Double-shift schooling: design and operation for cost-effectiveness

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Double-shift schooling: design and operation for cost-effectiveness

Third edition

Mark Bray

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Fundamentals of educational planning

The booklets in this series are written primarily for two types of clientele: those engaged in educational planning and administration, in developing as well as developed countries; and others, less specialized, such as senior government officials and policy-makers who seek a more general understanding of educational planning and of how it is related to overall national development. They are intended to be of use either for private study or in formal training programmes.

Since this series was launched in 1967, practices and concepts of educational planning have undergone substantial change. Many of the assumptions which underlay earlier attempts to rationalize the process of educational development have been criticized or abandoned. Yet even if rigid mandatory centralized planning has now clearly proven to be inappropriate, this does not mean that all forms of planning have been dispensed with. On the contrary, the need for collecting data, evaluating the efficiency of existing programmes, undertaking a wide range of studies, exploring the future and fostering broad debate on these bases to guide educational policy and decision-making has become even more acute than before. One cannot make sensible policy choices without assessing the present situation, specifying the goals to be reached, marshalling the means to attain them, and monitoring what has been accomplished. Hence planning is also a way to organize learning: by mapping, targeting, acting and correcting. The scope of educational planning has been broadened. In addition to the formal system of education, it is now applied to all other important educational efforts in non-formal settings. Attention to the growth and expansion of education systems is being complemented and sometimes even replaced by a growing concern for the quality of the entire educational process and for the control of its results. Finally, planners and administrators have become more aware of the importance of implementation strategies and the role of regulatory mechanisms, including the choice of financing methods and examination and certification procedures. The concern of planners is twofold: to reach a better understanding of the
validity of education in its own empirically-observed dimensions, and to help in defining appropriate strategies for change.

The purpose of these booklets includes monitoring the evolution and change in educational policies and their effect upon educational planning requirements; highlighting current issues of educational planning and analyzing them in the context of their historical and societal setting; and disseminating methodologies of planning which can be applied in the context of both the developed and the developing countries. For policy-making and planning, vicarious experience is a potent source of learning: the problems others face, the objectives they seek, the routes they try, the outcomes they achieve, and the unintended results they produce all deserve analysis.

In order to help the Institute identify up-to-date issues in educational planning and policy-making in different parts of the world, an Editorial Board has been appointed comprising professionals of high repute in their fields. The series has been carefully designed, but no attempt has been made to avoid differences or even contradictions in the views expressed by the authors. The Institute itself does not wish to impose any official doctrine. Thus, while the views are the responsibility of the authors and may not always be shared by UNESCO or IIEP, they warrant attention in the international forum of ideas. Indeed, one purpose of this series is to reflect a diversity of experience and opinions by giving different authors from a wide range of backgrounds and disciplines the opportunity to express their views on changing theories and practices in educational planning.

Mark Bray
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Foreword

This is the third edition of a book which was first published in 1989 and then republished in 2000 by the Commonwealth Secretariat. Both previous editions have been widely welcomed, and the book has been used as a tool for policy-makers and practitioners in a considerable range of countries.

The book is intended for two main groups of readers. One group comprises policy-makers at national and regional levels, who will be primarily interested in the balance of broad economic, educational and social factors which must be considered when choosing between models for single, double, or even more shifts. The second group embraces practitioners, who will be primarily concerned with such practical matters as staffing and timetabling. In addition to their own dominant concerns, of course members of each group require an understanding of the perspectives of the other group. Professionals from both groups can therefore benefit from careful study of the book as a whole.

A few quotations from reviews of the earlier editions help to portray the flavour not only of those editions but also of this new, revised version. For example, Keith Watson considered the first edition to be “extremely useful, readable and thought-provoking”.1 This view matched that of others.2 A.G. Hopkin observed that the systematic presentation of the book “ensures that the content and argument are accessible to anyone broadly interested in education systems and how they operate”;3 and Clive Whitehead described the book as “essential reading for all students of educational planning and administration”.4

These remarks were echoed by reviewers of the second edition. For example, Tichatonga Nhundu highlighted the fact that the book “provides real life experiences, which a school-level practitioner working in a double-shift school can readily identify with”, and described the work as “an asset to planners, policy-makers and school-level practitioners” which “should easily find a place on the reading lists of teacher preparation and educational planning and management programmes”. In similar vein Angela Little applauded the “ readable, systematic presentation, accessible content and argument”; and this view was echoed by others.

We ourselves readily endorse all these positive comments. We are delighted that this third edition keeps Mark Bray’s book easily available, and anticipate that it will be of considerable use to policy-makers and practitioners in a wide range of settings.

Henry Kaluba
The Commonwealth Secretariat
Françoise Caillods
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Introduction

This book must begin with some comments on focus and definition. The title refers to double-shift schooling. In a double-shift system, schools cater for two entirely separate groups of pupils during a school day. The first group of pupils usually attends school from early morning until mid-day, and the second group usually attends from mid-day to late afternoon. Each group uses the same buildings, equipment and other facilities. In some systems the two groups are taught by the same teachers, but in other systems they are taught by different teachers.

Some education authorities extend this model into a triple-shift system. Three groups of pupils study, e.g. from 6.30 a.m. to 10.55 a.m., from 11.00 a.m. to 3.25 p.m., and from 3.30 p.m. to 7.55 p.m. A few education authorities also operate quadruple-shifts, though Chapter 1 will explain that these systems usually have overlapping rather than end-on shifts.

The first edition of this book was entitled *Multiple-shift schooling* rather than *Double-shift schooling*. This was to make clear at the outset that discussion focused on triple and quadruple shifts as well as on double shifts. However, the term multiple-shift schooling is not so familiar to many practitioners. With this in mind, the title of the second and third editions was adjusted to use the more familiar term. The book does discuss not only triple and quadruple shifts but also single shifts. In the process, it analyses the advantages and disadvantages of different types of arrangements. However, the main focus is on double shifts.

**Variations in terminology**

Further variations in terminology may also be noted at the outset. Single-shift schools, for example, may also be called:

- single-session schools;
- unisessional schools;
- full-day schools.
Correspondingly, double-shift schools may also be called:

- double-session schools;
- bisessional schools;
- half-day schools.

Sometimes the difference in terminology implies a difference in meaning, as noted in Box 1. This requires care when using terms in different contexts. However, in most contexts the terms can be used interchangeably. It is particularly common to interchange the terms ‘shift’ and ‘session’.

**Box 1. What’s in a name?**

In most contexts, the terms single-session, single-shift, unisessional and full-day can be used interchangeably. The same applies to the terms double-session, double-shift, bisessional and half-day. But this is not always so. Examples from Botswana, Singapore and Uganda demonstrate the point.

In Botswana, the term ‘double-session’ has been used to describe schools which have different pupils in the mornings and afternoons, but the same number of classroom hours as pupils in single-session schools, and different teachers for each session. ‘Half-session’ schools have been formed in Botswana with different pupils in the mornings and afternoons but in which total classroom hours are reduced, and the two groups are taught by the same teachers.

In Singapore, single-session schools have operated on the traditional pattern from 7.30 a.m. to 1.00 p.m. They differed from ‘full-day’ schools, which were an experiment (later abandoned) in the early 1980s. Full-day schools had an extended curriculum, and did not close till 3.30 p.m.

In Uganda, the term ‘double-shift’ has been applied to schools taking the same grades in morning and afternoon. By contrast, schools with different grades in the morning and afternoon have been called ‘double-session’.

These terminological distinctions are not found in all countries. It is therefore necessary to check the precise meanings of terms in different contexts.

Some countries also have evocative unofficial terminologies. In Zimbabwe, double-session schooling is also called ‘hot seating’.
because the school seats are said never to have time to cool down! Moreover, staff in Mexico have been known as ‘taxi teachers’ because many jumped straight into taxis at the end of each morning session in order to teach afternoon sessions elsewhere. In South Africa and Namibia, double-shift schooling is called ‘platooning’ – a term which echoes a usage in the USA dating from 1920 (Kleinhans, 2002: 10).

What are the purposes of double-shift schooling?

The main purpose of double-shift schooling is to increase the supply of school places while limiting strain on the budget. Introduction of double shifts allows a single set of buildings and facilities to serve more pupils. This may be especially important in urban areas, where land is scarce and buildings are expensive. Double-shift schooling has helped many countries to move towards universal primary and secondary education. Double-shift schooling may also have subsidiary functions:

- Expansion of the number of school places broadens access. This helps governments to achieve goals of social equity.
- Where there is a shortage of teachers, staff may be encouraged to teach in more than one session. Double-shift schooling may enable the authorities to make better use of scarce human resources.
- When staff teach in more than one session, they usually have higher earnings. Double-shift schooling allows teachers to increase their incomes, and reduces the political tension that arises from low basic salaries.
- In many societies, some children are too poor to spend the whole day in school. They cannot afford the school fees, and they cannot afford to lose the incomes they could gain from working. Double-shift schooling reduces costs, so can also reduce school fees. It also allows pupils to work for more hours in the day, and thus to earn money to support themselves and their families while also being enrolled in a school. Systems which have evening shifts can cater for pupils who have to work during the day.
- If enrolment rates are already high, double-shift schooling may be introduced to reduce overcrowding. The system can permit
reduction of class size, and can also alleviate pressure on sports facilities, libraries, school canteens, and so on.

However, multiple-shift schooling may also create problems. The school day, especially in triple-session systems, is often shortened. This implies that quality is being sacrificed for quantity – that pupils are losing some classroom teaching and extra-curricular activities. Also, if teachers work in more than one session, they are likely to be tired. This can cause a further deterioration in quality. And multiple-shift systems are sometimes accused of causing social problems because children are only occupied in school for shorter periods and so have more time to roam around the streets and cause trouble.

In the view of many people, these problems outweigh the benefits. Public opinion often opposes introduction of double shifts on the grounds that the system can save money but creates educational and social problems. The extent to which this view is valid may depend on the management of double-shift systems, i.e. it concerns not only the overall concept but also the ways in which the policies are implemented. Thus, this book focuses not only on the broad policy frameworks but also on the ways in which double-shift schools can be made to work effectively. Policy-makers would be wise to consider the practicalities of implementation, without which they may find that their overall intentions may be thwarted.

**Box 2. A model for poor countries or rich ones?**

Double-shift schooling is most common in poor countries. Financial pressures in these countries are so severe that administrators are forced to investigate all ways to minimize costs. But all administrators wish to maximize cost-effectiveness. For this reason, double shifts are also used in relatively prosperous countries such as Brazil.
A single-shift system might require six schools to accommodate 6,000 pupils. But a double-shift system would require only three schools, and a triple-shift system would require only two schools. Multiple-shift schooling can permit considerable savings of buildings and land.
Part I
A framework for analysis
Chapter 1. Models for double-shift schooling

International surveys reveal many different models for double-shift schooling. This chapter outlines the most common models in order to provide a framework for subsequent analysis.

1. End-on shifts

Most double-shift systems are of the ‘end-on’ variety. This means that one group of pupils leaves the school before the next group arrives. This book is mainly concerned with shift systems of this type.

In a double-shift system, the first group of pupils comes early in the morning and leaves at mid-day; and the second group arrives at mid-day and leaves in the late afternoon. In the Democratic Republic of Congo, for example, a common pattern is:

• 1st shift: 7.15 a.m. to 12.15 p.m.;
• 2nd shift: 12.30 p.m. to 5.30 p.m.;

In a triple-shift system, three groups of pupils share one set of buildings and facilities. The pattern in some Zambian primary schools is:

• 1st shift: 7.00 a.m. to 10.45 a.m.;
• 2nd shift: 11.00 a.m. to 2.45 p.m.;
• 3rd shift: 3.00 p.m. to 6.45 p.m.

In Dominican Republic and Mozambique, triple shifts are also used in many secondary schools. Because this type of triple-shift can only operate with a very short school day, most authorities only use it as an emergency measure.

2. Overlapping shifts

Alternatively, shifts may overlap. Students arrive and leave at different times, but at some point are on the school compound together.
Box 3 gives an example of a simple overlapping shift system used in Indonesia. It enabled the school to increase its enrolment and use its buildings more efficiently while retaining the atmosphere of a single-shift school.

Box 3. Overlapping shifts – an Indonesian example

In order to increase utilization of facilities, Sabelas Maret Secondary School decided to use an overlapping shift system. Through this mechanism, it expanded its enrolment by 25 per cent while still maintaining the atmosphere of a full-day school.

In the old system, the school week had nine lessons a day, Monday to Friday. Even when classrooms were used all the time, they only accommodated 45 lessons per week. The overlapping shift system increased the school day to 11 lessons, allowing the classrooms to accommodate 55 lessons a week. This represented a 22.2 per cent increase in room utilization. Space for the students when they were all on the compound together was found by using laboratories, workshops, the library, and sports fields (for physical education). The operation of the shifts was as follows:

- **Shift A**: 9 periods per day, 8.15 a.m. to 3.10 p.m., and
- **Shift B**: 9 periods per day, 9.35 a.m. to 4.30 p.m.

Both shifts had the same lunch hour, from 12.10 to 1.10 p.m. This helped students of each shift to meet each other and to feel part of a single institution. The system required efficient timetabling, but did not cause major problems.

A more complex system of overlapping shifts has been used in Malawi to tackle the problem that many schools have insufficient classrooms and that some students must study outside. Pupils in grades 3, 4 and 5 only come when pupils in grades 1 and 2 leave, but pupils in grades 6, 7 and 8 overlap with both groups. This timetable is presented in Chapter 6.

That chapter also discusses a yet more complicated example: a school in the Philippines which managed even to have quadruple overlapping shifts. The school timetable was complex, but the example shows that classrooms can be occupied non-stop from 7.00 a.m. to 7.40 p.m.
3. Variations in the length of school week

The above models may be refined by adjusting the number of days each week that pupils attend school. In Hong Kong, for example:

- Single-shift schools have eight periods per day, Monday to Friday. They do not operate on Saturdays, so have 40 periods per week.
- Double-shift schools have seven periods per day, Monday to Friday, plus six periods on alternate Saturdays. They have 76 periods every two weeks, or an average of 38 periods per week.

By using Saturday mornings, the double-shift schools provide almost the same total number of lessons. If they worked every Saturday instead of alternate Saturdays, double-shift schools could have even more lessons than single-shift schools. However, schooling on Saturday afternoons is unpopular in Hong Kong because government offices and many businesses have had a tradition of working only in the mornings, and the afternoons are commonly set aside for family activities. Accordingly, the schools only operate on Saturday mornings. The afternoon session operates every afternoon from Monday to Friday, plus each morning on alternate Saturdays.

4. Different or shared teachers

Hong Kong primary schools have different teachers for morning and afternoon sessions. There is no shortage of teachers, and the government prohibits staff from working in both sessions because it is afraid that teachers will be tired and that quality will suffer. A similar policy has been followed in Singapore, South Korea, and parts of Nigeria.

Other countries are less fortunate. Senegal for example has been short of qualified teachers, and the authorities have been keen for these limited human resources to be utilized as fully as possible. At least some staff themselves welcome opportunities to teach in more than one session if they can increase their earnings through extra work.
5. **One set of buildings for two levels of education**

Although classrooms in many systems accommodate, for example, one grade 1 class in the morning and another grade 1 class in the afternoon, this arrangement is not universal. In Bangladesh, for example, many double-shift primary schools have taught grades 1 and 2 in the morning and grades 3, 4 and 5 in the afternoon.

The authorities in Puerto Rico have taken this idea even further. Some institutions accommodate elementary children in the morning and intermediate children in the afternoon. Other institutions accommodate intermediate children in the morning and high-school children in the afternoon. Similar patterns are found in Palestine, India and Uganda.

6. **Urban and rural systems**

Double-shift systems are most common in urban areas. This is because:

- land is more expensive in towns, and administrators therefore try to use buildings and playgrounds as efficiently as possible;
- urban areas have high population densities, which makes it easy to find enough pupils to run extra shifts.

