial constraints and a lack of space (Qasim, 2007; Zahira, 2005). This is a major issue, especially in the capital, which within its two square kilometres houses 35 per cent of the total population (MPND, 2008) and 28 per cent of the school enrolments (MOE Maldives, 2010a). In 2008, there were 23 schools, of which 13 were government ones. The average roll of these schools was 1700, with three schools having over 2000 (MOE Maldives, 2010b). Converting these schools will require new schools or the building of additional storeys of classroom blocks within the already congested schools. Figure 5.6 is a model of a new seven-storey school building yet to be built.

Figure 5.6: Model of a new seven-storey school building

Source: MPND (2011) Adapted from Project Arabiyya School: http://planning.gov.mv/en/images/stories/news/2011/January/ARABIYYA_SCHOOL.JPG

Teachers' resentment

Table 5.1 indicates that formal school time has increased. In addition, the teachers' workload has increased without any change in their salaries (Interview Information). This will have a negative effect on their household income. In the Maldives, it is

common for teachers to teach both shifts, and in their spare time they also conduct private lessons. This trend is especially evident with expatriate workers who represent 34 per cent of the profession (Ministry of Education, 2008). These teachers in particular go from one teaching job to another, from morning until midnight everyday (Mohamed, 2006). Reforming teachers' salaries has been on the agenda since 2006, and teachers went on strike when it failed to happen in 2008 (Lang, 2008). Their pay structure only slightly improved at the beginning of 2009, when the current government modified and aligned the salaries of all members of the civil service. However, this situation was reversed, when the government reduced civil servants' nominal pay by 10-20 per cent as part of measures recommended by the IMF, to improve the country's fiscal imbalance (International Monetary Fund, 2009). Although this decision has been challenged by the Civil Service Commission and the opposition parties, the government plans to keep paying lower wages and allowances until early 2011 (International Monetary Fund, 2010).

Although the exact figures of costs associated with the transition are not available, it is expected to be a major component of the education budget and therefore, conversion to single-shift schools may take a longer period than anticipated. In addition, a lack of space will be a major concern together with teachers' defensive attitudes towards lengthening their school day.

The following section examines the other variables such as teaching and learning conditions within the Maldivian school system, especially in terms of resource allocation and the disparity between the capital and atoll schools. It is an attempt to indicate areas where investment is an immediate requirement, in order to achieve the target of improving academic standards overall.

5.6 Variables that Affect Quality of Education

Some of the core factors that affect student academic performance, including school variables, parents and peers and time-out-of-school, has been discussed in Chapter Four. This section attempts to look at these variables within the Maldivian context. However, analysing all the factors is difficult due to a lack of information. Firstly, the situation in the Maldivian schools, in terms of teachers, classrooms and basic facilities are analysed. The condition of these inputs needs to be adequate for an effective learning

environment. A brief examination of the main external factors which affect schools (mentioned in Chapter Four) is presented which is followed by an exploration of structural reforms.

5.6.1 Teachers, Classrooms, Basic Facilities and the Use of Instructional Technology

This section attempts to generate a clearer picture of the Maldives' school system so that an analysis of where resources are needed most can be undertaken. It examines the overall situation of teachers, classrooms, basic facilities and use of instructional technology. Another aim is to highlight the disparity of these factors between the capital and the atolls.

Teachers

To reiterate what has been highlighted in Chapter 4, "one consistent finding emerging from research is that teacher quality strongly influences student outcomes" (Hanushek and Wößmann, 2007, p. 1). This being so, the low achievements rates of the Maldives can be due in part to teachers and their quality of teaching.

As indicated in Figures 1.9 and 1.10, the country has a high reliance on expatriate teachers and untrained teachers (34 per cent and 31 per cent respectively). The number of untrained teachers is highest in the primary grades, where 42 per cent of primary teachers are untrained or temporary. In particular, the schools in the outer atolls suffer more due to a lack of trained teachers. Thirty per cent of all teachers in the atolls are untrained whilst the figure for the capital is 8 per cent (MOE Maldives, 2010b).

High numbers of expatriate teachers may also affect the quality of teaching. Zahira (2005) drew attention to issues faced by Majeediyya School, a lower secondary school exclusively for boys, which employs twice as many expatriate teachers as local teachers[48]. Not only do these teachers find it difficult to relate their subject content to local culture and values, they also encounter more behavioural issues. Zahira's study, which focuses on challenging behaviours, found that the mean number of behavioural cases per period (observed in classes taught by expatriate teachers) was 20.7[49], whilst

[48] School employs 34 local teachers and 62 expatriate teachers.
[49] Five teachers and two sessions each making a total of 10 sessions.

that of local teachers was 11.6[50]. Zahira (2005) stresses the importance of PD for teachers in order to deal with this issue.

Professional Development for Teachers

The importance of professional development for teachers both to improve student performance and to retain teachers in their profession has been highlighted in section 4.3.1. Based on their research on different issues, Zahira (2005) and Shareef (2008) have concluded that PD is also a vital requirement for Maldivian schools. Zahira (2005) stressed the importance of PD for secondary school teachers, particularly in the area of behavioural management. This was an urgent and immediate requirement faced by teachers, to overcome the behavioural issues that sometimes take up almost half of the class time. A range of behavioural problems including, 'goofing off', class disruptions, defiance and aggression have been observed. Although there are several reasons for this, Zahira (2005) states that it can be reduced through PD for teachers. Teachers need to develop their classroom management skills and be able to help students deal with anger. The expatriate teachers though may be better qualified, need PD to learn the values in the culture and be able to relate their teaching subject area to the local context.

