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Fundamentals of Educational Planning

Educational access, equity, and development: Planning to make rights realities

Keith M. Lewin

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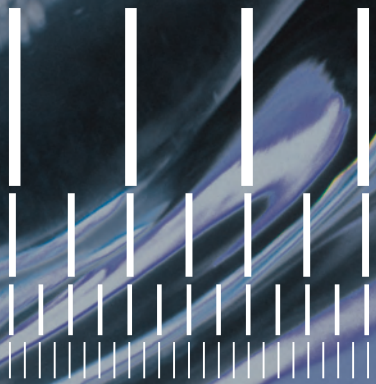

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Keith M. Lewin

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Fundamentals of educational planning

The books 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 proved 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 books includes monitoring the evolution and change in educational policies and their effect upon educational planning requirements; highlighting current issues of educational planning and analysing them in the context of their historical and societal setting; and disseminating methodologies of planning that 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 authors from a wide range of backgrounds and disciplines the opportunity to express their views on changing theories and practices in educational planning.

Over the past few years, the global education community has been taking stock of its 25-year effort to attain Education for All. Among the conclusions drawn are that universal access to basic education is very much an incomplete project, and that significant inequalities in access, completion, and learning remain in many parts of the world. In the design of the post-2015 education agenda, inclusion and equity in and through education are recognized as fundamental to achieving the new Education 2030 goal. In turn, achieving 'inclusive and equitable quality education and lifelong learning opportunities for all' is critical for ending poverty and building a peaceful and environmentally sustainable world, as outlined in the new universal sustainable development goals.

This monograph by Keith Lewin provides the reader, both educational planner and the less specialized government policy-maker,

with a lens through which to understand how educational exclusion operates and how it interacts with other forms of economic and social exclusion. He goes beyond this analysis to map how country-specific analysis can lead to improved education policies, credible plans, and effective practice that deliver on the transformative power of education.

The Institute is extremely grateful to Keith Lewin for his valuable contribution.

Suzanne Grant Lewis
Director, IIEP

Composition of the Editorial Board

Preface

Considerable progress in the coverage of basic education has been achieved since 2000, when the Millennium Development Goals and the Dakar Framework on Education for All were launched. According to the *2015 Education for All Global Monitoring Report*, the most recent statistics show that primary gross enrolment ratios at the global level are very close to and often above 100 per cent, a fact which indicates that the capacity is there to enrol all or almost all children between the ages of 6 and 11. Net enrolment ratios, on the other hand, while also increasing significantly in most countries, do not reach 100 per cent in many low- and middle-income countries. In 2015, not every child of school-going age is attending school and completes the six years of primary education which are indispensable to become literate and possess the tools which will allow him or her to continue learning throughout his/her life. According to the *2015 EFA Global Monitoring Report*, an estimated 58 million children are out of school. Of these, 25 million will never go to primary school and some 34 million leave school too early (UNESCO, 2015). These figures would be even higher if we were to take into accounts real learning outcomes, and if we were to consider those who do not complete nine years of basic education.

The reasons for this non-attendance are numerous and relatively well known. Some are linked to the children's health and physical condition, or to their family's extreme poverty, making it necessary for the children to work. Others are linked to the schools themselves, which are still too costly, located too far away from the home, offer poor facilities and a low-quality education or an unsecure environment. Other factors include: communities' cultural habits (e.g. encouraging early marriage), discriminatory practices against girls or certain ethnic groups, the overall environment (conflicts), the states (corrupt, fragile, non-existent, unstable, undemocratic), and political leaders (not committed enough). Various measures have been implemented in the past 20 years in different countries. Many of these focused on increasing and improving school supply; others, such as cash transfers, aimed at mobilizing the demand for education. These measures have been quite successful in increasing access to

schools. But they have been less effective in keeping children in schools; completion rates are increasing too slowly.

Yet continuous and sustained access of all to meaningful learning is essential to support long-term improvements in productivity, the reduction of poverty, empowerment of women, preventive health care, and reduction in fertility rates. In a globalized world where technology is evolving very rapidly, having a workforce educated beyond primary education is also a condition for attracting foreign investment and guaranteeing real and sustainable development – a development which would not involve the mere exploitation of a country's natural resources. At the individual level, some years of secondary education are indispensable to acquire the knowledge and skills necessary to understand how the world is changing, to become autonomous, to secure employment, and to live a decent life. Ensuring access to a nine-year basic education has become an absolute necessity.

Understanding the various dimensions of the problem of access, and the various causes of exclusion, so as to identify the most appropriate strategies to be applied, is precisely the objective of the present book.

The author's definition of access goes far beyond entry to school: it entails successful completion of a full cycle of primary and lower secondary schooling. Studying the pattern of enrolment by grades, he identifies different zones of exclusion, including a zone of total exclusion, for the marginalized children who never attended, and a zone of 'hidden exclusion', where low achievers, children with serious problems of attendance, and the over-aged, can be counted. These children are the most likely to drop out. The patterns of enrolment and the causes for non-entering or dropping out vary between and within countries. So do the zones of exclusion. Different strategies need to be formulated, depending on the zone of exclusion and the patterns and causes of drop-out. With the largest number of out-of-school children being in sub-Saharan Africa and South Asia, the author illustrates his model and proposals with detailed statistics and examples from four countries in these two regions.

The book strongly advocates long-term planning of education and for close monitoring of progress at all levels – school, community,

regional, and national level – so as to plan the necessary interventions and corrective actions as needed. The list of suggested interventions is long, but the book does not enter into the details of specific measures. Rather than specify how to implement them, the author challenges the planner to conduct a proper diagnosis of the causes of non-entry and drop-out and to identify the most suitable strategies, taking into account the local context and its political and administrative tradition. The rich discussion of possible interventions can inspire the planner, with the understanding that there are no guarantees that what has worked in one particular context will necessarily work in another.

The author makes several recommendations which go beyond planning the provision and organization of schools. Several of the suggested interventions call for a multisectoral approach to improve the nutrition and health status of children at a very early age, before entering schools and after. He also calls for strong community involvement to monitor and track pupils. Moreover, he underlines that, in an extended vision of universal access to education, school quality and school processes are intimately linked to the issue of access. If children are not learning something which is useful and meaningful for them, they will not want to stay in school.

The next sustainable development goals to be adopted in 2015 suggest for education: 'Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all' (Goal 4). The present book makes very useful suggestions which should help planners and decision-makers implement this goal. It should inspire planners in those numerous countries which have not succeeded in implementing universal primary education and are working toward an enlarged vision of access to basic education. The Editorial Board thanks the author, Keith Lewin, for this interesting, timely, and thought-provoking contribution.