However, double-shift systems may also be useful in rural areas, since:

- although land is less expensive, it is still important to minimize school costs;
- rural areas often suffer from teacher shortages, and systems in which staff teach more than one set of pupils can alleviate such shortages.

Only in the smallest villages is it impossible to find enough children for a double shift. Indeed, shift schools can operate with only one teacher. The teacher takes one group of children in the morning and another in the afternoon. This type of school may be found in remote parts of India and Botswana, for example.
Although most double-shift schools are large, urban institutions, some are small and rural. The smallest type of double-shift school has only one teacher. The teacher takes one group of pupils in the morning and the other in the afternoon.

7. Day and boarding schools

Most double-shift schools are day institutions. The main objective of the double-shift system is to reduce costs, and the policy seems to go hand-in-hand with elimination of boarding in order to reduce costs further.

However, the two policies do not necessarily go together. Governments may find that they have to retain boarding schools in order to serve children from remote areas, but can still run the schools on a double-shift system. The schools cannot make savings on dormitories (unless they require some pupils to sleep at night and
others to sleep in the day!), but they can make more intensive use of classrooms, laboratories, kitchens, football pitches, and so on. Tedla (2003: 71) described a large double-shift secondary school in Eritrea in which many pupils were boarders. Boarding schools can organize timetables in a more flexible way because they are not constrained by the need for children to travel early to school or to be home by nightfall, though this possibility for flexibility did not appear to be utilized in the Eritrean school.

8. **Daily, weekly and monthly rotation**

   Instead of alternating in mornings and afternoons, classes may alternate by day, week or month.

   - **Daily rotation**: One group of pupils attends school on Mondays, Wednesdays and Fridays while another attends on Tuesdays, Thursdays and Saturdays.
   - **Weekly rotation**: One group of pupils attends school in Weeks 1 and 3, while another group attends in Weeks 2 and 4.
   - **Monthly rotation**: One group of pupils attends school in January, March, May, etc., while another group attends in February, April, June, etc.

   Variations of these models have been tried in several countries. They are uncommon, however, so have been excluded from the main focus of this book. They require radical reform of the education system and strong political will.

9. **Classes for both children and adults**

   Schools may be used for children in the day-time and adults in the evening. The evening classes may be taught by school teachers or by outsiders. This model is common in both industrialized and less developed countries, and is a form of double-shift system. However, this book mainly focuses on provision for school-aged children. The model is only mentioned here in order to present a complete range.
10. **Borrowed and rented premises**

In some countries, private and community schools borrow or rent the premises of public schools when the public schools close for the day. This in effect becomes a double-shift system, since the buildings are used twice by two sets of pupils.

Two illustrations may be taken from Botswana and the Philippines. In both cases, public pressure for education has led to the establishment of self-help secondary schools. The institutions have been called Community Junior Secondary Schools in Botswana, and Barangay High Schools in the Philippines. In many cases the self-help institutions started life by using primary school buildings and teachers after the primary schools had closed for the day. For most institutions this was a short-term measure, but while it lasted was a form of double-shift system. Comparable institutions have existed in Pakistan and Tanzania.

In many countries, school facilities are also used for supplementary private tutoring. In some cases the tutoring is given by mainstream teachers who are already employed in the schools; but in other cases external personnel rent the classrooms for supplementary classes.
Chapter 2. Concepts of cost analysis

The title of this book refers to cost-effectiveness. Planners use cost-effectiveness analysis to distinguish projects which are merely cheap from ones which give good value. The term has been used in the title because it is common in everyday vocabulary. Planners may also use a related tool called cost-utility analysis. This term was not included in the title because it is less common and requires special explanation. Such explanation is among the tasks of this chapter.

Detailed examination of techniques of cost analysis reveals complexities which may not be apparent at first sight (see e.g. Levin, 1983; Tsang, 1997; Woodhall, 2004). In the context of this book, however, detailed discussion is neither necessary nor possible. Accordingly, this chapter is restricted to an outline of the concepts and procedures of cost analysis. It begins by highlighting three main types.

1. **Three types of cost analysis**

   Planners commonly use three different types of cost analysis.

   • **Cost-benefit analysis** is used when both costs and benefits can be expressed in monetary form. It is particularly useful in industry and commerce. For example, planners may match the costs of running a proposed factory with the expected value of its produce. After making a similar calculation for a different proposed factory, the planners can compare the proposals to see which is better. In education, however, it is rarely possible to use cost-benefit analysis. This is because it is difficult to determine the monetary value of literacy, mathematics achievement, sporting skills, etc. It is fairly easy for planners to calculate the costs of two schools, but it is difficult to make a monetary estimate of the products of schools.

   • **Cost-effectiveness analysis** only requires the costs to be calculated in monetary terms. Effectiveness still has to be quantified, but it can be in any unit. In education, examination scores are a common measure of effectiveness.
Cost-utility analysis provides a way to deal with subjective factors. This tool is especially useful in education because different people place different values on the products of education. The word ‘utility’ means ‘usefulness’. Planners may conduct surveys to find out the utility people place on academic achievements (i.e. the extent to which those people think that academic achievement is useful or valuable). The figures for utility of academic achievement may then be contrasted with the figures for sporting and other types of achievement. Cost-utility analysis allows planners to see how well an education system is producing the sorts of products that societies want.

In education, cost-benefit analysis is used to calculate rates of return, e.g. comparing the benefits at the macro-level from investment in primary compared with secondary education. This is different in focus from the present task, however, and it will not be discussed further. Instead, the following paragraphs elaborate on the meanings of cost-effectiveness and cost-utility analysis.

2. Cost-effectiveness analysis: a simple example

The nature of cost-effectiveness analysis may best be explained through a simple example (see Levin, 1983: 19-29; also Levin and McEwan, 2001 and 2004). This one is concerned with achievement. Educational administrators want to raise the mathematics scores of a group of pupils. The example is fictitious, but illustrates the basic principles. In this example, the administrators assess cost-effectiveness in six steps.

Step 1: Identify alternative ways to achieve the goal

Suppose that the administrators identify four alternatives:

- split mathematics classes in half, so that pupils gain more individual attention;
- introduce computers on which students can practise problem-solving;
- provide a special in-service training course for teachers; and
- prepare new and better textbooks.
Step 2: Check on the feasibility of the alternatives

It is useless to proceed further if the options are not actually feasible. Therefore, the policy-makers must check:

• that schools have sufficient land to build extra classrooms if they are needed to accommodate split classes, and that sufficient extra teachers are available;
• that computers can be purchased and operated as necessary;
• that appropriate instructors can be found for in-service training, and that teachers can be released to attend the courses;
• that well-qualified authors are available to prepare new textbooks, and that facilities can be found to print and distribute the books.

It is decided in this case that all options are feasible, so none is discarded.

Step 3: Calculate the costs of each strategy

• the first method would have a high cost. Some schools would require extra new classrooms, and the authorities would have to employ more teachers. The cost is estimated at $200 per student;
• the second method would require special rooms, computers and some special materials, and would cost $100 per student;
• the third method requires teacher-trainers, facilities for training, and travelling expenses for the teachers. It would cost $60 per pupil;
• the fourth method would require specialist authors and printing and distribution facilities. However, unit costs would be much lower. At $30 per pupil, this method is the cheapest.

Step 4: Estimate the effectiveness of each strategy

The effectiveness of each strategy can be determined by comparing the test scores of students who will gain help with those of similar students who will receive no help. On the basis of research studies and their own experience, the authorities estimate that:

• the first method is expected to improve each pupil’s score by eight points;
• the second method is expected to improve each pupil’s score by 20 points;
• the third method is expected to improve each pupil’s score by six points;
• the fourth method is expected to improve each pupil’s score by five points.

*Step 5: Combine the information in a table*

This has been done as shown in *Table 2.1*.

**Table 2.1 Cost-effectiveness of alternative ways to increase student achievement**

<table>
<thead>
<tr>
<th></th>
<th>Cost per student (a)</th>
<th>Effectiveness (test score) (b)</th>
<th>Cost-effectiveness (a) ÷ (b)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Split classes</td>
<td>$200</td>
<td>8 points</td>
<td>$25 per point</td>
</tr>
<tr>
<td>Computers</td>
<td>$100</td>
<td>20 points</td>
<td>$5 per point</td>
</tr>
<tr>
<td>Teacher training</td>
<td>$60</td>
<td>6 points</td>
<td>$10 per point</td>
</tr>
<tr>
<td>Textbooks</td>
<td>$30</td>
<td>5 points</td>
<td>$6 per point</td>
</tr>
</tbody>
</table>

*Step 6: Analyze the results*

From the table, two main points emerge.

• In this example, computers are the most cost-effective innovation. It is estimated that they will cost only $5 to increase a pupil’s score by one point, compared with $6 for textbooks, $10 for teacher training, and $25 for split classes.

• The most cost-effective strategy is not the cheapest. Textbooks would have been the cheapest, but they were only expected to raise achievement by five points per pupil, compared with 20 points for computers. As it happens, the most expensive strategy (split classes) was also the least cost-effective.

However, before proceeding further, policy-makers would have to check several points:

• Although the third column of the table appears to indicate the number of dollars required for a one-point improvement in test score, it assumes that monetary investment and educational improvement are proportional. In practice, policy-makers might be faced by an ‘all or nothing’ situation. Thus, logistic
factors might require them to invest a full $100 per student in computers, thereby gaining a 20 point increase in effectiveness. The computers could not be broken into pieces in order to invest only $5 per student and gain a single point increase.

- In turn this implies that the authorities would need to consider the amount of money that they have available. Sometimes the budget is restricted, and expensive strategies cannot be adopted even if they are highly cost-effective.

- The example assumes that only a small group of pupils is involved. If the policy-makers wanted more widespread change, they would have to decide whether the most cost-effective option would always have the same impact, or whether the impact would diminish with scale. On the question of feasibility, the policy-makers would also have to check resource availability for large-scale implementation. If they foresaw diminishing returns and/or feasibility constraints, they might decide on a different option or on a combination of strategies.

- Most important of all, the policy-makers would have to check both that their original estimates of cost and effectiveness were reasonably accurate, and that the future would not bring major changes. A change in costs, for example, could radically change the conclusions about the most desirable investment strategy.

**Box 4. Cost-effectiveness and cheapness**

Cost-effectiveness is not necessarily the same as cheapness: some strategies may be cheap but ineffective. Sometimes it is worth investing more money on a project, choosing a higher-cost strategy because it also has higher effectiveness.

3. **Cost-utility analysis: a simple example**

Further complications arise when policy-makers have to consider subjective judgements on the value of outcomes. The example given above was fairly simple because it restricted analysis to a single objective: achievement scores in mathematics. However, in reality the policy-makers might have the choice, e.g. of investing in (i) mathematics instruction, (ii) reading, or (iii) a combination of mathematics and reading. In this case they would have to decide
For this type of decision, policy-makers would have to use cost-utility analysis. At least in theory, it is possible to conduct surveys to determine the utility (value) that different people place on different things. Researchers can introduce weightings if they consider the opinions of some people to be more important than the opinions of others. The researchers can then determine an ‘average utility’ for the item in question. Table 2.2 shows an example of the ways that utility and cost could be combined.

### Table 2.2 A hypothetical illustration of cost-utility analysis

<table>
<thead>
<tr>
<th>Instructional strategy</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Probability of raising mathematics performance by grade-level equivalent</td>
<td>.5</td>
<td>.3</td>
</tr>
<tr>
<td>Probability of raising reading performance by grade-level equivalent</td>
<td>.5</td>
<td>.8</td>
</tr>
<tr>
<td>Utility of raising mathematics performance by grade-level equivalent</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Utility of raising reading performance by grade-level equivalent</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Expected utility [ (.5)(6) + <a href="9">.5</a> ] = 7.5 [ (.3)(6) + <a href="9">.8</a> ] = 9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cost</td>
<td>$375</td>
<td>$400</td>
</tr>
</tbody>
</table>

In reality, of course, it is very difficult to make such calculations. They require a lot of data and expertise, and rest on many controversial assumptions. Sometimes, moreover, the surveys would be so expensive that the authorities would have no money left for the innovation. In practice, therefore, it is very rare for policy-makers to make precise mathematical calculations as envisaged by the theory.

Nevertheless, the basic concept remains very important. For the present context it stresses that some educational outcomes may be valued by society more highly than others, and that policy-making should take this into account. Even if they cannot draw up numerical

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*Double-shift schooling*
equations, policy-makers can at least list the various factors and make a general assessment of their implications and importance.

4. Cost analysis and multiple-shift schooling

It is now necessary to turn from general principles to the specific context of multiple-shift schooling. This section considers first cost-effectiveness analysis and then cost-utility analysis.

If restricting the focus to cost-effectiveness, policy-makers concerned with multiple-shift schooling would begin with identifying an objective. Suppose, for example, that the authorities want to increase school enrolments. The options might include:

- expanding existing schools by opening more classes at each level;
- expanding existing schools by increasing class size;
- expanding existing schools by introducing double shifts;
- building new schools.

The authorities would assess the feasibility, costs and effectiveness of each option, and would draw up policies to stress either a single strategy or a combination of strategies.

Alternatively, policy-makers might have already decided that they wish to introduce multiple shifts, but might be uncertain as to which model would be most appropriate. In this case they would perform the same type of analysis to compare:

- end-on double-session schooling;
- end-on triple-session schooling;
- overlapping double-session schooling;
- overlapping triple-session schooling, etc.

By itself, however, this type of analysis would probably be inadequate. In practice, decision-making often requires choice between different ‘baskets’ of outcomes. Thus, one strategy might have a good impact on enrolments but a bad impact on quality and on equity, while another strategy might have a less impressive impact on enrolments but cause fewer problems of quality and equity. In this case, decision-making would require some form of
cost-utility analysis, assessing the importance of each outcome in a multi-dimensional way.

This, of course, is easier said than done. As noted above, policy-makers in the real world are short of information, time and technical expertise. It is unrealistic even in advanced countries to expect this type of sophisticated analysis, except in very unusual circumstances.

However, even in poor countries policy-makers can still apply the principles of cost-effectiveness and cost-utility analysis in a general way. The most important point is that policies should be based on balanced and systematic assessment of:

- costs;
- effects;
- utilities.

Policy-makers can start by listing the factors in each category, quantifying them where possible, and noting which ones are of particular importance. In the absence of full mathematical guides and research evidence, the final decision will rest on the judgement of the decision makers. At least, however, one should aim for such careful judgement, to reduce the arbitrariness of much existing policy-making. The economic, educational and social ingredients for decision-making on multiple-shift schooling are discussed in Part II of this book.
Part II
Determining policies
Chapter 3. Economic factors

Double-shift systems can help achieve important economic goals. They usually reduce the unit costs of education, and can release both pupils and teachers for productive work elsewhere in the economy. The first part of this chapter comments on the nature and extent of these economic benefits.

However, double-shift systems may also have economic costs. They may require parents to employ people to look after children who would otherwise be in school, they may demand the extra services of tutors, and they may contribute to social problems that have economic consequences. These costs are discussed in the second part of the chapter. Policy-makers must have an overall perspective which includes allowance of all sides.

1. The economic benefits of double-shift systems

   **Buildings and other facilities**

   Double-shift systems permit major savings in land, buildings, equipment, libraries and other facilities. A double-shift system allows two groups of pupils to use one set of facilities; and a triple-shift system allows three groups of pupils to use one set of facilities.

