Part IV: Conclusions

Chapter 9: Alternative Models and Cost-Effectiveness

After going through this book, readers may have found that the issues associated with multiple-shift schooling are more complex than they appeared at first sight. The work of policy-makers 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 are also politically acceptable.

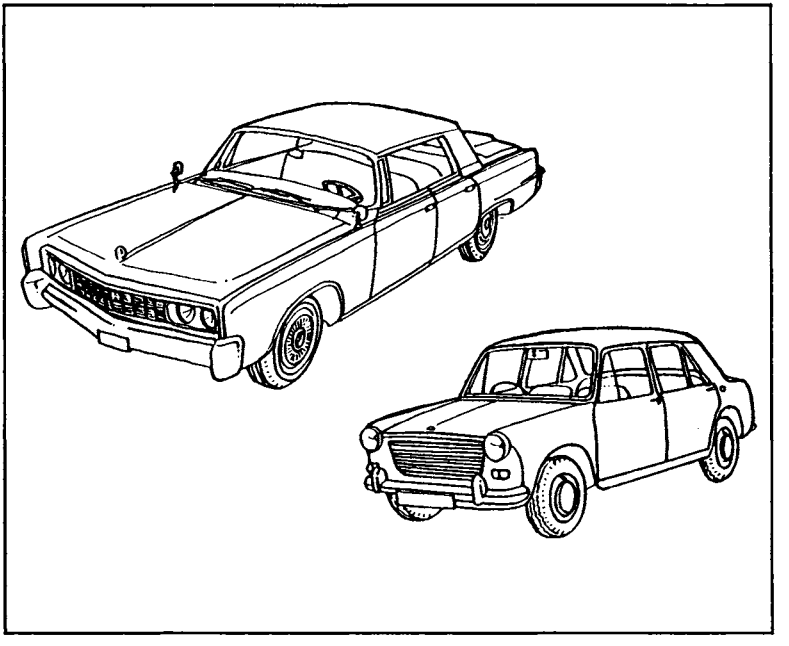
This chapter begins by noting the need for policy-makers to identify priorities. In the technical language introduced in Chapter 2, this requires them to determine the 'utilities' of alternative uses for resources. Secondly, the chapter summarises the evidence on multiple-shift schooling and cost-effectiveness. 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.

1. Identifying Priorities

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

The answer to this question of courses lie 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 multiple-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 multiple-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, multiple-shift schooling may meet the basic needs of



Single-shift schooling is like an expensive car, and multiple-shift schooling is like a modest car. The expensive car is luxurious, but both vehicles carry their passengers where they want to go. Expensive cars do not necessarily give good value for money. For many people, modest cars represent the most appropriate investment.

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 his financial resources,
— think about the effectiveness of the car in meeting his transportation and other needs,
— identify alternative uses for the money that could be saved by buying a modest instead of an expensive car, and finally
— decide on priorities.

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

— If a governments are poor, it may be totally impossible even to think about single-shift schooling. Only if the governments are reasonably rich will they 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 are unlikely to be great.
— Alternative uses for resources will always exist, both within education and in other sectors.
— The real question, therefore, is on priorities. Governments have to decide whether they wish to opt for the extra luxury and prestige of a single-shift school system or whether to retain the more modest multiple-shift system and use the money they have saved for other projects.

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

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 he 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 he 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. Multiple-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 multiple-shift systems can be highly cost-effective. They can permit substantial financial savings, and do not necessarily cause a decline in quality. And even when introduction of multiple-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 multiple-shift systems will operate cost-effectively. They must take specific steps to achieve the goal. Such steps should include:

a) *Choice of Model.* This book has been mainly concerned with 'end-on' systems of multiple-shift schooling. This relatively simple model is the one found in the widest range of countries. However, governments might wish to examine the system of overlapping shifts or other models highlighted in Chapter 1.
b) *Management Structures.* Multiple-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 organise special short courses from time to time.
c) *Hours of Schooling.* Multiple-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.
d) *Out-of-School Learning.* The problems 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.
e) *Use of Teachers.* Education authorities have to decide whether to restrict teachers to individual sessions or to ask them to teach in multiple 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 rewarded by extra pay.

End-on or Overlapping Shifts?

The system of end-on shifts is the most popular, and has the strongest potential for budgetary savings. However, some education authorities prefer overlapping shifts. The model does not save so much money, and it can create major management problems; but it does have some attractive features.

The relative strengths of each model have been carefully appraised in Jamaica. One report recommended an 'extended day' in which the first shift would operate from 7.30 am to 1.30 pm, and the second shift would operate from 9.00 am to 3.00 pm. The report pointed out that:

> *careful time tabling of classes and scheduling of break times for each set of students would allow sole use of the school facilities by each shift for approximately 2.5 hours per day. For the remainder of the school day, the facilities would be shared. Classes in physical education, art, music, science or other special subjects would occupy the facilities designed for these purposes, thus leaving rooms free for other classes.*

As noted in Chapter 6, one major problem of overlapping shifts is congestion. In some countries, overlapping systems have been replaced by end-on systems because the authorities have been worried about safety.