Françoise Caillods (General Editor)
and Suzanne Grant Lewis (Director, IIEP)

Author's preface

Now is the time to learn from the past and, in particular, from the rich history of attempts to universalize access to education in low-income countries. This can tell us a good deal about how patterns of participation have evolved, and allow us to contrast these patterns with the changes envisaged by planners. Education systems must be understood as systems having many component parts which interact in broadly predictable ways. Educational reform is a process that depends on implementation strategies which involve factors including authority, accountability, infrastructure, resources, and consensus about purpose. Successful innovation also depends on an understanding of the motives and aspirations of both those who use educational services and those who provide the infrastructure that can create opportunities for learning.

It is now 25 years since the World Conference on Education for All, at Jomtien, which promised education for all. Yet, as many as 250 million children remain excluded from completing a full cycle of nine years of education successfully. For this reason, the new Sustainable Development Goals include a renewed commitment to universal access to learning through basic education.

This book opens new windows on how to make rights to education realities for all. It shows how participation has evolved and how different patterns of access shape the challenges of education and development in clusters of countries that are very different from each other. The patterns are a reminder that education systems have many interacting aspects, which means that simple linear models of change are often inadequate to understand and influence events in all but the short term. Education systems are best understood as open systems that interact with their environment and reflect the changing motives and aspirations of their participants. Ambitions to promote national development through the assurance of rights to education and investment – linked to knowledge and skills and international competitiveness – need to be grounded in an understanding that education is also a positional and private good that may be acquired for personal gain and individual social mobility.

Countries that can launch communications satellites have the resources and the capabilities to educate every child. Countries that spend more on the military than on education and have more soldiers than teachers need to realign their priorities. Development partners need to live up to their pledges that no country with a credible plan should fail to educate all its children for lack of resources. This time there can be no more excuses.

It is a particular pleasure to offer this contribution to IIEP-UNESCO's Fundamentals of Educational Planning series nearly 30 years after I wrote Fundamental No. 36, *Education in austerity: Options for planners.*

K.M. Lewin

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This monograph would not have been possible without the advice, assistance, and cooperation of many colleagues involved in educational planning in national ministries, universities, and development agencies. I am very appreciative of all those who have shared with me insights and data that have helped shaped the ideas presented in this work. Colleagues at the International Institute for Educational Planning, and more broadly within UNESCO, particularly those responsible for the Global Monitoring Report, have been very helpful. The UK Department for International Development, UNICEF, the World Bank, the Australian Department of Foreign Affairs and Trade (DFAT), and other agencies have also assisted in more ways than can be listed. Special thanks go to N.V. Varghese and Francoise Caillods, who commissioned this monograph, and to Suzanne Grant Lewis, who commented on the final draft. Benjamin Zeitlyn ably assisted in assembling material for the review of research. Angela Little commented on various drafts, shared many insights, and contributed some of the material in boxes in *Chapter III*. More generally, this book has benefitted from the many researchers involved in the Consortium for Research on Educational Access, Transitions and Equity (CREATE – www.create-rpc.org). Colleagues from many institutions have shared ideas and contributed to seminars related to this work. Special thanks go to many friends in BRAC in Dhaka, National University of Educational Planning and Administration (NUEPA) in Delhi, the Universities of Cape Coast and Winneba in Ghana, the University of the Witwatersrand, Johannesburg, and Beijing Normal University, and in the UK Forum for International Education and Training (UKFIET), the British Association for International and Comparative Education (BAICE), and the Comparative and International Education Society (CIES) of North America.

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List of abbreviations

ABL	activity-based learning
CREATE	Consortium for Research on Educational Access, Transitions and Equity
DFID	Department for International Development (UK)
DRC	Democratic Republic of the Congo
EFA	Education for All
EMIS	education management information system
GDP	gross domestic product
GER	gross enrolment rate
GIR	gross intake rate
GIRLG	gross intake rate to last grade
GMR	Global Monitoring Report
GPI	gender parity index
NER	net enrolment rate
PG	Papua New Guinea
SACMEQ	Southern and East African Consortium for Monitoring Educational Quality
SSA	sub-Saharan Africa
SSEA	South and South-East Asia
STP	Sao Tome and Principe
UPE	universal primary education

Introduction

The purpose of this monograph, published as part of the Fundamentals of Educational Planning series,[1] is to offer insight into the planning of universal access to basic education, understood to mean the completion of a full cycle of primary and lower secondary schooling. Access to education for all children has been a goal of UNESCO since the regional conferences on universal primary education in the early 1960s. It was reflected in the global commitments made at the 1990 Jomtien World Conference on Education for All and at the 2000 Dakar World Education Forum, at which governments made commitments to meet six Education for All goals. Despite considerable progress towards these goals, it is clear that Education for All remains unfinished business. As a result, commitments to universalize access to learning through basic education were renewed at the Global Education for All Meeting in Muscat in 2014. Most recently, the UN Sustainable Development Goals have reasserted the central importance of investment in education for development, and include goals and indicators designed to ensure that every child has their right to education realized (UN Sustainable Development Network, 2015; Lewin, 2015*b*). By analysing the experience of the past two decades we can identify the main challenges that remain in providing opportunities for all children to learn, and provide a basis for improving planning.

This monograph outlines the key concepts for planning the development of basic education, and draws attention to different types of exclusion, using an expanded vision of access. This vision includes learning access as well as physical access, and recognizes the need to plan on both the supply and the demand side. Analysis of progress in sub-Saharan Africa and South Asia over the last decade highlights changing patterns of participation and helps us identify clusters of countries that can be grouped in terms of the challenges they face. A

1. This monograph draws on the work of the Consortium for Research on Educational Access, Transitions and Equity (CREATE), which was financed by the UK Department for International Development. The research products of CREATE are available for free from: www.create-rpc.org

new generation of plans is needed to guide investment and resource allocation, mobilize political will, and attract external assistance where necessary. Planning needs to be comprehensive and plausible, and lead to gains that are sustainable. The Dakar 2000 commitment that no country with a credible plan should fail to universalize basic education because of a lack of resources must be accompanied by the codicil that every country must have a coherent plan built on its progress since 2000 which is financially, pedagogically, socially, and politically sustainable. The aim of this work is to develop an agenda for planning which can be used by all those who share these aspirations.