It is worth noting that the 'Bachelor of Teaching Secondary Programme' offered by the FE includes three compulsory modules: *Adolescent Issues, Introduction to Counselling and Guidance, Classroom Management*. These modules need to address the issues highlighted by Zahira (2005) to equip teachers with precise strategies with which to deal with these challenges. It is also necessary to highlight the need to strengthen these modules at FE.

Shareef (2008) emphasised the need for PD for teachers especially when introducing new strategies to develop classroom teaching and learning. She draws these conclusions based on her research, which found that PD not only improves teaching but it also improves teachers' motivation and confidence. She believes that the current PD programme is ineffective in addressing problems faced by teachers in classrooms. It is limited to a one-off development seminar each year and a series of in-school supervision sessions. Furthermore, the majority of the island schools rarely receive any

[50] Six teachers and two sessions each making it a total of 12 sessions.

professional development and (according to Ali 2006, p. 26), “schools and teachers are very much left to get by themselves”.

Classrooms and Basic Facilities

According to Zahira (2005), almost all schools face problems of crowded classrooms, even with double-shifts. In order to describe the nature of classroom structure and school buildings, she takes the example of Majeediyya School, a lower secondary school in the capital, exclusively for boys[51]. Typical of all Maldivian schools this one suffers from a lack of space which is evident from the school and classroom structures. Classrooms are distributed within three or four storied buildings. They are open (no outside walls behind the balconies or corridors) and they adjoin each other in rows. These classrooms are small and congested with rows of desks separated by a narrow passageway. This classroom structure imposes several difficulties for the learning environment within the schools. Students and noise from other classrooms can easily disrupt lessons (Booth et al., 1998; Zahira, 2005). Figure 5.7 is included to indicate the open structure of the classrooms.

Figure 5.7: Open structure of classrooms

Source: Personal Photograph.

[51] From 2011 all schools will be co-educational.

The situation in the atolls is much worse where often the blackboard is used as a partition to separate teaching areas. According to Ali (2006) these schools are often in bad repair and lacking in furniture. She describes the much worse situation of community schools in the atolls:

> Physical facilities in general are basic, multipurpose open plan, with a small hall and space for three classrooms divided by makeshift black boards: these rooms cannot be closed or locked. There are no spaces for a staff room or toilets in many schools, and teachers and pupils have to go out of school for basic needs. (p. 26)

Use of Instructional Technology

Interview Information revealed that some schools used computers and other instructional technology in teaching. This was more evident in schools in the capital. However, according to Zahira (2005) and Didi (2007), the most dominant mode of teaching in Maldivian schools is "chalk and talk". While the effectiveness of using instructional technology was emphasised in Section 4.3.1, it also highlighted the difficulty of adopting this method in developing countries.

This section briefly examined the situation of teachers, classrooms and basic facilities and the use of instructional technology in Maldivian classrooms. There is an urgent need to train local teachers in order to reduce the reliance on expatriate and untrained teachers. In addition, schools need to strengthen PD for their teachers to reduce loss of time due to behavioural issues and also to familiarise them with new pedagogy. The classroom situation and how it influences the learning environment was highlighted along with the urgent need to upgrade classrooms and basic facilities in the atolls. The use of instructional technology in teaching and learning was found to be limited.

5.6.2 Parents, Peers and Use of Time-out-of School.

The role of parents, peers and the use of time-out-of school has been emphasised in Chapter Four. These are also important in the Maldives, but a lack of relevant information hinders the exploration of these factors in detail.

Parents

Enhancing the role of parents in schools has been highlighted by Zahira (2005), the lack of which she believes has contributed to behavioural problems faced by schools. In addition, parental support is essential in monitoring and helping with homework. However, the majority of parents are not sufficiently educated for these tasks and, even if they are educated, they frequently do not have the time to help their children with their studies (Naseer, 2011).

Peers

Peers play an important role in a child's academic life. How this can be constructively utilised, through the use of peer and cross-aged tutoring has already been highlighted in Chapter Four under Section 4.3.2. Interview Information revealed that this type of tutoring is not practised in the Maldives. However, all respondents note that such programmes would be effective in helping students with poor academic standards. This can be particularly useful in the Maldives where private tuition is so embedded into the education system that any student who cannot afford to pay for tutoring is left behind educationally.

Time-out-of-school

Section 5.4.3 emphasised 'off school hours' to be a peak time for juvenile delinquency, thus highlighting the need for effective use of time out-of-school, as mentioned in Chapter 4. The Maldives does not have any after-school programmes which students can attend to constructively utilise their time out-of-school. The use of homework to effectively use time out of school is also another challenge. With most parents not being sufficiently educated the pressure of homework may also lead to an increase in the demand for private tuition. It is not known if Maldivian schools follow any particular structure for homework. Chapter 4 also mentioned the effectiveness of using the community as a resource. The study was based in the USA and such programmes may be difficult in the Maldives. The school-community partnership may need to be defined for their legal power and responsibilities (London, 1994). In addition, lack of financial and human resources can be a constraint.

This section discussed the difficulties in strengthening the role of parents, peers and time-out-of-school in improving student performance. The next section examines structural reforms and how they can bring about improvements in the provision of education and also facilitate the use of the alternative options mentioned in Chapter 4 and further highlighted in this section.

Structural Reforms

Chapter Four examined structural reforms such as decentralisation and privatisation which can bring about improvements in the quality of education. These reforms have also been initiated in the Maldives. It is important to understand the context in which these reforms are occurring so that the alternative options discussed in the previous chapter can be analysed for future policy direction in the Maldives. Therefore, this section looks into the developments of these reforms.

Decentralisation in the education sector

Traditionally, education was primarily the responsibility of local communities in the Maldives. According to Lutfi (2004), when western education was initiated the system was centralised and the role of these communities gradually decreased. At the same time disparities between the capital and the atolls in relation to the provision of even basic facilities to schools continued to increase. It is believed that a decentralised approach to the management of the school system will reduce inequalities and at the same time improve the quality of education (Government of Maldives, 2009).