   The apparent savings from multiple-shift systems may be dramatic. *Box 5* gives an example from Zambia in which extensive use of double and triple sessions enabled cost estimates to be reduced by 46 per cent. This design envisaged maximum efficiency by treating grades 1-4 and grades 5-7 separately. Grades 1-4 only had three and a half hours of classroom instruction each day, so if necessary could operate in triple sessions. Grades 5-7 had five hours of classroom instruction each day, so were better retained in double sessions.
Box 5. Expansion of education in Zambia – alternative cost projections

The Government of Zambia has long been keen to achieve universal primary education, but has always been acutely conscious of resource constraints. In order to find alternative ways to reach the goal, during the 1980s a specially-appointed team considered use of multiple shifts. It was obvious to the team that the nation could not afford single-session schools throughout the country, and the strategy was not even considered. Instead, recommendations focused on three main options, set out below. The capital costs of Option III (expressed in millions of kwacha) were nearly half those of Option I.

<table>
<thead>
<tr>
<th>Option</th>
<th>Number of classrooms</th>
<th>Cost of classrooms (k million)</th>
<th>Toilets and offices (k million)</th>
<th>Total cost (k million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option I:</td>
<td>13,400</td>
<td>335</td>
<td>73</td>
<td>408</td>
</tr>
<tr>
<td>Grades 1-4:</td>
<td>double session, rural</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grades 5-7:</td>
<td>single session, rural</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grades 1-4:</td>
<td>triple session, urban</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grades 5-7:</td>
<td>double session, urban</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Option II:</td>
<td>10,600</td>
<td>264</td>
<td>44</td>
<td>308</td>
</tr>
<tr>
<td>Grades 1-4:</td>
<td>double session, rural</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grades 5-7:</td>
<td>double session, urban</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Option III:</td>
<td>8,100</td>
<td>202</td>
<td>19</td>
<td>221</td>
</tr>
<tr>
<td>Grades 1-4:</td>
<td>double session, rural</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grades 5-7:</td>
<td>double session, urban</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Kelly, 1986: 212.
Double-shift schooling

In Zambia, arrangements based on this framework were implemented as long-term measures. The government faces ongoing growth of population, and envisions continued pressure on the education budget. In other contexts, multiple-shift schooling may also help cope with fluctuations in population and/or financial resources.

Such fluctuations, of course, are not a feature only of poor countries. Referring to the USA, even some decades ago one researcher noted that:

In areas of rapid growth, where new subdivisions and other housing are developed and sold, where the area is desirable and becomes stable, the number of school age children reaches a peak in a few years after the area is filled. This peak school age population continues for a number of years, even up to 20 years, but eventually it begins to drop. This drop is not as rapid as the original increase, but can eventually represent up to a 50 per cent decrease from the peak population.

School districts have tended to meet this increasing number of school age children by constructing school buildings in a sufficient number and size to accommodate the peak enrolments. As a result, long before the buildings are worn out school enrolments drop to a point where some of the schools are no longer needed. (Merrell, 1980: 2)

The writer recommended education authorities to investigate double-session schooling and other strategies to avoid this problem. As he pointed out (p. 2), “overbuilding to meet peak enrolments becomes an expensive course”. Similarly, a report on New York City in the USA noted that “more intensive use of a smaller number of buildings would provide the framework for an affordable, comprehensive capital strategy for New York City school facilities” (Citizens Budget Commission, 1996: 16), and considered both an extended year and double shifts.

However, introduction of double sessions does not always reduce costs by exactly half. This is for five reasons:

- Extra use of facilities increases wear and tear. This creates higher maintenance costs, and in many cases requires earlier replacement or reconstruction of facilities.
• Schools moving to double-shift operation commonly need extra cupboards, storerooms and offices. They may also have extra study rooms or other facilities for the afternoon pupils who come early and for the morning pupils who stay late.

• Some governments in tropical countries have special architectural designs for double-shift schools. Their classrooms are specially designed to withstand the afternoon heat, and are more expensive.

• Double-shift schools may have to be cleaned very early in the morning or very late at night. In some societies, cleaners have to be paid extra when they have to work during ‘unsocial’ hours.

• The fact that a system has two shifts does not always imply that it has twice the number of pupils as a single-shift system. Because the afternoon shift is usually considered less desirable than the morning one, administrators often fill up the morning shift first and only then put the ‘overflow’ in the afternoon shift. Introduction of double shifts only reduces costs by the proportion in the second shift.

Box 6. Potential economic savings – a missed opportunity

Double-shift schools can reduce costs by sharing equipment and other items as well as buildings, and by making joint orders for supplies. Yet some schools fail to use this opportunity. Commenting from Nigeria, for example, one practitioner pointed out in a personal interview that each shift:

has its own equipment carefully locked up in its own cupboard after school. The morning session head teacher and his staff have no access to the materials and documents of the afternoon session staff. Two sets of circulars are sent to each school, and even though the head teachers occupy the same offices they have different files.

The problem is especially common when separate shifts have separate head teachers, independently accountable to headquarters. Obstacles to sharing are reduced when schools have single head teachers for both sessions. But a more imaginative approach by the authorities could encourage sharing even within schools which have separate head teachers for each session.
Taking these factors into account in Jamaica, one study calculated that double-shift schooling permitted only a 32 per cent saving in buildings and facilities (Leo-Rhynie, 1981). The savings were substantial, but they were not as high as many people had initially assumed they would be.

**Salaries**

**Teachers**

The extent of savings on teachers’ salaries depends on the nature of the shift system. In Hong Kong, for example, teachers are forbidden to work in both sessions. In this system, each shift requires a full set of teachers, and the government achieves no saving in teachers’ salaries.

In other systems, teachers are permitted and encouraged to work in both sessions. If teachers are paid double salary for double work, then there is no saving in salaries. However, the system does reduce the total number of teachers, which in turn reduces (i) expenditure on teachers’ houses (where employing agencies are required to provide teachers’ accommodation), and (ii) expenditure on teacher training.

Alternatively, teachers may receive extra pay for extra work, but at a lower rate. When the Government of Uganda introduced a double-shift scheme in 1998, it offered teachers a 40 per cent increase in salary for the second shift (Kleinhans, 2004: 14). This was subsequently reduced to “25% of a grade III teacher’s basic salary” (Kleinhans, 2004: 44). Similarly in Senegal teachers who worked in both shifts in the system designed in the 1980s were paid an additional 25 per cent of their base salaries (Colclough with Lewin, 1993: 131). Their work was not double that of their counterparts in single-shift schools, since double-shift schools provided only 20 hours of classroom teaching each week instead of 28 (though the school year was extended by ten days). However, the increase in salary was a smaller proportion than the increase in work, so represented a saving for the government.

In the Zambian system described above, this type of arrangement was made even more sophisticated through separate treatment of junior and senior classes. Grades 1-4 only had three and a half hours of lesson time each day, while the normal working day lasted for
eight hours. In theory, therefore, a teacher could be expected to teach two sessions each day. However, the policy advisers realized that:

> a teacher who was so intensively occupied with actual classroom teaching would not have much time for the preparation of work, especially in situations where the shortage of formal teaching materials might necessitate much time for improvisation and seeking for alternatives. (Kelly, 1986: 202)

The advisers therefore recommended limiting the teacher’s classroom work to about six hours a day in order to allow time for lesson preparation. This meant that two teachers would be sufficient for three sessions. Even if the teachers were paid higher salaries in recognition of the extra work, it was pointed out, “the extra payments would fall far short of the salary for an additional teacher who might otherwise be required”.

At the same time, the architects of the Zambian system recognized that differences in the workload for grades 5-7 teachers required alternative arrangements:

> At the grade 5-7 level there is a greater need for a teacher to have time to correct pupils’ written work in addition to the time required for preparing class materials. Hence it would not seem advisable to have a regular class teacher at this level heavily engaged during a second session on the same day, though if contact hours for each session are reduced to five [from five hours and 20 minutes in single sessions] he could make some contribution to the second session. A subject-teacher, on the other hand, could teach in both sessions within a regular quota of contact hours. (Kelly, 1986: 202)

This analysis highlights the value of flexible policies which recognize that the workloads of different types of teacher may vary.

**Clerks and ancillary staff**

Although double-shift schools in Singapore and Puerto Rico have had two teams of teachers, they have had only one team of clerks, cleaners, labourers and messengers. This arrangement allows the authorities to make salary savings. Governments of other
Double-shift schooling

countries also make savings in the salaries of night-watchmen, for the use of double shifts means that they have fewer school compounds.

Use of a single team of ancillary staff to serve a double-session school does of course require careful management. Working hours are usually staggered to ensure that someone is on the compound at all hours of the school day. In Namibia, the schedule for the secretaries of Theo Katjimune Primary School reported by Kleinhans (2002: 126) was:

Secretary 1: 7.00 a.m. to 3.00 p.m.
Secretary 2: 8.00 a.m. to 4.00 p.m.

**Time and labour**

When a double-shift system has a shorter day than a single-shift system, it saves the time and labour of teachers and pupils.

- If *teachers* work only in one shift, they are free for other economic activities, for study, or for domestic activities.
- *Pupils* are also released for longer periods of the day. This is especially important in societies where school children earn a living outside school hours. The fact that pupils can both go to school and earn a living may allow poor children to attend school. This reduces social inequalities and raises the overall educational level of the society.

**Box 7. Double-shift schooling and child labour**

In many poor countries children play a crucial economic role, trading and caring for children younger than themselves. It is not unusual to even find morning-shift teachers immediately going to their businesses or homes when classes finish, to release young people for the afternoon shift at school.

In the absence of the shift system, either the teachers would be prevented from teaching because they could not leave the businesses or families; or the children would not be able to attend school at all. The shift system can allow everybody to get the best of both worlds.

Release of pupils may also generate an alternative economic benefit. In many societies, older children are needed to look after their younger brothers and sisters while their parents go to work.
Pupils in double-shift schools may have more time each day to help their families in this way.

Double-shift schooling can release young people for productive work in the economy. They may attend school in the morning and then work in the afternoon (or vice versa).

2. The economic costs of double-shift systems

In some systems, the benefits noted in the previous section must be set against certain economic costs before a final balance sheet can be produced. Three costs are worth particular mention.

**Child-minding agencies**

In addition to their educational function, schools serve a child-minding function. They keep children occupied during the day, and this allows their parents to get on with their own work. Half-day schools do not occupy children so long as full-day schools. In some societies this requires parents to send their children either to relatives or to special child-minding agencies and playgroups.
Double-shift schooling

Box 8. Double-shift schooling and the extra costs of child-minding

Double-shift systems can create problems for working parents. Children either start and finish school early, or start and finish school late. School hours do not match working hours, and children cannot spend extra time in school because facilities are constantly in use by other shifts.

Some working parents solve this problem by asking grandparents or other relatives to look after their children, but others have to employ child-minding agencies. In the latter case, shift schooling saves money for the government but increases costs for the parents. The savings for society as a whole are less than they appear at first sight.

Tutors

When a double-shift system seriously reduces the length of a school day, parents often become concerned about the extent to which their children are able to cover the curriculum. Centres of the type mentioned above often have an educational as well as a child-minding function. Parents may find that they need to send their children to such centres or to private tutors just for the educational benefits, even if they do not need the child-minding services. Tutorial classes are particularly expensive when they are run as profit-making enterprises (Bray, 2007).

Particularly problematic are situations in which teachers refuse to teach properly during school hours because they know that they can make extra money by teaching the same pupils after school (see e.g. Bray, 2006: 519; Silova and Kazimzade, 2006: 124). This could happen in a single-session system, but the problem is exacerbated in a double-session system because the teachers argue that there is no time to cover the full curriculum during normal school hours. With reference to Eritrea, Tedla (2003: 105) has reported that some teachers who provide extra tutoring “give more attention to the tutorial classes because they earn extra money from the participants”. This type of situation obviously requires careful monitoring. One safeguard, used for example in Singapore and the Republic of Korea, is to prohibit teachers from organizing paid tutorials for their own school pupils.
Social welfare costs

It was mentioned above that double-shift systems can release young people for productive employment. However, in some societies it is very hard for such youths to find jobs. Instead of finding work, they join gangs and exacerbate social problems. Although the government may save money through a double-shift system, it may have to spend money to deal with social problems. It is usually difficult to make precise estimates of the extra expenditure required, but the question should not be ignored.

3. Summary

Double-shift systems can provide major economic benefits. They are:

- more efficient use of buildings and other facilities;
- more efficient use of scarce teachers (if staff are allowed to teach in more than one session);
- savings in teacher training and teacher housing (if the shift system allows reduction in the total number of teachers);
- release of teachers for other work in the economy (if the system reduces the number of classroom hours in each shift and if the teachers decide to take on other work);
- release of pupils for productive work in the economy.

These benefits must be set against some potential costs before the final balance can be assessed. The chief costs are:

- the need for working parents to employ child-minding agencies;
- the potential need for extra tutoring to compensate for reduced classroom time;
- the costs for social welfare if out-of-school youth create extra social problems because they have more idle time.

Even after allowance for these costs, however, in most cases the final balance sheet is likely to be positive.
Chapter 4. Educational factors

The economic benefits discussed in the previous chapter must be balanced against various educational costs. This chapter has four main parts. It focuses in turn on the general atmosphere of double-shift schools, on cognitive achievement, on curriculum duration and content, and on extra-curricular activities.

1. The general atmosphere of double-shift schools

Most educators agree that the atmosphere of double-shift schools is inferior to that of single-shift schools. In double-shift systems, they point out:

- The school day is more pressurized. Everybody always seems to be in a hurry. Breaks are shortened, and teaching time may be reduced.
- Pupils and staff of different shifts do not easily identify with each other. In a double-shift system they feel like two schools, not one. This is especially the case when each shift has a separate head teacher.
- When morning classes begin very early, children sometimes miss their breakfast. They later become hungry and find it difficult to concentrate on lessons.
- Especially in hot climates, children find it difficult to study in the afternoons because they are tired. Teachers are also tired in the afternoons, particularly if they have already taught full morning sessions.
- Teachers who work in more than one session may have less time to prepare classes and to correct assignments.
- The large student population makes it difficult for the staff to know all students personally, and can exacerbate discipline problems. Pupils may stay on the school compound but evade classes, pretending that they are members of the out-of-lessons shift.
- If afternoon-shift pupils come to school early, they may be noisy and may disturb the lessons of the morning-shift pupils. Similar problems arise if the morning-shift pupils stay late instead of going home as soon as their classes are finished.
Determining policies

- On the other hand, if afternoon-shift pupils are prohibited from arriving until it is time for their lessons, and if all the morning-shift children leave school as soon as classes are over, then the transition period may be chaotic. The sudden emptying and refilling of the school reduces the children’s and teachers’ sense of belonging. It makes the school seem like a ‘teaching machine’ or factory.

- Teachers cannot use classroom wall space so freely. The morning-shift pupils may tamper with the wall pictures of the afternoon-shift pupils, and vice versa. Likewise, teachers cannot leave work on the blackboard overnight. Pupils and teachers have less sense of ownership of their classrooms.

The following sections of this chapter show that these problems do not necessarily have a disastrous impact on pupils’ learning. However, policy-makers should at least be aware of the reasons why double-shift schooling is so widely disliked.

Afternoons may be particularly problematic in double-shift schools. Both teachers and pupils are tired.
Double-shift schooling

Box 9. Contrastingle-double-session and single-session schools – observations from Singapore

Singapore has had a long tradition of double-session schooling, though phased out the system in the 1990s. Two major problems in double-session schools were:

- It was difficult to arrange either remedial or enrichment classes, because classrooms were often not available outside the hours for each session.
- Most double-session schools operated as two separate institutions in the same compound. Rarely did all staff and pupils come together at the same time, and it was difficult to build cohesive and distinctive school communities.

Single-session schools, in contrast, were planned and co-ordinated more effectively. Relationships between teachers and pupils were also better because people stayed back more often for formal and informal activities. A greater sense of belonging made school life more enriching and enjoyable.

These observations match the experience of educators in other countries. By themselves they do not necessarily imply that double-session schools should be abolished, for the educational costs might be outweighed by the economic and other benefits. However, they do highlight some important contrasts between double-session and single-session schooling.

2. Double-shift schooling and cognitive achievement

The observations about the general atmosphere of double-shift schools would at first sight seem very serious. However, in practice this is not always so.