Rationale

Access to basic education is at the heart of development. Lack of education, and of the knowledge and skills it can develop, is part of what it means to be poor. Education can make an important contribution to reducing the numbers of households surviving on less than a dollar a day. Its impacts are wide-ranging. Sustained access to meaningful, useful learning is critical to long-term improvements in productivity, the reduction of inter-generational poverty, demographic transition, preventive health care, the empowerment of women, and reductions in inequality. Yet, more than a quarter of a century after the World Conference on Education for All in Jomtien in 1990, millions of primary-age children remain out of school and millions more children aged under 15 years are missing from lower secondary schools.

Knowledge and skills are not, by themselves, sufficient to assure development that improves people's well-being and enhances their livelihoods. How societies organize themselves and the way in which they allocate resources are a central part of any development story. For the educational planner, however, it is participation in education that leads to increased knowledge and skill, as well as enhanced non-cognitive outcomes, and these are at the core of the national development enterprise. The goals, objectives, targets, and indicators that shape our planning mediate the process through which aspirations become activities, programmes are designed, implemented, and sustained, and rights to education are realized.

Universal access to basic education is far from being achieved in many parts of sub-Saharan Africa and South Asia, and in many areas of countries with low and middle-level enrolments, especially in fragile states with weak governance and infrastructure. There are still countries and communities where less than half of school-age children complete primary school, and less than a quarter complete lower secondary successfully. Household poverty remains the most common correlate of exclusion, though gender, disability, HIV status, social group affiliation, location and many other forms of exclusion remain significant, often interacting with poverty to create multiple deprivations that demand integrated responses. Many of the children who are enrolled are effectively excluded as a result of irregular attendance, low achievement, over-age progression, and drop out before completion of full basic education. These 'silently excluded' children are disproportionately poor, more likely to have compromised health and nutrition, and predominantly located in fragile and displaced communities (Lewin, 2007*a*). In some countries they are also more likely to be female.

Some 60 million children of primary school age are not in school, according to survey data (UNESCO, 2014). Most are in sub-Saharan Africa and South Asia. Encouragingly, though, enrolment rates in primary schools in both regions have improved. The estimated number of children out of school in sub-Saharan Africa fell from 42 million to 31 million in the first decade after the Dakar conference. Over the same period, the number estimated to be out of school in South Asia fell from 37 million to 18 million. Gross enrolment rates now average 101 per cent across sub-Saharan Africa and 106 per cent in South Asia, an apparent anomaly explained by the enrolment of over-age pupils. Net enrolment rates, which exclude the over-age, paint a different picture. These average 78 per cent in sub-Saharan Africa, meaning that almost a quarter of primary school age children in the region are out of school, and 89 per cent in South Asia.

Girls are participating much more than in the past. On average, for every 100 boys enrolled in the age group there are 95 girls enrolled in sub-Saharan Africa and 98 in South Asia. Some countries, however, are making slow progress. There are places where boys in school outnumber girls by 20 per cent. Having more boys than girls in school is strongly associated with low overall enrolment

rates, high rates of repetition, and the presence of large numbers of over-age children in school. Most countries with middling or higher enrolment have more girls than boys enrolled, especially at higher levels of education.

Exclusion is a much greater problem at secondary-school level. In many of the poorest countries more than half of all children fail to enrol at secondary school. Of those who do, fewer than half will complete a full cycle of secondary schooling and qualify for further education and training. Those who succeed will, overwhelmingly, be from richer households. The chances of children from the poorest 20 per cent of households completing secondary school can be as small as a tenth that of the richest. And if there are gender gaps in participation in primary schooling, they are almost always larger at secondary level.

The gap between low-enrolment countries and those that are improving rapidly has widened. In China almost all children are enrolled in lower secondary school, and most participate to Grade 12. In the southern Indian states, most children reach at least Grade 10. However, this is not the case in the northern states where more than half fail to enter lower secondary school. Africa is dramatically under-educated at secondary level compared with all other regions, with gross enrolment rates below 50 per cent in lower secondary. Economic growth, which underpins governments' ability to make universal access to education a reality, depends on the knowledge and skill that post-primary schooling can nurture. Foreign direct investment more often than not flows towards more educated populations.

In reality, there are far more than 60 million primary-age children whose right to basic education is denied (Lewin, 2009; UNESCO, 2014). Many fail to attend regularly or are over-age, while large numbers do not achieve basic skills even after six or more years of schooling. If these *silently excluded* children are included, the numbers without meaningful access to primary schooling surpass 250 million. Moreover, if the basic education cycle includes lower secondary, as is the case in most countries, this number itself becomes a substantial underestimate of the number of children whose right to

education is compromised because they do not successfully complete a full cycle of basic education by the age of 16.

Children who never attend school are now a minority of all those out of school below the age of 16, though they may still be in the majority in some of the most fragile states with the lowest enrolment rates. It is clear that children who do not enrol by the age of 10 are unlikely to enrol at all and, if they do, are very unlikely to reach secondary school, especially if they are girls. Late entry to school and age-in-grade slippage are so common that a third or more children in low-enrolment countries are more than two years over-age for the grade they attend. None of the countries that have succeeded in universalizing access up to the age of 16 has large numbers of over-age children in the system. Those that have failed to do so tend to have many over-age children enrolled. These children often drop out of school before completion, in many cases when they are still below the legal age of work. Children of school age who are out of school are both drop-outs and push-outs. Supply-side interventions need to be accompanied by actions on the demand side, especially for older children where opportunities to work may encourage drop-out.

Physical infrastructure remains insufficient to provide a secure, healthy, and appropriate learning environment for children in many countries across sub-Saharan Africa and South Asia. Learning materials, central to the achievement of educational outcomes, vary widely in terms of both availability and quality. Teacher supply and deployment are often inefficient and compromise the provision of effective and equitable access at sustainable costs. The constraints and opportunities that impact on strategies to finance adequate numbers of qualified teachers are often poorly articulated with the political economy of public-sector employment. Nevertheless, universal access to primary and lower secondary education is available at costs that can be afforded in low-income countries. This is evidenced, for example, by the fact that gross domestic product (GDP) per capita is not strongly correlated with enrolment rates at primary level. The differences in participation and learning between high- and low-enrolment systems have to be understood as signposts of more and less effective practices, especially in relation to managing learning, deploying teachers, and addressing inequalities.

Governments and development agencies have repeatedly fallen short of ensuring that all children complete schooling successfully (Bown, 2009). This is a tragedy. It betrays the promises made to young adults when they were children. If all children are to attend school regularly, at the right ages, and reach the required levels of achievement, new targets and strategies are needed to plan the next generation of educational investment. There is no good reason why all children cannot attend and complete basic education successfully. If this does not happen it will testify to the failure of one generation of adults to plan for the future of the next.