As indicated in Table 1.2, 18 per cent of all schools are community owned and managed. In addition to playing a crucial role in early childhood education, local communities together with parents contribute to the improvement of schools. This includes raising funds and providing free labour. Hence, in order to strengthen the contribution and participation of stakeholders, local community, parents and teachers in schools boards have been established (Ministerial Forum, 2009). These boards are to play an important part in the management of schools and they will be given legal power, once the Education Bill is passed (MOE Maldives, 2009).

Privatisation in the education sector

The government has initiated privatisation under its PPP policy with a number of aims that include introducing school choice, strengthening school management, raising academic standards and improving the allocation and utilisation of resources in schools (Ministry of Education, 2009). Under this policy a primary school, Ghiyasuddin School (GS) has been handed over to a foreign organisation (Shifleen, 2009). A higher secondary school, the Centre for Higher Secondary Education (CHSE) Annex, was also privatised but to a local tertiary education provider (Jameel, 2010). Charging fees for what used to be public schools was not generally welcomed by parents and the public and led to demonstrations (Shifleen, 2009). The opponents of this new policy claim that whilst primary education in the Maldives was harmonious when the government was the only provider, GS would now become a private school that caters only for the country's very few rich elite thus creating a division amongst its pupils and parents. A fee of Rf 1500 (US$113.63) is charged per student per month in GS. It was decided that the government will pay school fees until the current batch of students finish their primary level. For CHSE Annex fees for existing students will also be borne by the government whilst a loan system is to be arranged for new students, to help their families with the school fees. From the 213 who completed primary in GS in 2010 only 11 wanted to continue their secondary education in the school due to the school. This was due to the school fee (Shifleen, 2010).

From the few steps taken under this policy so far it is clear that the government is experimenting with a range of possibilities under its PPP policy. These include attracting foreign investment into the country and at the same time increasing the role of the private sector in the provision of education. Although this is to be appreciated, careful consideration should be given to the procedures that are being followed, since the success of privatisation, according to LaRocque (2006), depends on proper implementation and effective political management. From the reception given to the levying of fees in the aforementioned two schools it can be seen that there is a need for more public awareness of the costs and benefits of these changes.

These structural reforms facilitate changes in the use of other factors such as schooling inputs, parents, peers and community as mentioned in Chapter 4, to bring about improvements in education. Decentralisation gives stakeholders the power to make

decisions for their school. Decisions regarding the quality of teachers, professional development for teachers, and use of instructional technology can be implemented and financed at the school level. In addition, strategies such as peer and cross-age tutoring and the involvement of the community in providing extracurricular activities, can all be facilitated without the involvement of the central government. Privatisation also gives the management the power to implement cost-effective strategies that can improve the quality of education. Moreover, the government can combine its de-shifting policy with privatisation. Whilst carrying out the privatisation of schools the government could make it compulsory for private providers to operate their school on a SSS.

This section has explored the condition of teachers, classrooms and basic resources and the use of technology in the Maldivian education system. In addition, other factors such as parents, peers and time out-of-school have also been explored. Structural reforms, including decentralisation and privatisation which have been initiated to strengthen stakeholders' participation and increase accountability and quality in education have also been highlighted. From the available information, it is clear that the teaching and learning conditions of the country (especially in the atolls) need to be addressed immediately. It is also clear that the government is taking measures to strengthen education by strengthening local and private sector participation and these moves can also be linked to the de-shifting policy. Given the condition of the factors presented in this section, the following section seeks the justification of de-shifting.

5.7 Is the Transition Justifiable?

This section analyses whether investment in de-shifting can be justified based on findings from the previous chapters (especially the other countries cases presented in Chapter Three) and also based on the present day economic and education situation in the country. The rationalisation, which is based on the objectives behind de-shifting, will be further examined to consider whether this policy is the correct measure needed to achieve these aims.

5.7.1 Drawing on the Country Cases

Drawing on the countries' cases presented in Chapter Three, it is worthwhile noting that the countries that have de-shifted their school system, that is Chile, Trinidad and

Tobago and Singapore were all in a better economic position at the time of their transition and therefore, could invest in the capital and human requirements. For example, in Chile de-shifting was successfully implemented together with the reforming of monetary returns to teachers. A range of incentives, such as doubling teachers' salaries and providing additional financial rewards and PD were offered to the teachers. In the Maldivian case, it is unlikely that all teachers will be willing to work longer hours without compensation. However, the financial situation of the country may not allow such financial rewards. The country is in need of strict measures to reduce the external deficit.

A more recent example is the case of Singapore, one of the world's most developed countries and clearly one that will not face any major financial constraints during the transition. The Maldives, although recently graduated from the list of LDCs, has an economy primarily dependent on tourism, which is highly sensitive to external shocks and natural disasters such as tsunamis. It has been highlighted that countries like Trinidad and Tobago had to postpone their commitments to de-shifting due to changes in their economic situation.

5.7.2 Analysis of the Objectives Behind De-shifting

Justification of the policy of de-shifting has been based on the educational, economic and social situation of the country. However, this rationalisation needs to be assessed in terms of its effectiveness in realising the objectives and the opportunity costs of the investment.

The main objectives of the policy were to improve academic performance at all levels and to reduce private tuition, juvenile crime and the unemployment rate. The importance of teachers in the improvement of academic standards has been examined in Chapter Four, together with suggestions on how the quality of teachers can be improved through teacher education and PD. The lack of qualified local teachers in schools has been emphasised several times. The importance of PD, especially in dealing with classroom management (which leads to a loss of instructional time) — and the need to cope with new pedagogical approaches — have already been stressed. It is not evident if any measures are being put in place for the development of teachers. Simply de-shifting the school system might not have a significant impact on the quality of teachers and

their teaching. Quality of overall teaching may even fall if the transition leads employment of more teachers that are not trained.