However, overlapping systems also have strong advantages. At one point each day all teachers and students are on the compound together, so can have a stronger sense of belonging to a single school. The fact that all teachers can work in both shifts makes timetabling more flexible and encourages coordination of curricula. Also, more time is available after the second shift for meetings and extra-curricular activities. Finally, students are less likely to feel disadvantaged when attending one shift rather than the other.

According to the Jamaican report, capital costs for the extended-day system would be 24% less than those for the single-shift system. Costs would be 32% less in a system of end-on double shifts, but the report felt that the educational disadvantages outweighed the financial savings.

f) *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.

g) *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, etc..

In summary, multiple-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 multiple-shift schooling is threatened and the model becomes less desirable.

3. Different Policies for Different Levels?

This book has 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 summarise and supplement previous discussion.

(a) Junior vs Senior Sections

Chapter 6 noted that in Zambia, for example, 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 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 & Tobago model in which junior secondary schools (Forms 1–3) have double sessions but full secondary schools (Forms 1–5) have single sessions. The mere existence of the two types of institution is inequitable, for pupils admitted to Form 1 of full secondary schools have a better chance of proceeding to Form 5 than do children who enter junior secondary schools and who must later compete for a Form 4 place in a separate institution. The inequity is 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 & Tobago discriminates against low socio-economic families.

(b) 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 multiple 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 multiple-shifts at one level but not both, or (ii) to phase out multiple-shifts from one level but not both, then it is more desirable to have multiple-shifts in secondary than primary schools.

However, an alternative approach points to an opposite conclusion. Research in Singapore has shown that secondary schools are more likely to take advantage of the opportunities offered by a single-session system than are primary schools. The research found that 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 organise their own activities.

The opposing nature of these possibilities makes it difficult to set out firm recommendations on whether multiple-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 recognised that multiple-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 multiple-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 multiple-shift schooling can extend access and therefore improve equity is not particularly appealing to families whose children are already in school. Because they fear that their own children will suffer, these families are likely to campaign against introduction of multiple-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.

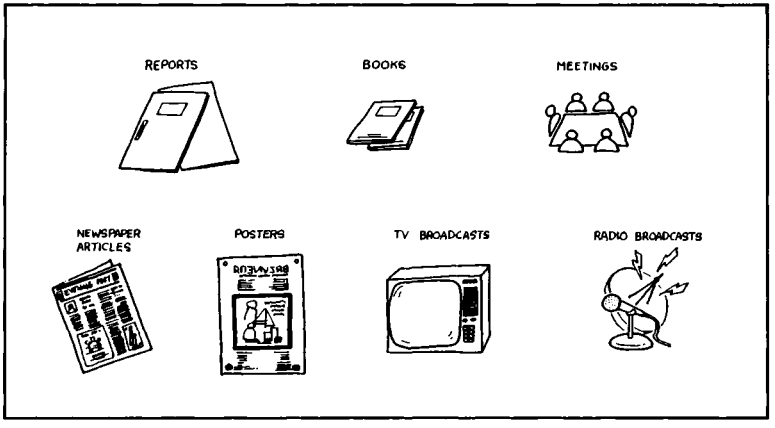
This type of situation requires governments which wish to introduce or extend multiple-shift schooling to pay attention to certain implementation strategies. Four strategies are particularly worth noting:

a) *Publicity*. The authorities must explain why they consider multiple-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 multiple-shift systems. They see themselves as the guardians of quality, but are less well informed about or interested in questions of finance.



Introduction of reforms, especially when the changes are widely considered undesirable, requires extensive, multi-media presentation of the reasons for the reforms. Failure to engage in this publicity may lead to disaster.

b) *Social Equity*. Multiple-shift schooling will also be resisted if it is seen as a system only for the lower classes. The situation in Trinidad & Tobago was highlighted above, and the example may be supplemented by another from Uganda. When double-shift schooling was introduced in Uganda during the 1960s, élite schools were exempted from the innova-

tion. The general public immediately associated double-shift schooling with inferior-quality education, and rightly protested against the government's biased treatment. As a result, double-shift schooling never had a chance to prove its worth. If they seriously believed in double-shift schooling, the authorities should have introduced it in the élite schools as well as in the ordinary schools.

c) *Reasonably Large-Scale Implementation.* Introduction of multiple-shift schooling also needs to be done on a reasonably large scale. 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 project before it ever had a chance to succeed.

d) *Persistence.* Much initial opposition to multiple-shift schooling arises because people are not used to the idea. But once teachers, families and the general public adjust, they find that the system is not so bad after all. Double-sessions have existed for many years in countries as far apart as Malaysia, Nigeria and Ecuador. They are accepted as part of the system, and are no longer the focus of massive public complaint.