Most of what must be done in order to universalize access is understood, but it is often not applied in practice. The most powerful reasons why so many children miss out on their right to a basic education lie in the failure of commitments to widen access to opportunity, mobilize domestic resources, and manage public services effectively towards clear goals. Long-term planning with reasonable goals, achievable targets, and appropriate indicators is at the heart of planning that succeeds in guiding efficient resource allocation and informing evidence-based policy.

The rational problem-solving cycle of educational planning remains compelling. It demands systematic diagnosis of needs and their causal precursors, the identification of goals, the creation of dynamic links between goals, objectives, targets, and indicators, the articulation of planned pathways to achieve objectives, the design of viable implementation strategies, the allocation of adequate resources, and the monitoring and evaluation of progress as a result of which plans can be revised. This *Fundamental* offers new insights as to how patterns of access to basic education have been evolving and draws out lessons that can be applied to the planning process.

Organization of the monograph

This monograph has six chapters. *Chapter I* introduces key concepts useful in elaborating plans to universalize access to education. This includes a description of a model of zones of exclusion that need to be addressed by comprehensive and credible plans. The zones of exclusion vary by educational level. They may also be different for different social groups at the same educational level. Planning

must recognize this diversity. Expanded definitions of access to basic education are discussed along with the factors that determine access. Zones of exclusion are mapped using country-level data.

Chapter II is focused on changing patterns of access to basic education in sub-Saharan Africa and South and South-East Asia, the two regions with the largest numbers of out-of-school children and the furthest distance to travel to universalize basic education. The chapter maps the status of participation in terms of enrolment rates, gender parity, and age in grade. This is used to develop a fourfold taxonomy that distinguishes different patterns of initial enrolment and flows of students through to Grade 12. The analysis highlights the importance of starting points for new efforts to achieve goals, and the need to match judgements of what ought to be achieved with what is achievable based on the lessons of the past.

Chapter III summarizes recent research findings on access, transitions, and equity arising from a large-scale programme of research in countries in sub-Saharan Africa and South Asia. This review identifies key findings on issues that will shape future planning to improve meaningful access to education through to the end of lower secondary school. It is illustrative of the thematic concerns that preoccupy planners charged with developing credible plans across different zones of exclusion.

Chapter IV explores the setting of goals, objectives, targets, and indicators. The chapter first considers the development of goals, objectives, targets, and indicators. It then provides a critique of the strengths and weaknesses of two indicators – enrolment rates and gender parity indices – to illustrate more general considerations. These are consolidated in a checklist for the development of better targets and indicators.

Chapter V explores the characteristics of long-term planning. The first section discusses three different approaches to planning. A rationale for long-term planning at national level is then developed and illustrated with examples of the insights it can provide drawn from three countries. The process of developing long-term plans is then described.

Chapter VI presents a structured agenda for planning basic education that identifies 12 domains that need to be considered in any comprehensive and credible plan. Its purpose is to provide an *aide memoire* of manageable simplicity which can be adapted to different national contexts and adjusted to new aspirations for educational goals, objectives, and targets, and their associated indicators.

I. Conceptualizing access and zones of educational exclusion

Introduction

This chapter introduces a number of key concepts useful in developing plans to universalize access to education. Following a brief introduction to different ways of conceptualizing access to education, a model is presented representing educational access in terms of flows of students enrolled at different grades. The chapter identifies seven zones of exclusion for school-age children, before developing an expanded vision of access, including: on-schedule enrolment and progression at an appropriate age, regular attendance, learning consistent with national achievement norms, a learning environment that is safe enough to allow learning to take place, and opportunities to learn that are equitably distributed. Some examples of how zones of exclusion may be profiled in four countries are provided before a summary is offered of the significance of the models.

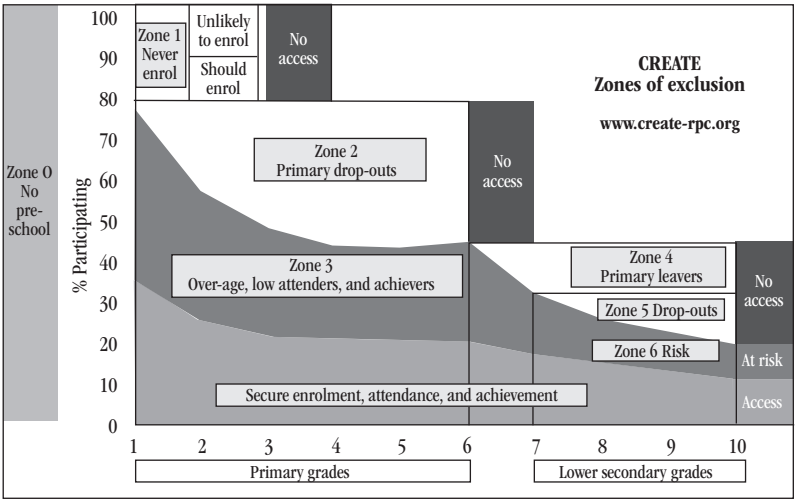
Conceptualizing access to education

There are many different ways of conceptualizing access to education, depending on the dimensions that are used. One model, which is used by several development agencies, identifies zones of exclusion from education, linked to a map of enrolments organized by grade (Lewin, 2011*a*). In each of the zones the patterns and causes of exclusion are likely to be different. They may also differ from community to community. This simple model charts participation by grade and identifies, by school age, different groups of children who are failing to sustain access to basic education.

Figure 1.1 is a generic chart identifying the different zones. Grade level is displayed along the x-axis. The y-axis shows the percentage of the age group participating at that grade level, offering, in effect, a grade-specific enrolment rate. This education system simulated in the chart enrols about 80 per cent of children at Grade 1, meaning that

20 per cent remain unenrolled.[2] Between Grade 1 and Grade 6, large numbers of children drop out, to the extent that only about 45 per cent remain enrolled by Grade 6. The slight rise in the enrolment curve can be explained by the use of selection examinations which cause the repetition rate to rise in the final grade of primary school. In this model of a low-enrolment education system, the number of drop-outs is larger than the number of children who never enrol at primary. There is also more drop-out between the last grade of primary and the first grade of lower secondary, as well as during the secondary grades. By the end of Grade 10, in this system, only 25 per cent of the age group are left enrolled.

Figure 1.1 Zones of exclusion



Source: Adapted from Lewin, 2007*a*.

Among those officially enrolled at primary and secondary level, there will be many who are not attending regularly, who are seriously over-age for their grade, or whose level of achievement puts them at risk of drop-out. These children can be called 'silently excluded'

2. The parameters chosen for the generic model are similar to those in countries with low enrolment and completion rates.

since they do not appear in statistics of those formally out of school. Below Grade 1 most countries now have some commitment to extend access to pre-school. This can involve many different definitions and methods of service delivery. If these can be defined then levels of participation can be identified and charted.