The need to reduce private tuition and juvenile crime, although major concerns, have never been formally researched or analysed in the Maldives. The need for private tuition, according to a report by Naseer (2011), is due to the quality of teaching being low and due to teachers not teaching 'fully' during the allocated times. These aspects can again be related to improving the quality of teachers. According to Wajdhee (2011), the situation of juvenile crime in the Maldives has been exacerbated by students who never attend school and spend their day on the streets and these children are growing in numbers. He further stressed that it is the inability of the relevant government departments to identify them and take remedial action that has led the country into this situation. Again, de-shifting may not correct this situation. Moreover, from the current situation, even if formal school time ends at 2.30 pm and activities continue until evening, it still leaves time for students to loiter around and thus create truancy.

The fact that the country is experiencing high unemployment rates could be partially due to a lack of vocational subjects being taught in schools (due to the limited time). However, another reason, which is evident from the facts presented, is that education attainment at all levels (in all subjects) remains very low. This not only leads to unemployment but also reduces the opportunities for students to enrol in the country's tertiary institutions which provide vocational and higher education.

All these points stress the importance of improving the quality of education provided in schools through improving teacher quality. This is also in line with UNESCO and MOE Maldives (2000) which notes that the current economic, social and political challenges can all be addressed through education by improving the quality and increasing its access. To answer Research Question Three, de-shifting obviously involves large costs. Given the country's current economic situation such expenditure could lead to a reduction in investment in other areas. Given the importance of improving teacher quality and reducing the educational inequality within the country, de-shifting (at this point in time) may impose high opportunity costs and it is unlikely that the mandated objectives may even be achieved.

5.8 Conclusion

This chapter began with a brief examination of the shift-school system in the Maldives and how it has contributed to UPE and high literacy rates in the country. This was followed by an examination of the rationales for de-shifting. The main reasons behind this policy were (i) an improvement in the quality of education; (ii) a reduction of private tuition and juvenile crime; (iii) an increase in employment; and (iv) a more holistic education. Glancing at the progress of de-shifting, several schools have converted to single-shift although the majority are schools with smaller populations located in the atolls. Lack of finance and space were identified as interfering with progress. This chapter further highlighted the need to improve the teaching and learning variables within schools, and emphasised the disparity between the capital and the atolls, an issue that needs to be corrected. This chapter has shown that over and above all other actions the country's education system desperately needs a qualified teaching force and improvement in the situation of classroom and basic facilities — and this is particularly true in the atolls. Due to the current situation de-shifting may divert resources from these disadvantaged areas.

6 Conclusion

6.1 Introduction and Overview

The growth of a country begins with the development of its citizens and education is the main drive for this improvement. However, given their limited resources developing countries are faced with the challenge of allocating these resources in the most efficient way to provide access to education for all their citizens.

This thesis explored one such measure, DSS as a viable option to improve access to schooling without necessarily hindering the quality of education when compared with SSS. It was found that DSS itself does not lower the quality of education, but it is the organisation of DSS, the streaming of students and the allocation of teachers that often lead to lower academic standards. This being said, it was found to generate external costs for parents and society. This situation, together with a perceived lowering of quality, has led several countries to de-shift, a process which involves substantial costs and the outcome of which, in terms of academic improvements, is not certain. Whilst increments in time do not significantly affect students' performance, the literature stresses the importance of optimising academic learning time and also improving other factors which (both inside and outside the school spectrum) affect students' academic standards. The main objective of this study was to analyse the above stated factors in the context of the Maldives, a country that had operated its entire school system on double-shifts and is now currently going through a transition to single-shift schools.

This chapter concludes this research and it highlights the main findings, in terms of answers to the research questions. The first section provides a summary of the main findings with respect to the research questions. This is followed by policy implications and the limitations of the study. The final section presents recommendations for future research.

6.2 Main Findings

In order to analyse the desirability of de-shifting as a way to improve the efficiency of schooling in the Maldives, three research questions were selected: to investigate whether DSS hinders academic performance; to ascertain the costs of de-shifting; and (given the cost) whether de-shifting is desirable.

This section presents the overall findings and specific conclusions, in relation to the Maldives and the research questions:

1. Do single shift schools provide a better academic outcome than double-shift schools?

If strictly measured in terms of academic achievement, the two systems did not show significant differences in educational outcomes. However, the limited data, the conditions of the few studies mentioned and the influence of other schooling variables and inputs, need to be considered if precise conclusions are to be reached. Furthermore, there were indications of streaming bias in the allocation of students and teachers to schools, which would naturally affect the results. A similar comparison based on the Maldives was not possible due to all its schools being operated on double-shifts prior to the policy change. Allocating students to shifts was based on grades, streams or sometimes gender and it is not known if bias exists in the allocation of teachers to shifts. In terms of educational standards, these remain low at all levels and DSS cannot be blamed for this without a full analysis of other factors that affect academic performance.

However, the literature highlights several external costs of DSS to parents and society, including private tuition, increased juvenile crime and the cost of child-minding. These factors are also found in the Maldivian situation. However, since all schools had previously operated on a shift system, these may not be entirely due to DSS. For example, overseas evidence indicates DSS may be the reason for juvenile crime but in the Maldivian case it emerged as an issue over the past ten years. The country had implemented DSS even before that time. This indicates that there are other drivers for such issues. Faisal (2008) believes that overcrowding in the capital and increase in unemployment.