Reliable research evidence which compares cognitive achievement in different types of system is difficult to find. One reason is that individual schools cannot easily be compared. In countries with more than one type of system, single-session schools are commonly:

- remote schools with populations too low to justify more than one shift;
Determining policies

- unpopular schools which would have double sessions if there was enough demand but do not actually have enough pupils;
- elite schools which have lots of money so are not anxious to minimize unit costs.

In contrast, double-session schools are usually urban, are reasonably popular, and serve poor or middle-income families. When academic achievement between schools varies, it is often because of these other factors rather than because of the number of shifts. As such, caution should be expressed about studies based on simple correlations between double-shifting and achievement (see Michaelowa, 2003) if they do not investigate background factors.

Nevertheless, some research findings are worth summarizing.

1. Brazil: Fuller et al. (1999) studied determinants of literacy in urban and rural primary schools in Northeast Brazil. They tested grades 1 and 2 children in 140 schools in two provinces. Most of the urban schools operated either two or three shifts. The researchers found “no evidence that multiple shifts in schools are negatively associated with early literacy levels” (p. 33). They noted that if multiple shifts lead to serious denigration of facilities, then parental support for schools may decline; but, they added, “if schools are reasonably maintained, it does not appear that multiple shifts yield negative achievement effects” (p. 33).

The schools that operated three shifts had one of the shifts in the night. According to Herrán and Rodríguez (2000: 6), around 60 per cent of students in grades 9 to 11 are enrolled in night shifts. This is partly because repetition in the school system is common, and many students are older than they would have been in a system of automatic promotion through the grades. The night shifts are popular because they allow the students to work in the day time (see also Barolli, da Silva Dias and Almeida de Souza, 2003). Using a large database, Herrán and Rodríguez compared the academic achievement of students in day and night shifts. They found that:

“the fact of attending day or night classes does not appear to have a significant effect on achievement. The overall differences in achievement between day and night school students appear to
be largely due to differences in student socio-economic status, attendance patterns, and the characteristics of the schools they attend, rather than any inherent handicap associated with the night shift *per se* (i.e. students are less able to focus because they are tired). Holding all variables except day/night shift constant (e.g. socio-economic status, teacher experience, educational inputs, etc.), night school students perform no differently than day school counterparts.” (p. 39)

2. **Chile**: Many schools have long traditions of double sessions, and some have had triple sessions. In an early study, Farrell and Schiefelbein surveyed 353 grade 8 classes, collecting data from ten students in each class and from all teachers and school directors. They concluded that “there is almost no association between level of academic performance and the number of shifts in which a school is utilized daily” (1974: 28). Nevertheless, over the years the government converted the triple-shift schools into double-shift ones, and in 1997 it made a further push towards full-day schooling in order to give students 30 per cent more learning time in schools. However, inadequate attention was given to ways in which the time would be used, and at least the initial results of the reform were disappointing. Valenzuela (2005) compared gains in grade 4 test scores between 1999 and 2005 in converted and unconverted schools. For learning of Spanish he found gains of 0.5 to 0.7 standard deviations in private subsidized schools, but only 0.2 standard deviations in public schools. In mathematics the effects were only 0.3 standard deviations in subsidized private schools, and close to zero in public schools. A related study by García Marín (2006) found slightly higher gains in Spanish in both public and private subsidized schools, and in mathematics in private subsidized schools. However, García Marín remarked (pp.15-16) that these gains were very modest compared with the scale of investment, and, like Valenzuela, he found no gains at all in mathematics in public schools.

3. **Guinea**: PASEC (2003) investigated the learning achievements of 1,248 grade 2 pupils and 1,260 grade 5 pupils. In each grade, approximately half were in single-shift schools and the other half in double-shift schools. The researchers found (p. 68) that in grade 2 “the mean scores are very close and the observed
difference is not statistically significant”. In grade 5, however, the single-shift pupils performed better and the difference was statistically significant. The researchers concluded that “the double-shifts, despite the moderate effects in a single school year, penalize rather sensitively the learning of pupils over the long term” (p. 71). At the same time, the researchers noted that “it is always preferable that a child receive double-shift schooling rather than none at all”, and recognized that financial constraints would not in the immediate future permit significant reduction of double-shift schooling.

4. **India**: Batra (1998) compared scores of grade 4 students in 23 schools in Assam and Madhya Pradesh. In Assam, double-shift students scored marginally better than single-shift students in mathematics, but not so well in other subjects. In Madhya Pradesh, double-shift students scored marginally higher in science and social science, but not so well in language or mathematics. Overall, Batra concluded, “it appears that the double shift schools are not necessarily achieving any better educational results or performing any worse than the students of single shift schools” (p.104).

5. **Niger**: Malam Maman (2002: 126-172) compared achievement of pupils in single-shift and double-shift schools in Niamey, in order to assess the impact of a double-shift schooling policy introduced in 1988. He found that in grade 3, single-shift pupils performed better than double-shift pupils in mathematics and French, even after controlling for socio-demographic variables. In grade 5 the single-shift pupils performed better in French, albeit by a smaller margin. However, the mathematics tests in grade 5 did not show significant differences between the groups even before allowance for socio-demographic variables, and after such allowance performance was slightly better in the double-shift cohorts. Malam Maman (2002: 165) also highlighted strategies that the authorities could use to raise the achievement of double-shift pupils.

6. **Senegal**: In 1982 the Ministry of Education launched a pilot double-shift system at the primary level. It was subsequently expanded, and 14 per cent of primary students in 1988 were in double-shift schools. The scheme permitted substantial reduction in class sizes, and an evaluation found “no noticeable drop in
quality for students in the double-shift classes: tests covering attainments in maths and French suggested that students in double-shift classes performed as well as those in single-shift classes” (Colclough with Lewin, 1993: 131-132).

These findings are not entirely consistent. Thus, some studies suggest that the academic achievement of children in double-shift systems is often just as high as that of children in single-shift systems, while others suggest that double-shifts reduce learning. Nevertheless, if as in Guinea the conversion of double-shift schools to single-shift ones would push some children out of the school system altogether, the total learning by the student population would probably decline. The students who were in school might learn more, but those who were not in school would learn less and the total learning by the age group would probably diminish.

Also worth noting are two further points in favour of double shifts from an educational viewpoint:

• introduction of double shifts may permit reduction in class size and therefore a more personalized teaching approach;
• double-shift schools are generally larger, and therefore it can be easier to justify expenditure on libraries, laboratories, etc.

Indeed if these two factors weigh heavily enough, introduction of double shifts can actually improve quality. Once again, however, planners need to assess overall balances with care.

3. Curriculum duration and content

The duration of teaching time in double-shift systems has already been mentioned, but deserves further attention. The content of curricula also requires discussion.

Table 4.1 shows official data on primary school teaching-time in 15 countries. In six countries listed, no reduction was made. However, in eight countries teaching time was shortened to accommodate extra shifts. Particularly dramatic is the pattern in Bangladesh, where double shifts were introduced during the 1990s as the government “moved aggressively to achieve its ‘education for all’ goals” (Tietjen, Rahman and Spaulding, 2004: 45). Following the reform, about 90 per cent of government primary schools moved
to double-shift with only 22 hours and 30 minutes’ instructional time per week compared to 38 hours and 25 minutes per week in the single-shift schools, most of which are located in urban areas and presumably cater for higher socio-economic groups.

### Table 4.1  Official weekly classroom instruction time (primary schools)

<table>
<thead>
<tr>
<th>Country</th>
<th>Grade</th>
<th>Single session</th>
<th>Double session</th>
<th>Triple session</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh</td>
<td>(junior)</td>
<td>38h 25m</td>
<td>22h 30m</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>(senior)</td>
<td>23h 30m</td>
<td>16h 30m</td>
<td>–</td>
</tr>
<tr>
<td>Burkina Faso</td>
<td></td>
<td>30h 00m</td>
<td>21h 00m</td>
<td>–</td>
</tr>
<tr>
<td>Eritrea</td>
<td>(junior)</td>
<td>20h 00m</td>
<td>20h 00m</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>(senior)</td>
<td>23h 20m</td>
<td>23h 20m</td>
<td>–</td>
</tr>
<tr>
<td>The Gambia</td>
<td></td>
<td>26h 00m</td>
<td>23h 45m</td>
<td>–</td>
</tr>
<tr>
<td>Ghana</td>
<td></td>
<td>22h 55m</td>
<td>19h 35m</td>
<td>–</td>
</tr>
<tr>
<td>Hong Kong</td>
<td></td>
<td>23h 20m</td>
<td>22h 10m</td>
<td>–</td>
</tr>
<tr>
<td>Jamaica</td>
<td></td>
<td>25h 00m</td>
<td>22h 30m</td>
<td>–</td>
</tr>
<tr>
<td>Laos</td>
<td>(junior)</td>
<td>19h 00m</td>
<td>19h 00m</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>(senior)</td>
<td>22h 00m</td>
<td>22h 00m</td>
<td>–</td>
</tr>
<tr>
<td>Myanmar</td>
<td></td>
<td>25h 00m</td>
<td>25h 00m</td>
<td>–</td>
</tr>
<tr>
<td>Nigeria, Imo State</td>
<td></td>
<td>22h 05m</td>
<td>22h 05m</td>
<td>–</td>
</tr>
<tr>
<td>Philippines</td>
<td>(junior)</td>
<td>25h 00m</td>
<td>23h 20m</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>(senior)</td>
<td>30h 00m</td>
<td>24h 10m</td>
<td>–</td>
</tr>
<tr>
<td>Senegal</td>
<td></td>
<td>28h 00m</td>
<td>20h 00m*</td>
<td>–</td>
</tr>
<tr>
<td>Singapore</td>
<td>(junior)</td>
<td>22h 30m</td>
<td>22h 30m</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>(senior)</td>
<td>24h 30m</td>
<td>24h 30m</td>
<td>–</td>
</tr>
<tr>
<td>Zambia</td>
<td>(junior)</td>
<td>20h 25m</td>
<td>20h 25m</td>
<td>17h 30m</td>
</tr>
<tr>
<td></td>
<td>(senior)</td>
<td>26h 40m</td>
<td>26h 40m</td>
<td>–</td>
</tr>
</tbody>
</table>

* But with a school year extended by ten days.

**Note:** These are officially recommended periods of teaching as reported at various points in time. Many governments permit institutions to make some variation. Also, periodic reforms may change the official numbers of hours.

Similar analysis of the secondary level would probably reveal a larger proportion of systems which have fewer hours in double-shift compared with single-shift systems. Most secondary school systems require six to seven hours of teaching per day, and it is much more difficult to operate double shifts without cutting this length of time.
In Mozambique, where many secondary schools have triple shifts, daytime shifts have only six lessons of 45 minutes each while the night shifts have only five lessons of 45 minutes each (World Bank, 2007: 14). Nevertheless, the fact that at least at primary level some systems have not reduced the hours at official hours of teaching important.

Another feature reflected in Table 4.1, applicable to both primary and secondary levels, concerns the duration of official classroom teaching time, of which the table shows wide variation. For example, according to the table, Ghanaian single-session primary classes all have 22 hours and 55 minutes of classroom instruction per week. This contrasts with Burkina Faso, where single-session schools have 30 hours. Information on the number of weeks of term time each year might show that the variations are smaller than the table implies, but it is unlikely that differences would be cancelled altogether.

A further point emerging from the table is that even the shortened double-shift allocation is longer in some countries than the full single-shift allocation of other countries. For instance, the 24 hours 10 minutes of the Philippines’ double-shift senior primary schools is longer than the full single shifts of Ghana, Hong Kong, Laos and Nigeria. This implies that when classroom time is reduced because of the introduction of a shift system, the impact may not be disastrous. Much depends on the length of curriculum time before the change. Even more pertinent is what efforts are made to maximize the duration of teaching, e.g. by adding classes on Saturday for double-shift schools, as in Hong Kong.

Turning to the actual content of the curriculum, it should first be noted that the research studies cited above tend to be biased. When teaching time is shortened, the first casualties are usually such subjects as music, handicraft, moral guidance and religion. The bulk of research work uses narrow criteria for academic achievement, often focusing only on language, mathematics and science. When the curriculum is shortened following the introduction of a shift system, these may be the subjects that are retained, and so one should expect achievement in them to remain high. The real curriculum losses of double-shift systems may be in the other areas.
Secondly, it is obvious that good teachers who are well supported with curriculum resources and materials can achieve a great deal more in a short time than bad teachers with few materials can achieve in twice the time. This point stresses the need for authorities to note ways to maintain or improve quality, highlighted in Chapter 8 of this booklet.

Allied to this point, time on task may be a more important indicator than official time allocations. Abadzi (2007) has highlighted multiple ways in which time is used unproductively in many school systems (see also Dia, 2003; Benavot and Gad, 2004). The research in Chile cited above indicated that teachers in schools which were converted from a half-day to a full-day system did not always use the extra time productively. Similarly, the research in Brazil by Herrán and Rodríguez (2000: 39) noted that schools in different shifts had comparable academic outcomes despite differences in official allocations of time. They observed that increasing time-on-task within the classroom appears to increase learning achievement, but “merely increasing the hours of schooling does not necessarily have the same effect”. Thus, pupils in half-day schools who make good use of their time may learn much more than their counterparts in full-day schools who make poor use of their time. Expressed in another way, use of school time in all systems (both single shift and double shift) may be a more productive focus for planners than just the number of shifts.

4. Double-shift schooling and extra-curricular activities

Achievement in classroom subjects is of course not the only goal of school life. Education systems also aim to promote healthy attitudes and physical development. Extra-curricular activities provide one of the main ways to achieve these goals. Through sporting activities, children learn about co-operation and competition as well as how to grow physically strong and healthy. They develop other talents in music, drama, debating, chess and so on.

It is generally said that shift schooling forces authorities to cut back on extra-curricular activities. The school day becomes too tight, and compounds may be too congested to allow simultaneous activity by children of all sessions. Schools with large compounds may find
that they can allow afternoon session pupils to come early to practise gymnastics, to play basketball, to join a school choir, or to rehearse the school play; but schools with small compounds find first that there is simply not enough space, and second that the noise from the ball games and music groups disturbs the children who are studying.

Further difficulties arise in the organization of inter-school sports competitions. When most schools have only single shifts, competitions are commonly held on weekday afternoons. Schools with double shifts then find that:

- all the sports players have to be enrolled in the morning session (thereby creating an imbalance); or
- sports players in afternoon sessions have to miss classes from time to time; or
- sports players in afternoon sessions have to be excluded from inter-school competitions.

However, there may be ways to get round problems of this type. One solution is to hold inter-school competitions on Saturday mornings. An alternative solution is to hold two types of competition: one for single-shift schools, and one for double-shift schools. Chapter 8 of this book highlights similar ways through which other problems may at least be reduced.

Finally, one point raised in connection with academic achievement also applies to extra-curricular activities. Schools with large populations find it easier to justify investment in swimming pools, gymasia, sports fields, etc. In this respect, double-shift schools may actually have an advantage over single-shift schools.

5. Summary

Double-shift schools certainly may suffer educational disadvantages compared with single-shift schools. Teaching time for each shift may be reduced, and the need to compress a lot of activity into a short time may make the school day rather tense. Both children and teachers may be tired, particularly during afternoon shifts in hot countries. This may affect not only academic aspects of school life but also social and extra-curricular activities.
However, some research has indicated that academic achievement in double-shift schools may be just as high as in single-shift schools, and time available for learning does not always correlate well with time actually used for learning. Administrators with imagination may find ways to get round the problems both of shorter school days and of congested school compounds. Much therefore depends on the management of double-shift systems.