Zone 0 refers to those children who have no access to pre-school. Data on pre-school participation are very uneven and incomplete. It is often unclear which children participate and under what conditions. Much pre-school is provided privately for a fee, and access is, therefore, rationed by price. Nevertheless, participation is important since the advantages of early learning are reflected in subsequent progress, and it is probable that those who attend pre-school enter primary school on schedule rather than enrol late. As access to pre-school becomes more widespread, analysis of the needs and circumstances of children in Zone 1 will need to be extended to include pre-school age children.

Zone 1 covers those who will never enrol. The expansion of formal schooling can capture a proportion of these children, but probably not all. Many are likely to be in circumstances that make it impossible for them to access a conventional school system (for example, children from nomadic groups, children in rural areas with no schools in the locality, and those with a disability). Others may be located in areas where they can enrol in the conventional school system but face other kinds of barriers (such as extreme poverty, membership of an excluded social or ethnic group, illegal migrant status, and exclusion because of an association with HIV/AIDs).

The best solution for many of those excluded from Grade 1 is to develop and implement plans to extend the reach of the formal school system. This requires situated analysis of the causes of exclusion, and actions to increase access to the existing system, including the development of small schools and multi-grade pedagogies that can reach low-density populations at sustainable costs. Where analysis shows that some excluded groups need different modes of access to basic education than those provided by schools, these need to be identified, piloted, costed, and developed.

Zone 2 includes the great majority of children who are excluded. These are children who enter school but fail to complete

the educational cycle. Typically, drop-out is greatest during the early grades, with a substantial subsequent 'push-out' at the transition to secondary school. Precursors to drop-out include repetition, low achievement, poor teaching, degraded facilities, very large class sizes, household poverty, and poor health and nutrition. This zone includes disproportionate numbers of girls, HIV/AIDs orphans, and others in vulnerable circumstances. Those dropping out usually become permanently excluded, with no pathway back.

Within a restricted age group (for example, 6–11-year-olds), household survey data can show that a majority of those out of school never attended, at the same time as completion rates show that the majority drop out before completing the cycle. It is the number who do not complete the cycle that is important for development purposes rather than the number of out-of-school children within the nominal age range of school.

Zone 3 includes those children who are in school but at risk of dropping out. Children who remain formally enrolled in school may be silently excluded if their attendance is sporadic, if they are significantly over-age, if their achievement is so low that they cannot follow the curriculum, or if they are discriminated against for socio-cultural reasons. Nutritional deficiencies and sickness can compound these problems. Children who are enrolled and at risk may be on a pathway to exclusion that can be anticipated. If the precursors can be identified then interventions may be possible, interrupting the processes and events that lead to drop-out, and which may result in drop-out being irreversible.

Zone 4 includes children excluded from lower secondary school because they failed their selection examination, were unable to afford the costs, or dropped out before completion. This exclusion is important for a number of reasons. Transition rates into secondary school affect the demand for primary schooling, and primary teacher supply depends on secondary graduates. Gender equity at secondary is a universal commitment, and basic education in most countries extends to Grade 9 or 10. Access to secondary schooling gives poor households more chances of social mobility, as well as access to modern forms of employment with higher incomes than those to be had in the informal sector. Who goes to secondary school, and which secondary school they go to, is, increasingly, a critical question for

the political economy of social cohesion. It poses important question regarding the legitimacy of high-stakes selection examinations for access to further education and the labour market.

Zone 5 includes those who drop out of secondary grades before completion. It mirrors Zone 2 but with the different considerations that apply to young adults. The causal factors that influence drop-out at this level are more likely to include the opportunity costs of paid work, the rising cost of attending school, even in cases where tuition fees are not charged, issues surrounding puberty and early marriage, difficulties in coping with more demanding school work, and the challenges of curriculum relevance to well-being and livelihood.

Zone 6 mirrors Zone 3 and includes those whose attendance, age, achievement level, and motivation put them at risk of drop-out before completion. These children are young adults approaching the end of compulsory school attendance and the legal age for work. The factors that impact on their learning and silent exclusion from completing lower secondary school are different from those affecting primary-age children. Older children have the agency to make choices, and the right to have their preferences and aspirations respected.

Exclusion from basic education has a range of causes that require different levels of analysis. Zones of exclusion provide one way of mapping how children flow through school systems and when and where they are excluded. Another useful approach is to identify different units of analysis and explore the factors responsible for exclusion from basic education. Some of these factors will be under the control of ministries of education. Others will not. Any planning process has to be clear about the where the locus of control lies. This is essential in understanding how the various influences on participation in learning interact. We understand what factors can be controlled and how in order to direct resources towards interventions which are cost effective. Factors which are very difficult or costly to change, and those which lie beyond the locus of responsibility of particular ministries and other stakeholders, need to be identified and accommodated in any strategic plans.

Box 1.1 Zones of exclusion

Zone 0 captures those excluded from pre-school.

Zone 1 comprises children who never attend school. It includes those who could attend existing schools but do not, and those who are excluded by factors such as livelihood, location, civil status, disability, social stigma, and other vulnerabilities.

Zone 2 includes the majority of children who are excluded after initial entry, who drop out of school and fail to complete a full cycle. In an increasing number of countries this is the largest group of out-of-school children.

Zone 3 comprises those in school but at risk of dropping out, most obviously as a result of low achievement and poor attendance. These children can be described as 'silently excluded' since they are enrolled but may learn little, attend irregularly, and/or be over-age.

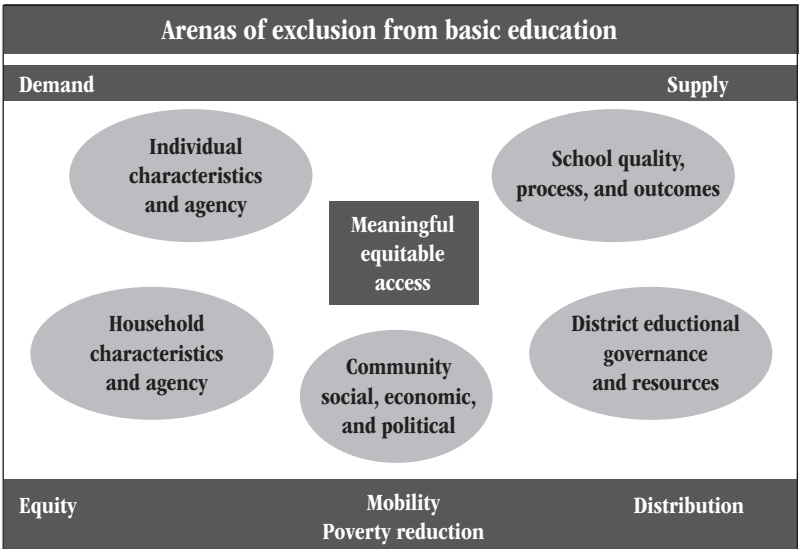
Zone 4 includes those who fail to progress to secondary education because they fail selection examinations, are unable to afford the costs, are located far from a secondary school, or are otherwise excluded.