2. What are the costs and issues involved in the implementation of single-shift schools?

The fixed costs of de-shifting, which include the building of new school buildings and additional classrooms and other facilities in existing schools, can be expensive especially if a large proportion of the existing schools were previously operating on double-shifts. Although these costs can be limited to the transition period, mandatory requirements such as financial compensation for teachers and other staff could imply

that variable costs will remain high, even after the transition. It is difficult to assign monetary values to these costs since only three cases were observed and there was insufficient data available. However, it is clear from the available data that costs are significantly high. In addition, the limited supply of teachers, especially subject teachers, is a concern.

Information relating to the cost of transition in the Maldives was not available, due to the fact that the transition is an on-going process and budgetary expenses have not been disclosed. However, two major constraints can be identified, a lack of space and the possible resentment of teachers. In Male', with 28 per cent of the country's school population, scarcity of land is believed to become a main issue. Lengthening the school day without compensation will have adverse effects on their household incomes. Teachers may choose to leave the profession and the schools may have to employ more untrained teachers.

3. Given these costs, is the transition justifiable?

It has been previously mentioned that research does not indicate that DSS hinders academic development. Neither has simply de-shifting been shown to guarantee academic development. Other factors and institutions play an important role. It has been found that teachers, parents, peers and time out-of-school are important in determining the academic standards of students and in addition, the organisation and management of schools can also influence student performance. De-shifting involves substantial costs, primarily consisting of educational infrastructure investments. Such investments can only be justified after an analysis of the educational situation, especially in terms of resources and equity. Various strategies such as using technology in classrooms and cross-aged tutoring have been found to increase student performance at a lower cost than the lengthening of the school day. Although use of technology requires investment, cross-age tutoring or peer-tutoring can be easily implemented. The cost-effectiveness of these policies, together with the opportunity costs of investing in de-shifting need to be evaluated.

In the case of the Maldives, the country's education in terms of the quality of its teachers, classrooms and basic resources need to be improved especially in the atolls. Education inequality in terms of access and quality also need to be addressed. Unless

these factors are developed, it is questionable as to how lengthening the school day can be translated into improvements in academic standards. Whilst de-shifting involves large costs, it also means diverting resources from more important areas.

6.3 Policy Implications

The Maldivian case is an excellent example of the fact that attaining UPE may not be an indication of the quality of schooling available in a country. With most students failing at all levels of education, it is evident that merely transitioning to SSS will not necessarily provide better academic outcomes or improve the economic and social situation of the country. Training local teachers and reducing the disparity between the capital and the atolls is a major issue that needs immediate attention. De-shifting involves large costs it can be concluded that whilst it is uncertain that de-shifting will result in improvements in the academic, social and economic condition of the country, it will divert investments from disadvantaged areas within the education sector.

The Maldives has still got a long way to go to ensure that its children are provided not just with UPE but with quality UPE which will pave their way to the higher tiers of education. However, this quality is largely dependent of the quality of its teachers. Since the system suffers from a lack of local qualified teachers, special attention needs to be given to strengthening the local teaching force. A reduction in the number of expatriate teachers would saves costs and at the same time reduces outward remittances from the country.

Extending access to secondary education (especially higher secondary education) is an immediate need, particularly in the atolls. This again requires investment in the development of teachers and resources and also ensuring in the effective use of them. This was discussed in Chapter Five, where it was found that the reasons behind de-shifting in the Maldives can all be directly attributed to the low quality of education. Although, a number of countries have lengthened the school day in order to improve the quality of their education, there is now growing research into alternative policy options, since (in those countries) lengthening the school day has failed to bring about the required improvement in education.

Overseas studies have found that alternative teaching options, such as peer and cross-aged tutoring, and use of technology in teaching have resulted in better outcomes, when compared with lengthening the school day. These are preferable options that can be considered for use within the Maldivian school system. The fact that the country is going through structural reforms will enable 'school level' decisions to be implemented without the need for the bureaucratic procedures of the centralised system. This gives the schools the opportunity to implement and finance such cost-effective strategies.

6.4 Limitations

This study has several limitations, some of which have already been mentioned under methodology in Chapter One. There is limited research on DSS and de-shifting, consequently general conclusions cannot be deduced. In addition, this research suffered from a lack of data within the Maldivian context. Increase in costs, changes in teacher workloads in addition to any related changes to the curriculum are important factors that could have improved the quality of answers to the research questions.

6.5 Future Research

The fact that in the past all schools operated on DSS and soon all schools will operate on a single-shift suggests that the Maldives represent an excellent setting for future research on comparison between single-shift and double-shift schooling in terms of access, equity and efficiency. Future research could focus on whether de-shifting does result in improvements in student performance. Costs could also be compared under both systems to decide on the cost-effectiveness.

In particular, in the case of the Maldives it is essential that teacher education be revised, in relation to the needs of the education sector, for example, classroom management needs to be given more attention. Studies that examine local teacher training programmes to identify areas to strengthen and improve the quality of teaching and the classroom and school environment would be beneficial.

Future research, particularly any based on the reasons for poor academic performance (despite the existence of private tuition) could be helpful in directing funds to the disadvantaged areas. It has already been mentioned that the country needs research on

students who leave school and spend their day on the streets. In addition, identifying ways in which the school system can retain these students is also of prime importance.

6.6 Conclusion

This study has attempted to examine the desirability of de-shifting and how it can contribute to the quality of output, i.e. the education students receive. It was found that schools operating on shifts, in general, did not lead to a lower quality of output and other factors also play an important role. However, perceived educational and external costs have led some countries to consider de-shifting. Since this study has given special reference to the Maldives, it is concluded that this country needs investment in a number of areas including the training of local teachers and improving access to and quality of secondary education which would lead to improvements in education in general. If the Maldives government disregards this aspect and instead spends heavily on school buildings, it may restrict investment in these other areas. However, once the general condition of education in terms of teachers, access to education and equity is improved, de-shifting can be considered since it has been seen to bring about social and economic benefits.