**Box 10. Double-shifts and extra-curricular activities**

Among the questions in an evaluation of Jamaica’s system of double-session schooling was whether schools had had to stop extra-curricular activities in order to accommodate the extra shift. The researchers’ findings were:

<table>
<thead>
<tr>
<th></th>
<th>Number of schools investigated</th>
<th>Number of schools which had to stop:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Clubs and societies</td>
<td>Minor games</td>
</tr>
<tr>
<td>Primary</td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>All age</td>
<td>32</td>
<td>9</td>
</tr>
<tr>
<td>Grammar and technical</td>
<td>8</td>
<td>0</td>
</tr>
</tbody>
</table>

Just over a quarter of the all-age schools reported that they had had to stop clubs and societies, and a few all-age schools reported that they had had to stop games. However, no primary, grammar or technical schools had had the same experience.

The research suggests that while double-shift schooling may have severe implications for extra-curricular activities, this is not necessarily the case. Most Jamaican schools had found ways round the constraints imposed by double sessions.

Chapter 5. Social factors

The total balance sheet for policy-makers must take account of social as well as economic and educational factors. This chapter begins by noting the potential impact of double-shift systems on social equity. It then turns to questions of ‘restless out-of-school youth’.

1. Shift systems and social equity

Double-shift systems can greatly contribute to social equity, for they permit governments to increase access to education at a moderate cost. Governments may be faced by a choice between:

- single-shift schooling for some and no schooling for others;
- double-shift schooling for everybody.

The second option is much more equitable. It may require some sacrifice of quality for pupils who would have had places in the first option, but society’s resources are spread to cover more people. Double-shift systems can also help low-income groups in other ways:

- Some families are too poor to allow family members to spend the whole day in school, for they cannot afford to lose the income that children and youths could gain from working. Systems of half-day schooling reduce this problem. They allow young people to attend school and still earn a living.
- Even when young people from poor families do not directly earn money, they are often needed to look after younger children. Double-shift schooling may enable young people to undertake domestic duties in turn: while one is in school, another is out of school, and *vice versa*.
- Poor children are also excluded from school by high fees. Double-shift schooling reduces costs, so can also reduce school fees.
A system of single-session schooling may force authorities to exclude many children from school. A double-session system permits higher enrolments and fewer rejections. From the viewpoint of equity, a triple-session system might be the best of all.
Double-shift schooling

Nevertheless, it is rare for everybody to attend double-shift schools, so the question arising concerns which social groups are in single-shift schools and which are in double-shift ones. Unless policy-makers are careful, double-session schooling reinforces social inequalities. It is important to consider the equity implications of different strategies:

- **Rural versus urban.** Rural schools are often disadvantaged by comparison with urban schools. They have less reliable supplies of books and other materials, they are less likely to have well-qualified teachers, they may have to operate multi-grade classes, and in poor countries they may not have electricity or other amenities.

On the other hand, *Chapter 1* noted that rural schools are less likely to have double-shift systems. A policy which only requires urban schools to have double shifts could help compensate for other inequities in the system.

- **Rich versus poor.** Inequities also exist within urban areas. Rich communities are usually more influential than poor ones, and may protest against their children attending double-shift schools. Double-shift systems reinforce inequalities if they are only found in poor communities. Social justice requires double-shift systems to be operated in rich communities too.

- **Different racial groups.** Under apartheid in colonial Zimbabwe (then called Southern Rhodesia), different education systems served the European, Asian, coloured and black populations. Shortly before independence in 1980, the schools for European, Asian and coloured populations were renamed Group A schools, and those for blacks were renamed Group B schools. The categories were unified after independence, but real racial integration was slow and major funding disparities persisted. Reflecting these disparities, two decades after independence double-shift schooling was much more common in former Group B than in former Group A schools (Nhundu, 2000). Namibia faced a similar problem and double-shift schooling was perceived to perpetuate racial as well as class inequalities (Kleinhans, 2002). It would have been preferable to have had the same system for schools serving all communities.
Determining policies

• **Academically bright versus academically weak.** During the 1980s and 1990s, in Trinidad and Tobago only junior secondary schools (grades 7-9) operated double shifts. Full secondary schools (grades 7-11) had single shifts. Allocation was based on examination results: pupils with good results went to full secondary schools, and the rest went to junior secondary schools (London, 1993).

In such circumstances, it was hardly surprising that society associated double-shift schooling with low academic achievement; and in so far as double shifting imposed constraints on the teachers, junior secondary schools suffered a double handicap. Research has shown that academic performance is not just determined by children’s inborn ability; it is also determined by home support and learning conditions. Thus, while at first sight the system in Trinidad and Tobago only differentiated between bright and dull children, in practice it also differentiated between rich and poor. Full secondary schools drew mainly from high socio-economic groups, while junior secondary schools drew mainly from low socio-economic groups.

If policy-makers had wished to make the system more equitable, they would have reversed the arrangement. The full-day schools would have either operated double shifts or selected only the low academic achievers; and the junior secondary schools would have either operated single shifts or selected only the high academic achievers. However, this policy change would have been political dynamite. It would have challenged the privileges of the rich, and would have caused strong opposition from influential groups. It would probably have been more politically realistic simply to ensure that all schools were either single-shift or double-shift.

• **Desirable versus undesirable sessions.** Inequities may also exist within double-shift schools. Morning sessions are usually considered more desirable than afternoon ones. It might be unfair for some children to benefit from morning sessions for the whole of their school careers while other children stay in afternoon sessions for the whole of their school careers. This problem can be reduced through systems of internal organization discussed in Chapter 6. For example, if a
Double-shift schooling

double-session primary school has grades 1, 3 and 5 in the morning and grades 2, 4 and 6 in the afternoon, then all children alternate between morning and afternoon sessions as they progress through the system. Alternatively, schools might have grades 1-6 in the morning and parallel grades 1-6 in the afternoon, but could then require classes to rotate from time to time.

Teachers in double-session systems also tend to prefer morning sessions. Policy-makers should guard against the danger of good teachers all gravitating to the morning session. This requires deliberate effort to secure even distribution of good staff. A schedule of teacher rotation like the schedule of pupil rotation might help to make the system more equitable.

Box 11. How often should pupils alternate between sessions?

Double-shift systems can be made more equitable if pupils alternate between different sessions. Pupils who begin with morning classes are later asked to attend afternoon classes, and vice versa. The question is then how often the students should alternate. Every month? Every term? Every year?

The question has no fixed answer. Yearly rotation is perhaps the most simple and the least disruptive to family patterns. When classes alternate too often, parents get confused and families find it hard to settle into a routine.

However, some authorities advocate more frequent rotation to promote both equity and variety. Some double-shift schools in Eritrea rotate classes every semester, some schools in Laos rotate classes every month, one report in Ghana has recommended classes to rotate every two weeks, and some classes in The Gambia and Zimbabwe rotate every week.

2. Problems of ‘restless youth’

Chapter 3 pointed out that double-shift systems may reduce the length of a school day, which releases young people for productive work in the economy. In this case, there is an economic benefit. But in some societies school-aged children cannot find work. Either
Determining policies

there is no work, because unemployment is too high, or labour laws prohibit employment of youths under a specified age.

In the latter cases, double-shift systems may contribute to problems of ‘restless youth’ and delinquency. When young people attend school for shorter periods each day, they have more time to hang around in the streets and get bored. Even if the school day is not shorter, pupils in double-session systems are free for the whole morning or the whole afternoon. In contrast to the schedule for single-session pupils, the schedule for double-session pupils does not occupy the central part of the day. This means that they have a longer stretch of time in which to get bored. Problems are increased when double-shift systems reduce contact between teachers and pupils, thereby restricting the effectiveness of school-based guidance and support.

To some extent, the accusation against the school system may be unfair: it expects schools to solve a problem which has nothing to do with education. School authorities could rightly protest against the idea that the function of schools is to keep young people off the streets.

Yet although keeping young people off the streets is not the main function of schools, it is undeniably one role that they play. Policy-makers have to weigh up the costs and benefits of:

• insisting on full-day schooling in order to keep young people occupied for longer periods and for the central part of each day (while also giving the schools sufficient resources and guidance to make the longer school day meaningful);
• retaining half-day schooling and using the resources saved for other social welfare programmes to help the young people;
• simply neglecting the issue, implementing neither of these options.
Box 12. Double shifts and youth indiscipline – contrasting views

The double-shift system in Botswana has been criticized for allowing adolescent students too much free time, since “students are into drugs, alcohol, sex and other unwanted activities” (Hunyepa, 2005: 3). Similar comments may be heard in many other societies, ranging from Jamaica to India.

However, the fact that some young people get into trouble does not imply that they are all delinquents. Many youths use their free time in highly productive ways, engaging in worthwhile hobbies, earning money and helping their families. In Ethiopia, for example, at least some youths who attend double-shift schools are able to cover the costs of schooling by engaging in trade and other economic activities (Fairbank, 2005).

Authorities must therefore assess these contrasting possibilities in the context of their specific circumstances. Planners cannot assume that extra free time is always good. But neither can they assume that it is always bad.
Part III
Making double-shift schools work
Chapter 6. School organization and timetabling

Double-shift schooling requires careful organization in order to operate efficiently and effectively. This chapter comments first on alternative arrangements of classes within double-shift schools. It then turns to details of timetabling.

1. Which classes should be taught in which shifts?

Should junior classes study in the morning or the afternoon? What about the senior classes? Should classes alternate between shifts, or should pupils join one shift and stay in it permanently? These questions are addressed in this section.

**Primary schools**

The range of options for internal organization may be illustrated by reference to a six-grade, double-shift primary school. Six options are considered here.

*Option 1*

Grades 1 to 6 in the morning, and parallel grades 1 to 6 in the afternoon.

Advantages are:

- The morning and afternoon sessions operate like two independent schools. They can have different staffs and even different head teachers.
- Children can stay in either the morning or the afternoon shift for the whole of their school careers. This may make life easier to organize for their families. If they have brothers or sisters in the same shift, everybody can go to school and leave school together.
- Equipment and materials used, e.g. by the grade 1 class in the morning can be used by the parallel grade 1 class in the afternoon.

Disadvantages are:

- Teachers of the same grade cannot co-ordinate easily. The morning teachers of grade 3 may not see the afternoon teachers
of grade 3. This may cause problems when deciding on the furniture for classrooms, purchasing books for class libraries, setting examinations, and so on.

- The morning and afternoon sessions have separate identities. They may not feel like one school.
- The afternoon session is usually less popular than the morning one. It may be difficult to attract good teachers, and the pupils and staff may feel inferior. Parents may exert pressure to get their children transferred from the afternoon to the morning session.
- The system seems unfair. Children who are allocated to the morning session have an advantage, while children allocated to the afternoon suffer a disadvantage.

Option 2

Grades 1, 2 and 3 in the morning, and grades 4, 5 and 6 in the afternoon.

Advantages are:

- During their six years at school, children study in both morning and afternoon sessions. This is a fairer system.
- Teachers of the same grade can easily liaise with each other.
- Children of the same age group have more peers with whom to socialize.
- Pupils in the same grade can all sit examinations together.
- In some systems, senior classes have longer hours than junior classes. It may therefore be better to group all senior classes together and all junior classes together. Examples of curriculum times from several countries were given in Chapter 4. A more detailed example from Solomon Islands is provided in Box 13.

Disadvantages are:

- Pupils in grades 1, 2 and 3 have to use the same desks and chairs as pupils in grades 4, 5 and 6, even though the children are physically of different sizes. Special furniture designs may be needed.
- It is necessary to buy two sets of class readers, etc., because all children of the same grade are at school together.
- In many systems, grade 6 pupils have to take an important examination. They are in the afternoon session, and may find it hard to concentrate.
Double-shift schooling

- The morning session has no pupils above grade 3. It loses the leadership that senior pupils can provide.

Box 13. Different periods of study for different grades?
In some systems, junior children are started off gently with a shortened school day. Their ability to concentrate improves as they get older, and more is demanded from them as they progress through the school system. For example in Solomon Islands the curriculum for grades 1 and 2 has only four hours of teaching time, for grade 3 it has four and a half hours, and for grades 4, 5 and 6 it has five hours.

Such variation in the duration of teaching has implications for the organization of double-shift systems. It may be best for all children of the same grade to study at the same time. Thus, in Solomon Islands if all the grade 1 and 2 children start together, they will all finish together. Grade 3 is anomalous; but if grade 3 classes start with grades 1 and 2, they will finish only 30 minutes later. This arrangement releases all classrooms for grades 4, 5 and 6, and simplifies general organization.

Option 3
Grades 4, 5 and 6 in the morning, and grades 1, 2 and 3 in the afternoon.

This is the reverse of Option 2. Most points are similar, but this option has two additional advantages and one additional disadvantage.

Advantages are:
- Grade 6, the examination class, is in the morning. These pupils may find it easier to concentrate on their studies.
- Junior children start in the afternoon, and later move to the morning session. This gives them something to look forward to. Instead of feeling that they have lost a privilege, the senior children feel that they have won a privilege.

The disadvantage is:
- Children who are just beginning school have to start with an afternoon session. This places an extra burden on small children at a critical point in their lives.
Most primary schools in Bangladesh accommodate grades 1 and 2 in the morning and grades 3, 4 and 5 in the afternoon. UNESCO staff have designed special furniture for use by pupils of different sizes. The table has a bar underneath which small children can use as a footrest; and the bench has a shelf underneath for small children to use as a footrest and for other children to store books.

The designers also recognized that (a) at that period in history, many children were likely to drop out of school after the early grades and (b) large children need more horizontal space. Accordingly, they designed their furniture to accommodate either three small children or two large ones.

**Option 4**

Grades 1, 3 and 5 in the morning, and grades 2, 4 and 6 in the afternoon.
Double-shift schooling

Advantages are:
• As children move through the school system, they alternate between morning and afternoon sessions.
• Teachers of individual grades can easily liaise.
• Grade 1 children are given the morning session.

Disadvantages are:
• Alternation of morning and afternoon sessions may cause problems for families, especially if other children are in opposite sessions.
• As in options 2 and 3, it is necessary to buy two sets of class readers, etc. because all children of the same grade are at school together.
• Grade 6 children (who may be taking important examinations) are in the afternoon session.
• Grade 6 children do not feel they have won the privilege of studying in the morning for their last year.

Option 5

Grades 2, 4 and 6 in the morning, and grades 1, 3 and 5 in the afternoon. This is the reverse of Option 4. Similar points apply, but some are reversed.

Advantages are:
• Grade 6 pupils study in the morning.
• Grade 5 pupils, who study in the afternoon, can look forward to the privilege of studying in the morning when they reach grade 6.

The disadvantage is:
• Grade 1 children have to start their school careers with afternoon study.

Option 6

Grades 1, 2, 5 and 6 in the morning, and grades 3 and 4 in the afternoon.

Box 13 noted that in many countries junior grades have fewer hours of instruction each day than do senior grades. The box gave
the specific example of Solomon Islands, suggesting that in this case it was preferable to teach grades 1, 2 and 3 in one session, and grades 4, 5 and 6 in the other.

Sometimes the difference in the number of hours of instruction for each grade is so great that another pattern becomes possible. In some Indonesian schools, for example, the duration of daily teaching (excluding breaks) is:

- Grades 1 and 2: 2 hours and 30 minutes,
- Grades 3 and 4: 4 hours and 10 minutes,
- Grades 5 and 6: 4 hours and 30 minutes.

This means that two sessions of grade 1 or 2 take only a little more time than a single session of grade 5 or 6. In turn, this means that schools can operate as indicated in Table 6.1.