Zone 5 comprises those who drop out of secondary grades.

Zone 6 includes those at risk of dropping out of secondary school.

The factors associated with meaningful and equitable access to basic education fall into five arenas, located at different levels of analysis (see *Figure 1.2*). A simple model includes individual and household characteristics, community-level attributes, such as livelihood and social preferences and practices, school-level attributes, and aspects of local and national educational administration and resourcing. These interact to shape meaningful and equitable access. School quality, process and outcomes, and district-level educational governance and resource allocation are core concerns of educational planning systems. Whatever actions are initiated and sustained in relation to these two arenas will interact with individual, household, and community-level factors which also help shape meaningful and equitable access.

Figure 1.2 Model of meaningful and equitable access



Source: Adapted from Lewin, 2007*a*.

Educational access is a problem in terms of both the supply and the demand side of provision. Educational planning has tended to concentrate on supply-side inputs rather than demand-side management, not least because the supply side is much easier for governments to plan and manage. Where infrastructure is weak, buildings and classrooms inadequate or unavailable, learning materials in short supply, and teacher qualifications low this is both necessary and desirable. Systematically planned inputs are essential to the kind of managed growth that anticipates where schools and teachers are needed and ensures that the availability of learning materials keeps pace with the numbers of children enrolled.

However, access issues can also arise when problems on the supply side lead to failing demand, especially among older children and in communities where the opportunity costs of school attendance are high, school quality is low, and relevance is perceived to be problematic. These problems are more difficult to manage. Participation in basic education may stall if no steps are taken to

monitor changing patterns of demand and to respond to the signals these send to manage supply more effectively.

An expanded vision of access

An expanded vision of access is needed, which goes beyond the narrow indicators of participation given by school enrolment rates (Lewin, 2011*b*). This has to include judgements of both educational quality and process (the resources to which children have access) and educational outcomes (what competencies and capabilities are acquired and how they are valued). An expanded vision must be interpreted in relation to national and sub-national contexts. These contexts determine the starting points for programmes to improve access, identify the nature of excluded groups, mobilize the resources available, and shape the policy environment and possibilities for action. How this is best done depends on the specific system and the barriers to participation and learning it faces. However the vision varies from country to country, it needs to be made explicit in order to generate consensus around its goals and objectives.

Box 1.2 The expanded vision of access

Children:

- enrol in the year in which they become 6 years old;
- progress over the next six years with no more than one repetition and remain within one year of the nominal age for the grade;
- attend for at least 90 per cent of the teaching days available;
- move into lower secondary school and complete nine years of schooling;
- learn in classes of no more than 40 pupils, in schools with clean water, sanitation, basic services, light, heat and ventilation, and adequate learning materials;
- are taught by trained teachers who are present in class at least 95 per cent of the teaching days available with pupil/teacher ratios of 40:1 or less;
- achieve at levels within two years of the norm for their grade;
- have equitable access to affordable schools located within 30 minutes travel of households at primary level and 60 minutes at secondary level.

An expanded vision of access requires an understanding of different zones of exclusion, as well as the characteristics of the children within each zone. It must also be sensitive to the importance of entry into school at 6 years (or the national norm, if it differs), and of age-appropriate progression, including from primary school at about 12 years old and lower secondary school at around 15. National curricula are usually planned on the assumption that every child and every teacher is present on every school day. The reality can be very different, with consequences for learning and for its perceived relevance. Children who do not attend school regularly miss out on a great deal, particularly in subjects such as mathematics in which learning is cumulative. This can make it difficult to keep pace with the demands of the curriculum.

The expanded vision of access includes universal access up to the end of lower secondary school. In many countries this coincides with the minimum age of work below which formal employment would be regarded as child labour. The International Labour Organization has adopted 15 years as the lower limit for full-time work. Most countries already include lower secondary school in their commitments to basic education. Almost all will by 2020. This is essential if we are to achieve universal completion of primary schooling and maintain the motivation and commitment of children in the upper-primary grades.

At both primary and secondary levels the conditions under which children learn must be part of any worthwhile definition of access. Learning spaces have to be fit for purpose, with adequate facilities, appropriate to the climate and location. But it is not only about the facilities. Access also depends on being taught by trained, motivated, and committed teachers in reasonable class sizes, with appropriate learning materials.

Access to education has little meaning unless it results in pupils gaining the knowledge and skills national curricula stipulate. Since children vary in capability and disposition, their levels of achievement will vary too. National norms for the minimum level of achievement expected at different levels exist in many countries. If they do not, they should be developed. They can then be used to identify whether patterns of achievement are adequate. Children more than two years away from the norm for their grade are likely to lose meaningful

access to the curriculum. Where the quality of learning and teaching varies widely, and where it is rationed by price or by other factors that constrain access, it is important to ensure that improvements in access to education are equitable and do not increase learning opportunity for some at the expense of others. Enhanced equity is an essential condition of an expanded vision of access.

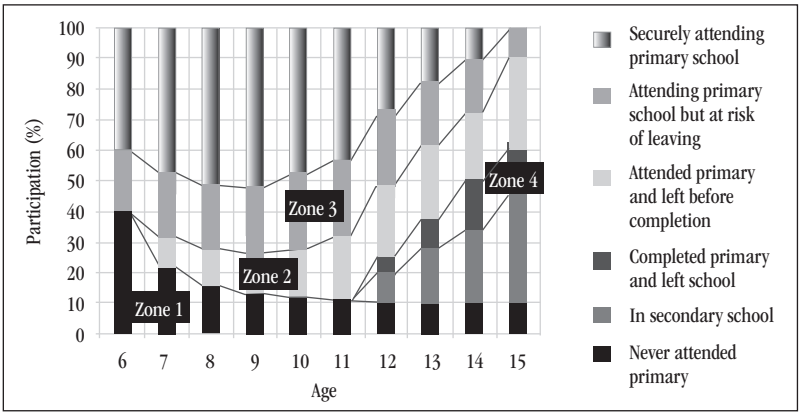
Planners often overlook the significance of age in relation to enrolment, progression, and levels of achievement, and neglect the curricular and pedagogical problems that arise when teaching groups include children with a wide range of ages. This may be because the literature on planning has developed in high-enrolment countries where age-in-grade slippage is no longer an issue. Curricula in these countries are frequently designed for a single-grade learning environment where all children in the same grade are of the same age.