Appendices

Appendix A: Approval from Massey University Human Ethics Committee

MASSEY UNIVERSITY

14 September 2010

Aishath Sheryn
1/185 Fitzherbert Avenue
West End
PALMERSTON NORTH 4410

Dear Aishath

Re: Policy Aspects of De-Shifting in Maldives Education: An Economic Perspective

Thank you for your Low Risk Notification which was received on 14 September 2010.

Your project has been recorded on the Low Risk Database which is reported in the Annual Report of the Massey University Human Ethics Committees.

The low risk notification for this project is valid for a maximum of three years.

Please notify me if situations subsequently occur which cause you to reconsider your initial ethical analysis that it is safe to proceed without approval by one of the University's Human Ethics Committees.

Please note that travel undertaken by students must be approved by the supervisor and the relevant Pro Vice-Chancellor and be in accordance with the Policy and Procedures for Course-Related Student Travel Overseas. In addition, the supervisor must advise the University's Insurance Officer.

A reminder to include the following statement on all public documents:

"This project has been evaluated by peer review and judged to be low risk. Consequently, it has not been reviewed by one of the University's Human Ethics Committees. The researcher(s) named above are responsible for the ethical conduct of this research.

If you have any concerns about the conduct of this research that you wish to raise with someone other than the researcher(s), please contact Professor John O'Neill, Director (Research Ethics), telephone 06 350 5249, e-mail humanethics@massey.ac.nz".

Please note that if a sponsoring organisation, funding authority or a journal in which you wish to publish requires evidence of committee approval (with an approval number), you will have to provide a full application to one of the University's Human Ethics Committees. You should also note that such an approval can only be provided prior to the commencement of the research.

Yours sincerely

J. O'Neill

John G O'Neill (Professor)
Chair, Human Ethics Chairs' Committee and
Director (Research Ethics)

cc Mr Stuart Birks
School of Economics and Finance
PN342

Prof Martin Young, HoS
School of Economics and Finance
PN205

Massey University Human Ethics Committee
Accredited by the Health Research Council

Te Kunenga ki Pūrehuroa

Research Ethics Office, Massey University, Private Bag 11222, Palmerston North 4442, New Zealand
T +64 6 350 5573 +64 6 350 5575 F +64 6 350 5622

Note: The thesis title used in this letter was the proposed title was the proposal title. A more relevant title was selected for the final thesis.

Appendix B: Information Sheet

Massey University
COLLEGE OF BUSINESS
Kaupapa Whai Pakihi

DEPARTMENT OF ECONOMICS
& FINANCE
(Palmerston North and Wellington)
Private Bag 11 222
Palmerston North 4442
New Zealand
T 64 6 356 9099 extn 2323 or 7744
F 64 6 351 5651
www.massey.ac.nz

Economic Aspects of Education in the Maldives

INFORMATION SHEET

Researcher Introduction

This study is being carried out by Aishath Shcryn who is currently studying for a Master of Arts in Economics degree at Massey University, New Zealand. The research is being supervised by Mr. Stuart Birks, Senior Lecturer, Department of Applied and International Economics, Palmerston North, and Emeritus Professor Wayne Edwards, Massey University.

Project Description and Invitation

The purpose of this research is to study the economic aspects of some of the policies undertaken to in the education sector of the Maldives. A major part of this study is to comparatively analyse the difference between single and double shift schooling in the light of international literature and consider its relevance for the Maldivian context. Therefore, one of the aims is to analyse the changes in timing, number and duration of classes and breaks, and subjects offered in single session schools compared to double session ones. In addition to this, general impressions of the attitudes of school management, teachers, parents and students will also be noted.

Another aspect that will be studied briefly is the decentralization and privatization of education which are at the implementation stage in the Maldives.

The researcher invites you to participate in this project.

Participation Identification and Recruitment

Participants in this project are heads of schools (Principals or other persons at management level positions) currently involved in the transition from double to single sessions. In addition to this, superintendents at the educational units in the provinces and higher rank officials at the Ministry of Education will be approached for relevant sources of information.

Project Procedures

Policy implications will be studied using comparative analysis of overseas experience. In addition to standard document searches, various people as described above will be approached for relevant sources of information such as policy documents and reports. These

Massey University
COLLEGE OF BUSINESS
Kaupapa Whai Pakihi

DEPARTMENT OF ECONOMICS
& FINANCE
(Palmerston North and Wellington)
Private Bag 11 222
Palmerston North 4442
New Zealand
T 64 6 356 9099 extn 2323 or 7744
F 64 6 351 5651
www.massey.ac.nz

requests through emails will also request basic factual information (such as the changes in the timing of school shifts), however, they may give some feedback regarding the general opinion of teachers and parents which can be relevant to the study. Therefore, the researcher wishes to make clear to these people that these general views may be used in the study.

Data management

Data will be gathered by the researcher in the form of email responses and will be securely stored. All records on computer will be password protected and access to the data will be restricted to the researcher and the research supervisors. Data will be stored for three years before being disposed of by shredding or electronic deletions.

Should the respondent wish to remain anonymous, email responses would be de-identified as soon as possible after receipt.

Project data will be shared with participants during the research for confirmation of accuracy and authenticity. The researcher and her supervisors will be the only people accessing the data.

Participants Rights

In this research, you are invited to participate by email. You are under no obligation to accept this invitation. If you decide to participate you have the right to:

- Decline to answer any particular question;
- Withdraw from the study;
- Ask any questions about the study at any time during the participation;
- Provide information on the understanding that your name will not be used unless you give the permission to the researcher;
- Be given access to a summary of the project findings when it is concluded.