**Table 6.1  Timetable for a school with grades 1, 2, 5 and 6 in the morning and grades 3 and 4 in the afternoon**

<table>
<thead>
<tr>
<th>Grade</th>
<th>Total school day</th>
<th>Break times</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morning session</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>8.00-10.40</td>
<td>9.30-9.40</td>
</tr>
<tr>
<td>2</td>
<td>10.40-1.20</td>
<td>11.55-12.05</td>
</tr>
<tr>
<td>5</td>
<td>8.00-1.00</td>
<td>10.00-10.15</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11.30-1.45</td>
</tr>
<tr>
<td>6</td>
<td>8.00-1.00</td>
<td>10.00-10.15</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11.30-11.45</td>
</tr>
<tr>
<td>Afternoon session</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>1.00-5.30</td>
<td>3.00-3.10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4.30-4.40</td>
</tr>
<tr>
<td>4</td>
<td>1.00-5.30</td>
<td>3.00-3.10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4.30-4.40</td>
</tr>
</tbody>
</table>

Advantages are:
- Both the children starting school for the first time and the senior children preparing for examinations have classes in the morning.
- More classes attend school in the morning than in the afternoon.
Double-shift schooling

The disadvantage is:

- The model is only possible in systems with very short teaching times for pupils in grades 1 and 2. While it is common for junior grades to study for fewer hours than senior grades, the gap is not usually as wide as in shown here. Many educators would argue that daily teaching time of just 2 hours and 30 minutes is too short.

This discussion shows that school administrators may have a wide range of options. The options are not necessarily exclusive, for in many education systems some or all of the models operate side by side.

In some countries, school authorities are permitted to decide for themselves which model to use. In other countries, central authorities decide on the best system and then issue instructions to individual schools.

Secondary schools

The options for secondary schools may be broadly similar to the options for primary schools. However, some additional factors may need to be considered:

- Senior classes in a ‘5 + 2’ system. Many countries have a ‘5 + 2’ secondary school structure, i.e. with junior secondary school lasting for five years and leading to a school certificate, followed by senior secondary school lasting for two years and leading to a higher school certificate.

Double-session institutions may choose to have one set of forms 1 to 5 in the morning and another set of forms 1 to 5 in the afternoon. But they are then left with the problem of forms 6 and 7. Teachers for these classes are often more highly qualified than the other staff. If forms 6 and 7 are put in only one shift, then the other pupils in that shift have an advantage not shared by their colleagues.

One solution is to allow forms 6 and 7 to operate across the shifts. Careful timetabling can allow the students to come halfway through the morning shift and to leave halfway through the afternoon shift. Schools which have tried this system have found that it is harder to supervise the forms 6 and 7 students because they come and go at odd times. They have also found that the senior students provide less leadership because they
are less involved in school life. Nevertheless, the model can be made to work reasonably well.

- **Forms 1-3 versus forms 4 and 5.** An alternative system avoids this problem by placing forms 1-3 in one shift and forms 4 and 5 in another. Forms 6 and 7 can then be taught with forms 4 and 5. In this system forms 1-3 lose the better qualified teachers; but the model is at least more simple.

Indeed, this model may be desirable even in schools which do not have forms 6 and 7 (i.e. only go up to form 5). Pupils usually begin to specialize in form 4, and a system which keeps forms 4 and 5 together ensures that class sizes are sufficiently large in the options for arts, science, agriculture, woodwork, etc.

These remarks apply to ‘5 + 2’ systems, which may be the most problematic. Many countries operate ‘3 + 3’ systems, with three years of junior secondary and three years of senior secondary schooling. In these countries it is usually best to keep all junior pupils in one shift and all senior pupils in another. The arrangement ensures that staffing and other aspects of organization are kept fairly simple.

2. *How should the timetable be organized?*

**General principles**

Four basic timetabling questions face administrators in double-shift systems:

- *What is the earliest time that children can start school?* The answer chiefly depends on the time it takes children to reach school. In some societies children travel for up to two hours. If school commences at 7.15 a.m., the children have to leave home very early, perhaps without breakfast. In other societies, children only have to travel for 20 minutes or less, and school can begin earlier.

An additional problem in some countries is that the early mornings are rather cold. This applies not only to countries in the far north and the far south of the world, but also to all mountainous countries.

- *How frequent, and how long, should be the breaks within sessions?* Because of the pressures of time, many double-shift
Double-shift schooling systems allow only one break during each session, though some fit in two breaks. The breaks generally last for 15 to 20 minutes.

- **How much time is needed for the transition between shifts?** Most schools allow 20 to 30 minutes, though some allow more and others allow less. A short changeover period saves time, and therefore allows the morning session to start later and the afternoon session to finish earlier. But changeover periods that are too short are also chaotic. Also, a reasonably long period is needed when afternoon-session children are prohibited from entering the school compound until the morning session has completed its classes. Otherwise, afternoon children hang around outside the school gate, perhaps causing problems for other people in the neighbourhood.

- **What is the latest time by which classes must end?** The answer depends on the nature of the community and the environment. Most communities consider it desirable for children to be home before dark. But it may be difficult to adjust going-home times to fit the time of nightfall in different seasons; and urban areas may have reasonable lighting, which makes the deadline less urgent. Schools in Islamic countries must also be sensitive to the times of prayer. It may be especially important for pupils to be home in time for the prayers at dusk.

**Specific examples**

**End-on systems**

Most of this book is concerned with ‘end-on’ systems of shift schooling. As explained in *Chapter 1*, this means that one group of pupils concludes its lessons before another starts. This is the most common form of shift system.

A typical daily timetable for a double-shift primary school in this system might be as shown in Table 6.2. This seems a good schedule because the children get two breaks, both of which have a reasonable duration. It has been made possible by the early start.

However, in some societies a starting time of 7.35 a.m. is considered unreasonably early for both pupils and teachers. In Imo State of Nigeria, for example, classes do not commence until 8.00 a.m. Because they must finish at 12.45 p.m. and fit in 4 hours and 25 minutes of teaching time, children in double-shift schools have
only one break lasting 20 minutes. This contrasts with the timetable in single-shift schools, which allocates one break of 40 minutes and another of 15 minutes. The result, according to one observer (personal communication), is that pupils in double-shift schools spend too much time inactively at their desks:

One can see that it is sitting and listening for most of the time, and the pupils easily get bored. The only organized activity is the physical education lesson, which often is haphazard because many playgrounds are too small. The afternoon session is not much better because most pupils are worn out before coming to school ...

This comment emphasizes the value of two breaks, even if they require the school day to start earlier.

Table 6.2  Typical timetable for an end-on double-shift primary school

<table>
<thead>
<tr>
<th>Morning shift:</th>
<th>Guidance and extra-curricular activities</th>
<th>7.30-8.00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lesson 1</td>
<td></td>
<td>8.00-8.35</td>
</tr>
<tr>
<td>Lesson 2</td>
<td></td>
<td>8.35-9.10</td>
</tr>
<tr>
<td>Lesson 3</td>
<td></td>
<td>9.10-9.45</td>
</tr>
<tr>
<td>Break</td>
<td></td>
<td>9.45-10.00</td>
</tr>
<tr>
<td>Lesson 4</td>
<td></td>
<td>10.00-10.35</td>
</tr>
<tr>
<td>Lesson 5</td>
<td></td>
<td>10.3-11.10</td>
</tr>
<tr>
<td>Break</td>
<td></td>
<td>11.10-11.25</td>
</tr>
<tr>
<td>Lesson 6</td>
<td></td>
<td>11.25-12.00</td>
</tr>
<tr>
<td>Lesson 7</td>
<td></td>
<td>12.00-12.35</td>
</tr>
<tr>
<td>Afternoon shift:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lesson 1</td>
<td></td>
<td>1.00-1.35</td>
</tr>
<tr>
<td>Lesson 2</td>
<td></td>
<td>1.35-2.10</td>
</tr>
<tr>
<td>Lesson 3</td>
<td></td>
<td>2.10-2.45</td>
</tr>
<tr>
<td>Break</td>
<td></td>
<td>2.45-3.00</td>
</tr>
<tr>
<td>Lesson 4</td>
<td></td>
<td>3.00-3.35</td>
</tr>
<tr>
<td>Lesson 5</td>
<td></td>
<td>3.35-4.10</td>
</tr>
<tr>
<td>Break</td>
<td></td>
<td>4.10-4.25</td>
</tr>
<tr>
<td>Lesson 6</td>
<td></td>
<td>4.25-5.00</td>
</tr>
<tr>
<td>Lesson 7</td>
<td></td>
<td>5.00-5.35</td>
</tr>
<tr>
<td>Guidance and extra-curricular activities</td>
<td>5.35-6.00</td>
<td></td>
</tr>
</tbody>
</table>
Double-shift schooling

Overlapping systems

Alternatively, schools may operate overlapping shifts. Students arrive and leave at different times, and pupils of different shifts are on the school compound together.

One example of an overlapping shift system used in Indonesia was given in Box 3 in Chapter 1. The first shift operates from 8.15 a.m. to 3.10 p.m., and the second shift operates from 9.35 a.m. to 4.30 p.m. Between 9.35 a.m. and 3.10 p.m., all students are on the compound together. During this period sufficient space is found by (i) using every single room – including the assembly hall, library, laboratories, workshops, etc., (ii) using fields or other open spaces for physical education and agriculture classes, and (iii) if necessary holding some lessons under a tree or in some similar location.

Chapter 1 also mentioned a slightly more complicated model used in Malawi. This model allows for the fact that the daily timetable for children in different standards (grades) has different durations. The daily schedule is shown in Table 6.3.

### Table 6.3  Timetable in an overlapping double-shift system

<table>
<thead>
<tr>
<th>Begin school day</th>
<th>End school day</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.00 a.m.</td>
<td>7.30</td>
</tr>
<tr>
<td>Grade 2 arrives</td>
<td>Grades 1, 6, 7, 8 leave</td>
</tr>
<tr>
<td>8.00</td>
<td>Grades 1, 2 leave</td>
</tr>
<tr>
<td>9.00</td>
<td>Grades 6, 7, 8 leave</td>
</tr>
<tr>
<td>10.00</td>
<td></td>
</tr>
<tr>
<td>10.40</td>
<td></td>
</tr>
<tr>
<td>11.00</td>
<td></td>
</tr>
<tr>
<td>12.00</td>
<td></td>
</tr>
<tr>
<td>1.05 p.m.</td>
<td>2.00</td>
</tr>
<tr>
<td>2.00</td>
<td>3.00</td>
</tr>
<tr>
<td>3.00</td>
<td>4.30</td>
</tr>
</tbody>
</table>

| Grades 3, 4, 5 arrive | Grades 3, 4, 5 leave |

The system used in the Indonesian school is the more simple of the two. The chief advantages of this type of system are the following:

- Students and staff feel that they belong to a single institution. There is less separation between the shifts. When necessary, the whole school can be assembled in one place at one time.
- Staff can be used more flexibly to teach pupils of both shifts. Timetabling is therefore simplified, and it is easier to give pupils in different shifts equal access to particularly good teachers.
Staff find it easier to liaise with each other for subject meetings, ordering of supplies, co-ordination of examinations, etc.  
Students are available at a common time for sports competitions, choir practice, etc.  
Students are less likely to feel disadvantaged if they are in one shift rather than the other.  
The school day starts later than it would in an end-on shift system. It also finishes earlier. More time is available for staff meetings and extra-curricular activities at the end of the school day.  

The chief disadvantages of the system of overlapping shifts used in the Indonesian model are as follows:  
The school compound is very congested during the overlap period. This may cause confusion, and may even be a safety hazard.  
If extra buildings are constructed to accommodate students during peak times, the financial savings of double-shift schooling are reduced.  
If extra buildings are not constructed, then some students have to study under trees. Learning conditions may be unsatisfactory.  
Physical education, agriculture and other lessons which are held outside have to be scheduled for the hottest time of day.  
If it rains, students who are learning outside have to come inside. There may not be any space for them, even in the corridors.  
The fact that students arrive and leave at different times of day may seem untidy and disruptive.  

The Malawian model does not have so many advantages, since the students in grades 1 and 2 leave when the students in grades 3, 4 and 5 arrive. However, it does mean that the buildings are released. Without such a system, in many Malawian schools pupils would simply have to study outside. This is particularly problematic when the sun is intense or when it is raining. The system improves conditions for learning, and reduces absenteeism.  

Table 6.4 shows perhaps the most intensive possible type of system, having four overlapping shifts. The timetable is organized around use of classrooms (as opposed to laboratories or open areas for physical education). The four groups of students have been scheduled
Table 6.4  Timetable from a Philippines secondary school (form 2) showing a quadruple-shift system
in turn to take their lessons in the classrooms, and engage in other activities either before or after their classroom time. This timetable allows the classrooms to be in constant use from 7.00 a.m. to 7.40 p.m. There are no breaks in classroom use for recess or changeover between sessions: as soon as one group of pupils moves out, the next moves in. Most other systems allow breaks between blocks of lesson time, so make less intensive use of classrooms.

Preparation of such a timetable is, of course, very complex. The one in Table 6.4 was done by hand, but ideally should have been done by computer. The particular school whose timetable has been reproduced here is in the Philippines. It has 36 streams and 8,300 pupils! This enrolment is larger than that in many universities, and one aspect of the school is similar to that of a university, for pupils are permitted to arrive and leave according to their own schedules. There is no fixed time at which everybody begins and ends the school day.

Some other features of this timetable are also worth highlighting:

- All classroom lessons last for 40 minutes, but many other lessons last for 60 minutes, i.e. one and a half periods. If there is no immediate lesson following, the students take a break. Students break at different times according to their own specific timetables.

- Although at first glance it appears that the last shift does not get so much classroom time as the other shifts, this is not actually the case. The last shift gets the same total number of lessons, though some of the classroom lessons are held in laboratories or other places, and are scattered among the periods before the block of classroom time.

- Because of the variable times of breaks, the compound is often noisy. To reduce this problem, the classrooms have been put at the top of a four-storey building so that there is less disturbance from the noise below.

- On the other hand, variation in the times of breaks has the advantage that pressure on the school canteen is spread out. The person who drew up the timetable noted the need for each student to have a break around lunchtime, but also noted the need to stagger these breaks.
Double-shift schooling

- Some students have to take lessons in physical education (which is part of Youth Development and Training or YDT) at midday. They therefore become hot and sweaty, and it is difficult for them to concentrate when they return immediately to ordinary classroom work. This problem cannot easily be solved.
- Some extra-curricular activities are fitted into the school day after classes, but most take place on Saturday mornings. The fact that all students are free on Saturday mornings allows formation of teams from different sessions, and helps foster a feeling of cohesion and school identity. However, students only come on Saturday mornings when they are involved in a particular activity. This means that the whole school is never in the same place at the same time. It would in any case be impossible on a small campus.
- Apart from this school timetable, there is another for adult education. Adult classes operate from 5.30 p.m. to 8.30 p.m., so the facilities are used even more intensively than is indicated by the school timetable.

Box 14. Different systems for different seasons?
Regions which are distant from the equator have wide seasonal variations in the number of hours of daylight. Administrators usually prefer schools to close in time for children to get home before darkness. During the winter months, end-on double-shift schools find it difficult to complete their lessons in time.

One solution is to operate an overlapping instead of an end-on shift system. However, administrators aware of the disadvantages of overlapping shifts might be unenthusiastic about making this a permanent arrangement.

In this case, an alternative solution might be a compromise. Schools could operate end-on shifts when daylight hours are long, and overlapping shifts when daylight hours are short. The mixture of systems might seem untidy; but with careful organization it could be workable.
3. Conclusions

The choice of school structure and timetable may be partly determined by specific constraints on individual administrators. For example, safety regulations may prohibit administrators from having too many children on a school compound at once, and may therefore require an end-on rather than an overlapping shift system. Alternatively, the need to avoid pupils travelling during the hours of darkness may require an overlapping rather than an end-on system. Each country has its own regulations and specific circumstances.

The choice of school structure and timetable may also depend on administrators’ personal preferences. The first part of this chapter presented six ways in which the classes of a six-grade primary school could be divided between morning and afternoon shifts. Each option has both advantages and disadvantages. The final choice of system would depend on the weight that individuals give to these advantages and disadvantages. Similar observations apply to the choice between end-on and overlapping shifts.