In sub-Saharan Africa and parts of South and South-East Asia many children are over-age for the grades they attend. In some poor areas more than half of children are at least two years over-age. In rural parts of some African countries, where the birthdates of many children are unknown, it is common to assess school readiness by the height of a child, without reference to their chronological age. In some of these countries 30 per cent or more of children are clinically stunted, almost guaranteeing late enrolment. Repetition of grades is endemic in systems which have low completion rates, and this exacerbates the numbers of over-age children in the system. Girls are especially disadvantaged by being over-age. None of the systems which have universalized completion of basic education has a wide range of ages in each grade.

School participation by age can be illustrated with data from household surveys. *Figure 1.3* shows how participation can change with age. This can be linked to the zones of exclusion discussed above. *Figure 1.3* indicates that in the system described, which is based on data from Ghana, about 40 per cent of 6-year-olds are not in school, falling to about 10 per cent by the age of 10 years. Above this age, those who have not enrolled are unlikely ever to enrol (Zone 1). From the age of 7, some children who have entered drop out, and the number of drop-outs gradually increases with age. These drop-outs

form the largest number of out-of-school children over 11 years old and fall into Zone 2 of the model. Children who enrol but are at risk of drop-out, because of low attendance, or because they are over-age, repeating years, or achieving poorly, fall into Zone 3. They gradually become a larger proportion of those still enrolled in primary grades who are above the age of 11 years. Many make the transition into secondary school from the age of 12 years and above. However, if they fail to do enter secondary school by the age of 15 years it becomes increasingly unlikely that they will make the transition to lower secondary school successfully.

Figure 1.3 Age and zones of exclusion



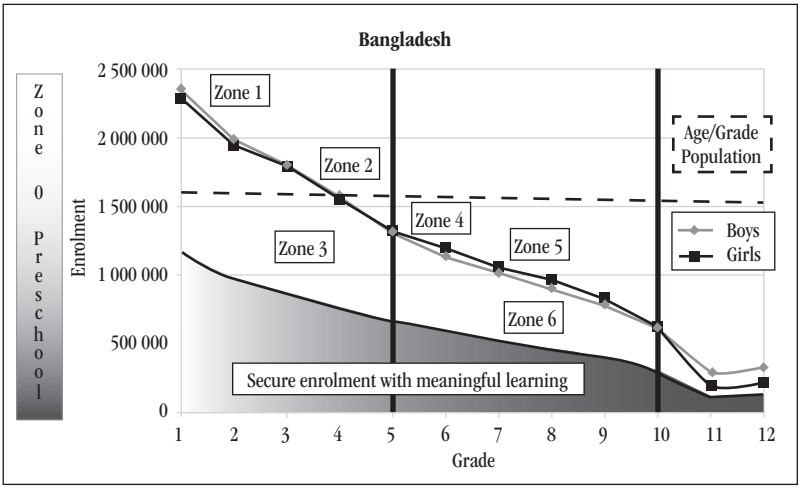
Source: Author.

Zones of exclusion in four countries

The zones of exclusion model can be applied in many different ways and at different levels of an education system. *Figures 1.4a, 1.4b, 1.4c, and 1.4d* give an illustration of how the model can be used to identify starting points and key issues.[3]

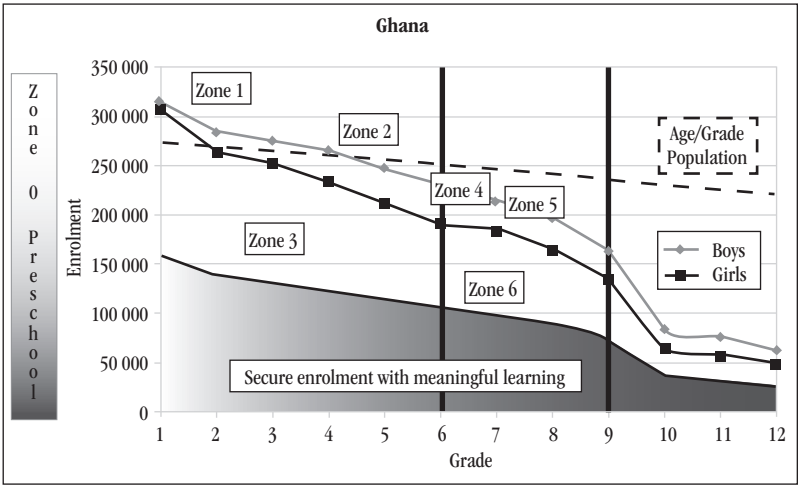
3. There is no reliable cross-national data on exclusion from Zone 0.

Figure 1.4a Zones of exclusion, Bangladesh



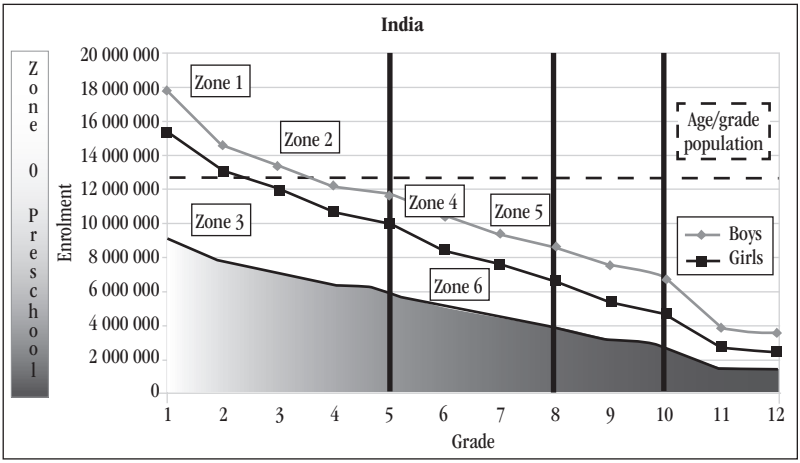
Source: UIS, 2012.