Massey University
COLLEGE OF BUSINESS
Kaupapa Whai Pakihi

DEPARTMENT OF ECONOMICS
& FINANCE
(Palmerston North and Wellington)
Private Bag 11 222
Palmerston North 4442
New Zealand
T 64 6 356 9099 extn 2323 or 7744
F 64 6 351 5651
www.massey.ac.nz

Project Contacts

You are welcome to contact any of the following people regarding the project if you have any queries or questions.

Researcher:
Aishath Sheryn
1/185, Fitzherbert Avenue
Palmerston North 4410
New Zealand,
+64 (06) 358 3817
e-mail: sherynman@yahoo.com

Supervisor
Stuart Birks
Senior Lecturer
Department of Applied and International Economics
Massey University, Palmerston North, New Zealand
+64 (06) 350 5799 extension 2660
e-mail: K.S.Birks@massey.ac.nz

Supervisor
Emeritus Professor Wayne Edwards, Massey University, and
President, International Pacific College (IPC)
Palmerston North, New Zealand
+64 (06) 354 0922
e-mail: wedwards@ipc.ac.nz

"This project has been evaluated by peer review and judged to be low risk. Consequently, it has not been reviewed by one of the University's Human Ethics Committees. The researcher named above is responsible for the ethical conduct of this research
If you have any concerns about the conduct of this research that you wish to raise with someone other than the researcher(s), please contact Professor John O'Neill, Director, Research Ethics, telephone 06 350 5249,email humanethics@massey.ac.nz."

Appendix C: Approval from the Ministry of Education of Maldives

بسم الله الرحمن الرحيم

Ministry of Education
Velaanaage – 8th Floor,
Malé 20-125, Maldives.

Ref. No. 22-E / INDIV/ 2011 / 62

23rd February 2011

To Whom It May Concern

This is to confirm that Ms. Aishath Sheryn who is studying for a Master of Arts in Economics at Massey University, New Zealand, has the permission to conduct her research project in the schools of Maldives.

The Ministry of Education is willing to facilitate in any way to assist Ms. Aishtah Sheryn to conduct her research in Maldivian Schools.

Yours faithfully,

Fathimath Muna
Deputy Director
Policy Planning and Research Section
Ministry of Education

PABX: 960 3323262; Tel. Operator: 960 3323261; Fax: 960 3321201; Website: www.moe.gov.mv

Appendix D: Single Session Schools, 2009

Single Session Schools, 2009

ATOLL	ISLAND	SCHOOL NAME	No. of students	No. of teachers
Government Schools				
HA	FILLADHOO	MADHRASATHUL SOBAH	174	28
HA	THAKANDHOO	MADHRASATHUL SHAHEEDHU ALI THAKURUFAAN	92	15
HA	MURAIDHOO	MURAIDHOO SCHOOL	159	20
HDh	FINEY	FINEY SCHOOL	128	17
HDh	MAAVAIDHOO	MADHRASATHUL HUSSAINIYYA	26	6
HDh	NOLHIVARANFARU	NOLHIVARAMFARU SCHOOL	83	16
Sh	FEEVAH	FEEVAKU SCHOOL	233	39
Sh	MAAUN'GOODHOO	MAAUN'GOODHOO SCHOOL	225	36
Sh	MAROSHI	ALMADHRASATHUL MUNAVVARAA	137	35
Sh	MILANDHOO	MILANDHOO SCHOOL	471	77
N	HEN'BADHOO	HEN'BADHOO SCHOOL	141	26
N	KUDAFAREE	KUDAFAREE SCHOOL	129	28
N	LANDHOO	LANDHOO SCHOOL	212	37
N	MAALHENDHOO	MAALHENDHOO SCHOOL	166	36
N	MAGOODHOO	MAGOODHOO SCHOOL	35	11
R	DHUVAAFARU	R. ATOLL SCHOOL		
R	AN'GOLHITHEEM	AN'GOLHITHEEMU SCHOOL	123	30
R	FAINU	FAINU SCHOOL	93	31
R	INNAMAADHOO	INNAMAADHOO SCHOOL	161	30
R	KINOLHAS	KINOLHAHU SCHOOL	102	23
R	RASGATHEEM	RASGETHEEMU SCHOOL	148	29
R	RASMAADHOO	RASMAADHOO SCHOOL	150	32
R	UN'GOOFAARU	UN'GOOFAARU SCHOOL	344	55
R	HULHUDHUHFAARU	HULHUDHUFFARU SCHOOL	330	66
R	VAADHOO	VAADHOO SCHOOL	110	27
B	DHARAVANDHOO	B. ATHOLHU MADHARUSAA	200	40
B	FULHADHOO	FULHADHOO SCHOOL	42	8
B	KAMADHOO	KAMADHOO SCHOOL	129	27
B	KIHAADHOO	KIHAADHOO SCHOOL	129	33
B	KUDARIKILU	KUDARIKILU SCHOOL	125	29
B	MAALHOS	MAALHOHU SCHOOL	117	26
Lh	HINNAVARU	LH. ATHOLHU THAULEEMEE MARUKAZU	871	110
Lh	MAAFILAAFUSHI	MAAFILAAFUSHI SCHOOL	21	9
K	GULHI	GULHEE MADHRASA	245	30
K	HIMMAFUSHI	HIMMAFUSHEE SCHOOL	193	35
K	MAAFUSHI	MAAFUSHI SCHOOL	341	56
AA	FERIDHOO	AA. ATHOLHU MADHARUSAA	100	32