It is therefore impossible to recommend a single ‘best’ system. Individual administrators must explore the options and decide for themselves.
Chapter 7. Staffing and management

Introduction of double-shift systems may raise major questions of staffing and management. Policy-makers have to decide whether staff should be shared among shifts, and practitioners have to find ways to make systems work efficiently and effectively. Management is particularly challenging in overlapping shift systems.

1. Staffing double-shift systems

   **Head teachers**

   In some countries double-session schools have only one head teacher, but in other countries they have two. Which type of system is better?

   The answer to this question depends on the viewpoint of the observer, since each type of system has good and bad sides. The advantages of one system are mirrored as disadvantages in the other.

   The advantages of having only one head teacher are:

   - The head teacher can guide the operation of the whole school. She/he can transfer pupils and staff from one session to another, can supervise maintenance of facilities, can avoid duplication of purchases for morning and afternoon sessions, and can encourage the growth of an overall school spirit.
   - The morning session might be more prestigious. Education authorities might find themselves pressed to appoint the best head teachers to morning sessions, leaving the afternoon sessions with the second-best staff. This is avoided if there is only one head teacher.
   - Parents who have children in both sessions can approach a single head teacher to discuss problems.
   - The school has more flexibility in class organization. For example, it would be difficult for a school with two head teachers to have grades 2, 4 and 6 studying in the morning and grades 1, 3 and 5 studying in the afternoon. Such a system would lack
continuity, for head teachers would ‘lose’ their pupils when they were promoted each year to the other session, and would then ‘regain’ them the year after.

- If separate sessions each have their own head teachers, the education authorities have to find a large number of appropriate individuals for these senior posts. If both sessions are combined under one head, the demand for talented head teachers is not so great. The system is less threatened by limitations in the supply of good leaders.

The disadvantages of having only one head teacher are:

- The working hours may be very long – from the beginning of the morning session to the end of the afternoon session. The long day could be very exhausting, and the head teacher might not do the job well.
- In most systems, the salary for a head teacher of a large school is greater than the salary for a head teacher of a small school. In addition, supplementary payments might be necessary to compensate for the long working hours; and in large schools it is essential to appoint deputy head teachers. The system might be more costly than the alternative of having two lower-level head teachers for separate sessions.
- Head teachers in charge of both sessions have many staff and pupils, and cannot know individuals so well. Head teachers of separate sessions can know their teachers and pupils better.
- The number of promotion posts is smaller. A system which has separate head teachers for separate sessions has a larger number of promotion posts.

These advantages and disadvantages have been presented here from the angle of a single head teacher for a whole school. In most cases, the opposite advantages and disadvantages apply to systems which have separate head teachers for each session. The decision on which system is most appropriate will depend on the preferences of the education authorities concerned.
Teachers

Chapters 1 and 3 pointed out variations in systems for utilization of teachers. Staff may teach in:

- only one session;
- the whole of one session and part of another;
- in part of two (or more) sessions;
- in the whole of two (or more) sessions.

The choice of system partly depends on (i) whether or not there is a shortage of teachers; (ii) whether or not the teachers’ union agrees that staff should work in more than one session; (iii) whether the sessions are short or long; and (iv) whether schools have one head teacher for all sessions or separate head teachers for separate sessions. Sharing of teachers is particularly common in triple-shift systems because the sessions are short. Sharing is less common when separate sessions have separate head teachers, because the framework imposes practical difficulties.

The extent of teacher sharing also depends on the specialisms of the staff. For example, while there is usually enough work in single sessions for teachers of English, mathematics and social studies, this...
is less likely to be true for teachers of music, home economics and technical drawing. Specialist teachers are often asked to take classes in the second half of morning sessions and the first half of afternoon sessions.

Staff may also work across sessions when supervising extra-curricular activities. For example, pupils from both or all sessions may jointly participate in football matches, music competitions, athletics, field expeditions, etc.

Box 16. How do teachers view double-shift systems?

The attitudes of teachers are, of course, a crucial determinant of the success or failure of double-shift systems. If teachers like or are at least prepared to co-operate with the systems, then the machinery can work smoothly. But if teachers feel overworked, inadequately compensated and professionally frustrated, then the innovation is unlikely to be successful.

This highlights the need for policy-makers to be realistic in their expectations. Many teachers like half-day schooling because they retain the same basic salary but have more free time for their own affairs. Teachers may also like the opportunity to increase their incomes through extra teaching in a second shift. However, teachers sometimes feel frustrated by the professional constraints that double shifts impose, and staff in tropical countries are unenthusiastic about teaching on hot afternoons.

Ancillary staff

Many double-shift schools which have separate teachers for separate shifts nevertheless have single teams of typists, cleaners, night-watchmen, cooks, messengers and other ancillary staff. This may permit a substantial saving of salaries.

This type of system may require special arrangements to ensure that duties are covered appropriately. Take, for example, a country in which normal working hours for clerical staff are 8.00 a.m. to 4.00 p.m. A double-session school might operate from 7.30 a.m. to 5.30 p.m. This implies:
Double-shift schooling

- either that the school office is closed for part of the school day (and that the afternoon session suffers more severely than the morning one);
- or that the clerical staff themselves work on an overlapping shift system, with one or more staff arriving early and then leaving early, while others arrive later and leave later.

2. Managing double-shift systems

Many of the challenges and techniques of management have already been mentioned. However, it is useful to make several additional points.

The problems of school management greatly increase when extra shifts are added. Overlapping shift systems are the most difficult to manage.
It will have become obvious that management tasks are more challenging in double-shift schools than in single-shift ones. This is true in end-on double-shift schools, but is even more extreme in overlapping double-shift schools. Chapter 6 highlighted a school in the Philippines that had 8,300 pupils in four overlapping shifts. Management of this school must be an extremely challenging task.

This fact has implications for recruitment and training. Before a double-shift system is introduced or extended, authorities would be wise to check whether they have a sufficient supply of appropriate people to run the schools. They might also organize short training courses to discuss ways of:

- deploying teachers between shifts;
- deploying ancillary staff between shifts;
- promoting a feeling of school unity in institutions divided between two or more shifts;
- managing movement of students, especially:
  - in end-on shifts at the times of changeover, and
  - in overlapping systems when two or more groups are on the campus together;
- ensuring that extra-curricular activities are given appropriate attention;
- adapting the main curriculum (if it is necessary to reduce daily teaching time);
- liaising with parents over such matters as nutrition, safety in travel to and from school (especially if the shift system requires travel during hours of darkness), rotation of shifts, and so on.

Such training courses might last for only a week, or they might be longer. Leadership could be provided by head teachers and their assistants who have themselves run double-shift schools and have found solutions to the difficulties.
Chapter 8. Quality

Chapter 4 pointed out that double-shift schools are not necessarily qualitatively inferior to single-shift schools. Indeed, if the choice is between single-shift schools with huge classes and congested facilities or double-shift schools with smaller classes and a more personal atmosphere, the double-shift schools may actually be better.

Nevertheless, educators raise many legitimate concerns about the quality of double-shift schooling. Accordingly, this chapter focuses on ways that their concerns may be met. It looks first at the main curriculum, then at extra-curricular activities, and thirdly at links between school and home.

1. The main curriculum

As noted in Chapter 4, double-shift systems are threatened by many qualitative problems. Seven possible strategies to deal with these problems may be highlighted.

1. **Increase the number of school days.** One way to compensate for a shortened school day is to increase the number of days in the academic year. Thus double-shift schools in Senegal have ten extra school days in the academic year, and double-shift schools in Hong Kong operate on alternate Saturday mornings.

2. **Improve teaching methods.** Arrangements to lengthen the school term and week will generate little benefit if the quality of teaching is poor and if children are bored. Authorities should therefore try hard to ensure that lessons are lively and meaningful. Improvements may be achieved through strengthened supervision and support systems, pre-service and in-service training, better teaching aids, and so on. These inputs are needed in all systems, but may be especially desirable in double-shift systems in order to compensate for the constraints that double shifts impose.

3. **Improve the efficiency of the system.** In many systems, official teaching hours are rather different from actual teaching hours.
Especially in the rural parts of poor countries, teachers who are inadequately supervised may start school late and finish school early. The real school day, therefore, is even shorter than it appears at first sight. Authorities may be able to improve efficiency by strengthening supervision. If distances prevent central authorities from checking rural schools, the task can perhaps be delegated to community members on school committees.

4. Encourage out-of-school learning. The classroom is not the only place in which students learn. Even in traditional single-shift systems, pupils are usually given homework. In double-shift systems they can be given more homework. Of course, homework needs to be corrected. But this does not always have to be done by the teachers. Education authorities can design self-teaching materials. Alternatively, they can design materials for group work and peer correction. Research has demonstrated that pupils often learn a great deal when they correct the work of their peers. Peer-teaching can therefore be an effective educational strategy as well as a way to reduce the workload for the teachers.

Authorities may also invest in public libraries, and may encourage establishment of study areas attached to mosques, churches, temples and community halls, etc. The facilities may cater for pupils whose homes are too crowded or noisy for private study, but who cannot stay on the school compound because it is occupied by the other shift.

5. Give schools at least one extra room which is not in constant use for regular lessons. The room can then be used for remedial or other work outside the hours of a particular shift. Many teachers stay on the school compound after the morning shift or come long before they have to commence lessons for the afternoon shift. The teachers are often happy to conduct extra individual and group work with pupils who need it; but they need space in which to do it.

6. Ensure that teachers make full use of classroom walls for display purposes. Good use of walls to display supplementary lesson material and pupils’ work is one of the key indicators of a lively and effective teaching process. Posters and other colourful items
Double-shift schooling

brighten the atmosphere, encourage pupils’ sense of belonging to their classrooms, and promote learning outside lesson time. Wall space in double-shift schools is often neglected. Because classrooms are used by two or more sets of pupils, teachers and pupils have less feeling of ownership of those classrooms. They may fear that displays put up by one set of pupils will be damaged by the other set. Teachers may also fear that wall displays will confuse pupils of the other shift. This is especially likely when the different shifts cater for pupils of different grades. Thus, if a classroom caters for grade 4 in the morning and grade 1 in the afternoon, teachers may fear that the grade 4 pupils will find grade 1 wall displays too juvenile, and that the grade 1 children will find the grade 4 displays too complex.

Teachers may also be sensitive about each others’ work. If one teacher puts up many displays and the other puts up nothing, interpersonal relationships may be uncomfortable. Ideally, a good example by one teacher would improve the work of the other. But sometimes the good teacher gets discouraged, and in the end nothing is put up by either teacher.

Failure to put up wall displays is a missed opportunity for qualitative improvement. Especially when the two sessions serve pupils of the same grade, children can learn a lot from each others’ displays. In this respect, the double-shift system could actually be beneficial. The morning shift of grade 4 may gain reinforcement by looking at the wall displays of the afternoon shift of grade 4 as well as by looking at their own.

7. *Ensure that staff rooms are large enough.* Ideally, all teachers should have their own desks, whether they work in the morning or the afternoon sessions. If staff have their own desks, they will be more willing to come early or stay late, to undertake thorough preparation of lessons, and so on. If space is so constrained that morning staff must share desks with afternoon staff, the authorities should at least try to provide a few spare desks for displaced teachers.
Wall displays brighten the classroom atmosphere and promote learning outside lesson time. When classrooms are shared by two or more shifts, teachers should divide up the wall space between them. Children can learn a lot by looking at the displays of the other shifts.

**Box 17. The extra problems of inspecting double-shift schools**

Double-shift schools are sometimes ‘short-changed’ in inspections. This happens for two reasons:

- In many systems, the morning and afternoon shifts are considered part of a single school supervised by one head teacher. The schools are often very large, and it is difficult to assemble correspondingly large teams of inspectors to conduct full evaluations. The inspectorate may neglect double-shift schools, instead concentrating on smaller schools which are less demanding.

- The hours of schooling may not match the normal hours for inspections. For example, the normal working hours for inspectors might be 8.00 a.m. to 4.00 p.m. Inspectors could easily assess the morning shift, but might neglect at least the second half of the afternoon shift.

This type of problem requires careful attention from the authorities. It can easily be solved by making a special effort to form large teams and by adjusting the inspectors’ working hours when necessary. But it may require this special effort.
2. **Extra-curricular activities**

*Chapter 4* also highlighted the problems facing extra-curricular activities in double-shift schools. *Table 8.1* presents some possible solutions to these problems.

**Table 8.1  Extra-curricular activities – problems and possible solutions**

<table>
<thead>
<tr>
<th>Problems</th>
<th>Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>School compounds are too crowded. There is no space for extra-curricular activities.</td>
<td>Conduct activities outside school compounds. Use community facilities for football, drama, music, etc. Organize visits to museums, factories, country parks and so on.</td>
</tr>
<tr>
<td>Drama, group music and sports teams cannot be formed for the whole school because when some pupils are free, the others are studying.</td>
<td>(a) Designate one day a week on which morning classes finish an hour early and afternoon classes start an hour late; or (b) hold activities on Saturday mornings (if there are no classes that day).</td>
</tr>
<tr>
<td>Teachers who serve more than one shift have to rush from one shift to the next.</td>
<td>Ask senior pupils, parents or other members of the community to supervise extra-curricular activities.</td>
</tr>
<tr>
<td>The school compound is large enough, but some activities (e.g. music practice) disturb pupils who are studying.</td>
<td>Find a place outside the compound or, if sufficiently prosperous, construct a soundproof room.</td>
</tr>
</tbody>
</table>

This list shows that few obstacles to effective extra-curricular activities in double-shift schools are insurmountable. If staff make the effort to find ways round the obstacles, extra-curricular activities in double-shift schools can be at least as good as those in single-shift schools. Indeed, in some respects they may be even better for, as noted in *Chapter 4*, the larger population of double-shift schools makes it easier to justify investments in basketball courts, musical instruments, sports equipment, and so on.
Making double-shift schools work

Box 18. Using Saturdays for extra-curricular activities

Many double-shift schools have little time for extra-curricular activities on Mondays to Fridays. They therefore make use of Saturday mornings.

This system has the strong advantage that sports teams, school choirs, etc. can be recruited from all shifts. Apart from enlarging the pool of talent, the arrangement helps to promote pupils’ identity with the whole school rather than with just their particular shifts.

One problem is that school compounds may not be large enough to accommodate all pupils at the same time. To deal with this difficulty, many schools organize activities in rotation. Staff only ask pupils to come when the pupils are actually involved in activities on that particular day.

3. Links between school and home

The home environment is a third determinant of educational quality. If children spend more hours at home because of a double-session system, the home environment becomes more important.

This fact implies that double-shift schools may need especially strong parent-teacher associations and other bodies for liaison between school and home. These bodies need to address the following questions:

- **Use of out-of-school time.** Do pupils waste their time hanging around on the streets or watching too much television when they could be doing other things? How can parents help children with their studies? Homework may be even more important in a double-shift system than in a single-shift system.

- **Sleeping times.** When should the afternoon-shift pupils do their homework? Should they do it the same evening, even though they may be tired and may be distracted by other family activities? If so, they may go to bed late, knowing that they can also get up late since they do not have to go to school until midday. Or should the children go to bed early, and do their homework the following morning? If they do this, their minds
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may be fresher; but fewer adults may be available to supervise and help them.

• **Waking times.** Teachers often complain that because the morning shift starts quite early, children come to school without having eaten a proper breakfast. Pupils in the morning shift often need to get up before anybody else in the family, with the result that they are inadequately cared for.

• **Changing shifts.** In order to make the system more equitable, some education authorities like to alternate pupils between shifts. It is essential in these cases that the authorities inform parents and other family members.

Many of these measures to improve quality are, of course, desirable in *all* systems; but they may be especially important in double-shift systems.
Part IV
Conclusions
Chapter 9. Alternative models and cost-effectiveness

After going through this book, readers may have found that the issues associated with double-shift schooling are more complex than they had appeared at first sight. The work of policy-makers and planners is therefore difficult. Education authorities have to balance a wide range of competing factors, and must find strategies which are not only cost-effective but also politically acceptable.

This chapter begins by noting the need for policy-makers and planners to identify priorities. In the technical language introduced in Chapter 2, this requires them to determine the ‘utilities’ of alternative uses for resources. Secondly, the chapter summarizes the evidence on double-shift schooling and cost-effectiveness. The third section notes the possibility of different policies for different levels of education. Finally, the chapter comments on the social context for policy-making and on various strategies for implementation of reform.

I. Identifying priorities

Policy-makers and planners are constantly faced by dilemmas in the allocation of scarce resources. When choosing between alternative models for school systems, how can they identify priorities?

The answer to this question lies in the sphere of politics as well as in the domain of cost analysis. This book cannot explore in detail the complexities of decision making in all settings, but it can outline some elements. In connection with double-shift schooling, it is helpful to commence with an analogy.

The analogy concerns motor cars. Single-shift schooling may be compared with an expensive car, and double-shift schooling with a more modest one. The expensive car is more comfortable both for its passengers (the public) and its driver (the teachers). Anybody who has a choice would therefore prefer the expensive car – particularly if that individual does not personally have to meet the cost. But
a modest car may fulfil the basic needs of transportation quite adequately, and may be much more appropriate to the income levels of particular individuals. In the same way, double-shift schooling may meet the basic needs of education quite adequately, and may be more appropriate to the income levels of particular countries.

Expanding on this metaphor, an individual trying to decide whether to buy an expensive or a modest car would have to:

- assess the strength of available financial resources;
- think about the effectiveness of the car in meeting transportation and other needs;
- identify alternative uses for the money that could be saved by buying a modest instead of an expensive car;
- decide on priorities.

Decisions on investment in school systems can be approached in the same way.

- If governments have very limited resources, it may be totally impossible even to think about single-shift schooling. Only the governments having reasonable resources will have a choice (unless instead they decide to limit the coverage of education so that only a few children go to school and most are excluded).
- On the question of effectiveness, this book has pointed out that there may be differences in the outcomes of alternative school models, but that the differences may not be great if attention is paid to management.
- Alternative uses for resources will always exist – both within education and in other sectors.
- The real question, therefore, is on priorities in the context of limited resources. Governments have to decide whether they can opt for a single-shift school system which demands more resources, or whether to retain the more modest double-shift system and in order to achieve resource savings for other projects.

From this analysis it will be obvious that the fact that most rich countries have expensive education systems does not necessarily mean that their model is the most appropriate for every country.
Policy-makers and planners should look for the model which best meets priority needs within the constraints of financial stringency.

Box 19. Decision-making and utilities

In the technical language introduced in Chapter 2, the desirability of an object may be expressed as a ‘utility’ value. A rich person may decide to buy an expensive car because that person can easily afford it and does not have other more urgent needs. A person with a modest income may also decide to buy the car, even if the person has to make sacrifices elsewhere in order to find the money. Both individuals place a higher utility value on the car than on other things which might be purchased with their money.

Similar decisions may be made by governments. Governments of rich countries might decide that they want single-shift schooling because they can easily afford it and do not have more urgent claims on their resources. Governments of poorer countries might also decide that they want to have single-shift schooling, even if they have to sacrifice other forms of investment. This decision to give priority to single-shift schooling reflects the high utility that the governments place on single-shift schooling, and the lower utility that they place on the alternative uses for their resources.

2. Double-shift schooling and cost-effectiveness

The points made in this book about cost-effectiveness deserve summary and emphasis. Chapter 2 noted that a cost-effective model of education is not necessarily the one which produces the best quality product; nor is it necessarily the cheapest. It is the one which gives the best value for money within the budgetary constraints of the purchaser.

The book has shown that double-shift systems can be highly cost-effective. They can permit substantial financial savings, and do not necessarily cause a decline in quality. Moreover, even when introduction of double-shift schooling does cause some loss of quality, the benefits of reduced unit costs and of larger enrolments may outweigh the cost implied by the loss of quality.
As noted above, these facts will of course weigh heavily in the policy-making process. However, education authorities cannot simply assume that double-shift systems will operate cost-effectively. They must take specific steps to achieve the goal. Such steps should include the following:

1. **Choice of model.** This book has been mainly concerned with end-on systems of double-shift schooling. This relatively simple model is the one found in the widest range of countries. Governments might also wish to examine the system of overlapping shifts or other models highlighted in *Chapter 1*.

2. **Management structures.** Double-shift schools present strong managerial challenges. Triple-shift systems are more complex than double- or single-shift systems, and overlapping systems are more complex than end-on systems. Authorities need to pay attention to managerial structures and to recruitment and training of good personnel. It may be desirable to organize special short courses from time to time.

3. **Hours of schooling.** Double-shift systems should be designed so that sacrifices of time for both lessons and extra-curricular activities are not too serious. This requires careful examination not only of the school day, but also of the school week and the school year. It may be possible to compensate for loss of time in a normal school day by making better use of Saturday mornings and by extending the length of school terms.

4. **Out-of-school learning.** The impact of shortened teaching time can also be reduced by encouraging out-of-school learning. Teachers might be requested to give more homework assignments, and families can be guided on ways to help their children do the assignments. In addition, good textbooks and special self-instructional materials may be prepared.

5. **Use of teachers.** Education authorities have to decide whether to restrict teachers to individual sessions or whether to ask them to teach in double sessions. The decision will depend on (i) the supply of competent teachers, (ii) the views of the teachers’ union, (iii) estimates of the impact of teacher tiredness on the quality of teaching, and (iv) the extent to which extra work is remunerated by extra pay.
Double-shift schooling

6. *Extra rooms.* It was pointed out that availability of one or two extra rooms can provide considerable benefits. Teachers can use the rooms for remedial and other extra tuition, and pupils can use the rooms for doing homework. Education authorities would need to assess their budgetary and physical space constraints to decide whether it is possible to construct a few extra rooms in each school.

7. *Use of other community facilities.* When school compounds are really too congested, it may be possible to use other community facilities. Teachers could be encouraged to use public sports fields, libraries, halls, and so on.

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**Box 20. The importance of good management**

Good management is important in all education systems, and perhaps especially in double-shift ones. One danger is that double-shifting does not receive much attention in management because it is only a ‘temporary’ measure. Experience has shown that ‘temporary’ measures commonly last for many decades.

One reason why double-shift schools have worked well in Hong Kong, Malaysia and Singapore (though the governments in all those societies still chose to phase out the system as soon as it became feasible) was because the management cultures were strong. The question then for policy-makers and planners elsewhere is whether they can anticipate sufficient competence in management to justify launching the model. It may be better not to launch a double-shift system at all than to do so with inadequate forethought and operational capacity.

Examples of lack of forethought are unfortunately numerous. Particularly damaging have been unfulfilled promises to teachers in countries such as Cambodia and Uganda (Geeves and Bredenberg, 2005; Kleinhans, 2004). Non-payment of allowances for teaching in extra shifts has severely damaged the reputation of the double-shift system, and in turn led to opposition by society in general.

In summary, double-shift schooling may be highly cost-effective. However, cost-effectiveness is not achieved automatically; administrators must take specific steps to achieve the goal. If administrators are unable or unwilling to take these steps, then the cost-effectiveness of double-shift schooling will be threatened and the model will become less desirable.
3. **Different policies for different levels?**

This book has also pointed out firstly that junior sections of individual schools may be treated differently from senior sections, and secondly that primary schools may be treated differently from secondary schools. It is useful to summarize and supplement previous discussion.

**Junior vs senior sections**

Chapter 6 noted that in Zambia, grades 1-4 are treated differently from grades 5-7. This is chiefly because the hours of schooling are shorter in junior than in senior primary school. Even triple sessions may be fitted into daylight hours at the junior level, but such scheduling is impossible at the senior level. Separate treatment of the two levels improves efficiency and gives the authorities greater flexibility. The fact that senior forms never have triple shifts, and in many cases do not even have double shifts, may be especially important to pupils taking public examinations.

The same chapter also noted parallels in secondary schools. One policy variation concerns forms 6 and 7. Some schools schedule these classes across shifts so that highly qualified teachers that normally teach these senior classes are also available for the more junior classes of both shifts. Authorities may also decide to treat forms 1 to 3 differently from forms 4 and 5.

Finally, Chapter 5 highlighted the dangers inherent in the Trinidad and Tobago model in which junior secondary schools (forms 1-3) had double sessions but full secondary schools (forms 1-5) had single sessions. The mere existence of the two types of institution was inequitable, for pupils admitted to form 1 of full secondary schools had a better chance of proceeding to form 5 than did children who entered junior secondary schools and who had later to compete for a form 4 place in a separate institution. The inequity was made worse by requiring only the junior secondary schools to operate double sessions. Research has demonstrated at least partial correlation between academic success and socio-economic background. The system in Trinidad and Tobago discriminated against low socio-economic families.
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Primary versus secondary schools

Policy-makers may also treat primary schools as a whole differently from secondary schools as a whole. For example, they may decide to operate double shifts at one level but not at another.

One factor is that economic savings may be greater at the secondary level, for secondary schools usually have more costly buildings and facilities. Also, secondary school students are more likely to use their spare time for productive economic activities when not in school. These two facts suggest that if authorities wish either (i) to introduce double shifts at one level but not both, or (ii) to phase out double shifts from one level but not both, then it is more desirable to have double-shifts in secondary than primary schools.

However, an alternative approach points to an opposite conclusion. Policy-makers in Singapore found that secondary schools were more likely to take advantage of the opportunities offered by a single-session system than were primary schools. When selected schools were converted from double-session to single-session, secondary school pupils spent about twice as much time in after-school activities, thus making better use of their school facilities. The chief reasons were that (i) secondary staff responded more readily to the increased opportunities, and (ii) because the secondary pupils were older and more independent, they were better able to organize their own activities.

The opposing nature of these possibilities makes it difficult to set out firm recommendations on whether double-shift schooling is more desirable (or less undesirable) at primary rather than secondary level. Once again, policy-makers need to assess factors in their own contexts.

4. The social context of policy-making

Finally, it must be recognized that double-shift schooling is rarely popular with the general public. It may not matter how cost-effective a model may be if social and political forces are against it. In almost all countries the public assumes that double-shift schooling is qualitatively inferior to single-shift schooling, even when there is no empirical evidence to support such an assumption.
Moreover, the fact that double-shift schooling can extend access and therefore improve equity is not particularly appealing to families whose children are already in school. They fear that their own children will suffer and because of this, these families are likely to campaign against introduction of double-shift schooling; and the fact that the innovation could assist other people’s children who are not able to attend school is irrelevant to them.

This type of situation requires governments wishing to introduce or extend double-shift schooling to pay attention to certain implementation strategies.

1. **Publicity.** The authorities must explain why they consider double-shift schooling to be desirable. If they have reason to think that quality will not fall, then they must explain this fact. If they feel that quality might fall a little, but that this cost will be outweighed by the other benefits, then they must explain this fact too.

   Such publicity, it may be added, has to take many forms in order to reach all segments of the population. Rationales should be presented in official reports, in publicity brochures, in the press, in posters, and on the radio and television. Government officers must be prepared to enter dialogue with representatives of teachers’ unions and community bodies. The message must be explained consistently, patiently and frequently. Omission of such publicity exercises is likely to cause reforms to fail.

   In many countries, publicity is needed most strongly within the education profession rather than in the community as a whole. Inspectors in particular tend to be strongly opposed to double-shift systems. They see themselves as the guardians of quality, but are less well informed about, or interested in, questions of finance.

2. **Social equity.** Double-shift schooling will also be resisted if it is seen as a system only for the lower classes. The situation in Trinidad and Tobago was highlighted above, and deserves emphasis. To understand the mechanics and the impact of their measures, planners need micro-level analysis at the school level as well as macro-level analysis at the national level. In some cases, double-shift schooling has ironically increased rather than reduced problems of equity.
Double-shift schooling

3. **Reasonably large-scale implementation.** Introduction of double-shift schooling also needs to be done on a reasonably large scale. The Papua New Guinean experience is relevant in this context. The authorities decided to introduce double-shift schooling on a ‘pilot’ basis in only two schools. Those schools felt that they had been singled out for punishment. Parents tried to transfer their children to other schools, and political pressures forced abandonment of the project before it ever had a chance to succeed.

However, planners should also beware of oversimplistic formulae. In the Dominican Republic, double-shift schooling was introduced across the country, including in rural schools with small populations. Far from benefiting these communities and the country as a whole, the policy unnecessarily reduced the hours of rural schooling and compounded the disadvantages that these communities already suffered.

4. **Persistence.** Much initial opposition to double-shift schooling arises because people are not used to the idea. However, if management is adequate and policies are implemented consistently, teachers, families and the general public may adjust and find that the system is not so bad after all. Double-sessions have existed for many years in countries as far apart as Brazil, India and Nigeria and are accepted as standard parts of the system.

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**Box 21. The need for publicity – Senegalese experience**

When the Government of Senegal first tried to introduce double-shift schooling, it encountered major political problems. The authorities had not embarked on adequate general publicity, and initial public opposition was much stronger than the policy-makers had anticipated. The experience stressed the need for particular effort to inform:

- parents whose children were already in school;
- teachers;
- community leaders.

The authorities found it helpful to be able to point out that (a) double-session schooling operated effectively in many other countries, and (b) the benefits in those countries commonly outweighed the costs.
Conclusions

5. Conclusion

Decisions on the design and operation of education systems must take into account multiple factors and must bear in mind long-term as well as short-term perspectives. Double-shift schooling has been widely presented as a mechanism to expand enrolments and thereby help to achieve the goal of Education for All in less developed countries. It can indeed be a useful tool to help achieve this objective. However, this book has stressed that it must be accompanied by attention to management, which may be more complex in double-shift than in single-shift systems. Thus, while double shifting has been seen as a useful tool to cater for fluctuations in enrolment, e.g. in parts of the USA, it should not be considered a ‘quick fix’ for less developed countries which anticipate continued population pressure. Linden (2001: 21) has expressed this well:

In the long run, it seems desirable for all children to attend single shift schools for the full day, to get the maximum benefit and having the evening to socialize with friends, relax and participate in extra-curricular activity. However, if double-shift schools are proclaimed as a temporary expedient – doomed to be replaced “as soon as circumstances permit” – then they will inevitably be seen as [a] second class option. This will in turn make them unpopular for parents who will maintain or increase the political pressure to have them abolished. But it may not be possible to meet those expectations.

On the other hand, seeing double-shift schools as a solution for the medium term (perhaps even for the foreseeable future) may make it seem worth investing time and energy to increase their effectiveness. Embracing double-shift schools on a larger scale may make their presence more acceptable. But it takes significant political courage to positively support these schools ...

Thus, double-shift schooling requires careful preparation and strong support, particularly in the managerial domain. Planners should look at different levels within school systems, to see the impact and mode of operation at institutional and local levels as well as in the country as a whole, and systematic monitoring is needed over time.

This book has also demonstrated that much can be learned from comparative analysis. Policy-makers and planners can identify both
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...positive and negative lessons, and can usefully examine the details of alternative models. In turn, readers of this book are encouraged to share their own experiences internationally as well as nationally and locally. Double-shift schooling is only one among many tools to expand access and achieve other goals; but in line with Linden’s conclusion (2001: 13), this book may have demonstrated that they are a tool to be taken seriously rather than being one – as is so often the case – which may be dismissed out of hand.
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The booklet

Double-shift schooling primarily aims to extend and minimize unit costs. However, some systems only achieve these goals at the expense of educational quality. Planners may be faced with difficult choices when designing systems.

Drawing on experiences on a wide range of countries, this booklet highlights the advantages and problems of double-shift systems. Comparison is made with single-shift systems, and also with systems having triple, even quadruple shifts. This booklet will be useful to planners at sub-national levels as well as national levels. It will also be valuable to head teachers and others responsible for running double-shift schools.

The author

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