AA	RASDHOO	AA. ATHOLHU THAULEEMEE MARUKAZU	204	42
AA	HIMANDHOO	HIMANDHOO SCHOOL	90	26
AA	MATHIVERI	MATHIVERI SCHOOL	149	31
AA	UKULHAS	UKULHAHU SCHOOL	155	30
ADh	MAHIBADHOO	ADH. ATHOLHU THULEEMEE MARUKAZU	449	74
ADh	MAAMIGILI	ADH. ATHOLHU MADHARUSAA	460	70
ADh	DHAN'GETHI	DHAN'GETHI SCHOOL	171	39
ADh	DHIDHDHOO	DHIDHDHOO SCHOOL	20	4
ADh	DHIGURAH	DHIGURASHU SCHOOL	112	30
ADh	FENFUSHI	FENFUSHI SCHOOL	163	30
ADh	HANGNAAMEEDHOO	HANGNAAMEEDHOO SCHOOL	165	32
ADh	KUN'BURUDHOO	KUN'BURUDHOO SCHOOL	111	25
ADh	MANDHOO	MANDHOO SCHOOL	80	13
ADh	OMADHOO	OMADHOO SCHOOL	208	34
V	FULIDHOO	V. ATHOLHU MADHARUSAA	95	24
V	FELIDHOO	V. ATHOLHU THAULEEMEE MARUKAZU	108	34
V	KEYODHOO	KEYODHOO SCHOOL	123	28
M	KOLHUFUSHI	M. ATHOLHU MADHARUSAA	205	38
M	MULI	M. ATHOLHU THAULEEMEE MARUKAZU	205	44
M	DHIGGARU	DHIGGARU SCHOOL	175	34
M	MADUVVAREE	MADUVAREE SCHOOL	104	31
M	MULAH	MULAKU SCHOOL	361	53
M	NAALAAFUSHI	NAALAAFUSHI SCHOOL	38	13
M	RAIMANDHOO	RAIMANDHOO SCHOOL	27	11
M	VEYVAH	VEYVASHU SCHOOL	47	11
F	FEEALI	F. ATHOLHU MADHARUSAA	252	37
F	NILANDHOO	F. ATHOLHU THAULEEMEE MARUKAZU	477	59
F	BILEIYDHOO	BILEIYDHOO SCHOOL	312	46
F	DHARAN'BOODHOO	DHARAN'BOODHOO SCHOOL	117	22
F	MAGOODHOO	MAGOODHOO SCHOOL	149	34
Dh	MEEDHOO	DH. ATHOLHU MADHARUSAA	280	47
Dh	KUDAHUVADHOO	DH. ATHOLHU THAULEEMEE MARUKAZU	472	78
Dh	HULHUDHELI	HULHUDHELI SCHOOL	183	31
Dh	MAAEN'BOODHOO	MAAEN'BOODHOO SCHOOL	164	32
Dh	RIN'BUDHOO	RIN'BUDHOO SCHOOL	83	21
Dh	VAANEE	VAANEE SCHOOL	36	8
Th	GURAIDHOO	TH. ATHOLHU MADHARUSAA	276	61
Th	THIMARAFUSHI	TH. ATHOLHU THAULEEMEE MARUKAZU	390	60
Th	BURUNEE	BURUNEE SCHOOL	372	47
Th	KIN'BIDHOO	KIN'BIDHOO SCHOOL	238	39
Th	VILUFUSHI	VILUFUSHI SCHOOL		
Th	OMADHOO	OMADHOO SCHOOL	104	16
Th	VANDHOO	VANDHOO SCHOOL	54	12
Th	VEYMANDHOO	VEYMANDOO SCHOOL	231	40
L	FONADHOO	L. ATHOLHU THAULEEMEE MARUKAZU	462	66

L	GAADHOO	GAADHOO SCHOOL	67	12
L	HITHADHOO	HITHADHOO SCHOOL	203	29
L	KUNAHANDHOO	KUNAHANDHOO MAKTHAB	211	33
L	GAN	MUKURIMAGU MAKTHAB	81	19
L	GAN	MADHARUSATHUL HAMAD BIN KHALEEFA AH'SANEE	454	60
L	GAN	IHA'DHOO SCHOOL		
GA	KOLAMAAFUSHI	GA. ATHOLHU MADHARUSAA	271	56
GA	DHEVVADHOO	MADHRASATHUL SULTHAAN MOHAMED	75	27
GA	KON'DEY	KON'DEY SCHOOL	33	10
GDh	THINADHOO	GDH. ATHOLHU THAULEEMEE MARUKAZU	776	101
GDh	VAADHOO	JAMAALUDDEEN MADHRASAA	201	30
GDh	THINADHOO	ABOOBAKURU SCHOOL	393	75
Gn	FUVAHMULAH	FUVAMULAK SCHOOL	296	49
S	HULHUDHOO	S. ATHOLHU MADHARUSAA	161	45
S	MARADHOO-FEYDHOO	IRUSHAADHIYYA SCHOOL	133	40
S	MEEDHOO	SHAMSUDHEEN SCHOOL	208	35
S	HULHUDHOO	HULHUDHOO SCHOOL	181	29
S	MARADHOO-FEYDHOO	MARADHOO-FEYDHOO SCHOOL	170	29
S	HITHADHOO	ALMADHRASATHUL ISLAMIYYA	511	82
MALE'	MALE'	THAJUDHDHEEN SCHOOL	1342	153
MALE'	MALE'	AMINIYA SCHOOL	2275	266
MALE'	MALE'	DHARUMAVANTHA SCHOOL	1110	166
MALE'	MALE'	HIRIYA SCHOOL		
Private Schools				
MALE'	MALE'	BILLABONG HIGH EPS INTERNATIONAL SCHOOL	510	69
MALE'	HULHUMALE	LALE' YOUTH INTERNATIONAL SCHOOL	96	18
Community School				
MALE'	MALE'	AMEER AHMED	450	70

Source: MPND 2010b.

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