Figure 1.4b Zones of exclusion, Ghana



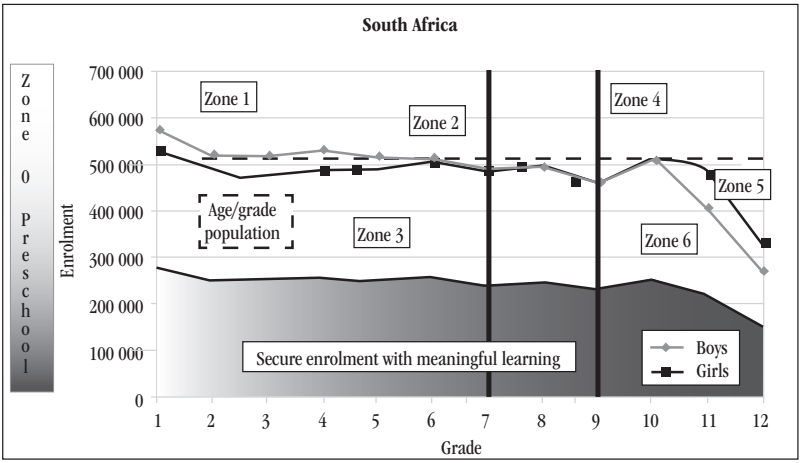
Source: UIS, 2012.

Figure 1.4c Zones of exclusion, India



Source: UIS, 2012.

Figure 1.4d Zones of exclusion, South Africa



Source: UIS, 2012.

In **Bangladesh** there are more children enrolled in Grades 1–3 than there are, in total, in the relevant age group. This is indicative of over-age, and in some cases under-age, enrolment, and of repetition of grades. Enrolment in Grade 1 is consistently about 30 per cent more than it would be if all 6-year-olds entered school on schedule and none repeated. Above Grade 4 there are fewer children enrolled than there are in the age group. Currently, there are about the same number of girls as boys enrolled. A decade ago there was a significant gender gap. Progress since then has been substantial. Bangladesh has a short primary system of five grades. Its gross enrolment rate is above 100 per cent. However, only 50 per cent of children enter secondary school at Grade 6 and only 15 per cent or so reach Grades 11 and 12 (Ahmed, 2012).

The zonal chart for **India**[4] shows that, at national level, despite the gains achieved under India's large-scale programme to universalize access up to Grade 8, some issues remain. Less than 65 per cent of children, on average, complete Grade 5 and no more than 45 per cent enter Grade 9. Above Grade 3, there are fewer enrolled than there are in the age cohort. Furthermore, there is a large difference in enrolments between boys and girls. The gap widens up to Grade 10, though, above this, girls drop out less often than boys (Govinda, 2012). It should be noted that there are fewer girls than boys in the population. In some parts of certain states various forms of gendered foeticide and migration result in sex ratios as low as 80:100. The all-India chart conceals significant differences in enrolment patterns between states, especially the low-enrolment northern states and those in the south where most children attend secondary school (Lewin, 2011*b*).

In **Ghana** there are more children enrolled in the first three grades of primary school than there are, in total, in the age group. Though nearly equal numbers of boys and girls enter Grade 1, girls drop out faster up to Grade 6. However, if they enter junior secondary school they tend to drop out less than boys (Akyeampong *et al.*, 2011. Above Grade 9, when senior-secondary school starts, there is rapid attrition as the costs to households rise and schools become selective.

4. India's diversity and size mean that the model of exclusion is better applied at state level or below. This is not practical in this book.

By Grade 9 about half the age group is enrolled. But no more than 20 per cent complete senior secondary successfully. At higher levels, educational access is highly concentrated. About 75 per cent of all university entrants originate from only 20 per cent of secondary schools. Most have attended fee-paying, high-cost private schools up to Grade 9. Thus, in Ghana, access is inequitably distributed and quality varies widely (Rolleston, 2011).

South Africa has almost full enrolment among the school-age cohort. From Grade 1 to 9 there are as many, or more, children enrolled as there are in the age group. Above Grade 9 there are more girls than boys enrolled, which is the case in several other southern African countries. Attrition accelerates above Grade 9 and many drop out before completing Grade 12. Below this level, progression has been unhampered by selection examinations that block the progression of low achievers. Though enrolment is high, achievement is often low (Motala *et al.*, 2013).

In all four countries, fewer than 10 per cent of all children never enrol in school. The real figure may well be less than 5 per cent. Most children aged between 5 and 15 years old claim to be enrolled. Those in Zone 2 (drop-outs) represent the greatest number of children out of school, if the calculation includes all those in a cohort who fail to complete a full cycle of basic education at any age. In three of the countries, more than half the children are no longer in school by Grade 9.

Children included in Zone 3 are enrolled in primary school but are judged to be at risk of dropping out. This is signified by low attendance (less than 90 per cent of school time), over-age attendance (by two years or more), and low achievement (two years or more behind). In South Africa many children do not attend regularly, and over a third are over-age by two years or more in Grade 4. Levels of achievement are also problematic, with more than half of pupils at least two years behind by Grade 6 (Gilmour and Soudien, 2009; Taylor *et al.*, 2010). In case-study schools in Madhya Pradesh, in India, an average of 35 per cent of students were not in school on the day of field visits, and many were over-age (Govinda and Bandyopadhyay, 2011). In low-enrolment rural areas of Ghana, the majority of children in schools are over-age by two years or more

(Rolleston, 2011). In Bangladesh, in the rural primary schools surveyed, about half of all students in Grades 1–5 were two years or more over-age (Zeitlyn and Hossain, 2011). Indications of poor attendance, over-age progression, and low achievement are endemic in samples of schools and communities drawn from low-enrolment countries, with consequences for drop-out and completion.

Zone 4 includes children who fail to make the transition from primary to lower secondary. Transition rates from primary to secondary in all four countries are over 80 per cent. However, in all cases other than South Africa, so much drop-out has already taken place during primary school that no more than 50 per cent enter secondary school. Transition to secondary school often involves travel and additional costs, which are disincentives to continue (Siddhu, 2010). Drop-out from secondary school (Zone 5) can be an important issue. Low achievement and rising opportunity costs linked to paid employment can lead to drop-out before completion. The poor learning achievement of those enrolled in secondary school (Zone 6) is another significant issue, especially where there are no standardized assessments to inform national monitoring of standards.

Concluding remarks

This chapter has introduced some of the ideas that inform policy dialogue on planning for the expansion of access to basic education. The zonal model of exclusion has been elaborated in several ways. It can be extended and populated with data that differentiate girls and boys, urban and rural children, children in different regions, and those from different social groups. The model is a reminder that flows of children and loss of access to education are far from linear. Drop-out is often greatest in the earliest grades. Patterns of exclusion for boys and girls may differ substantially. If there are selection examinations between primary and lower secondary, or between lower secondary and upper secondary school, these often generate step changes in levels of participation.

The zonal model can also be used with data on household income and expenditure so that the chances of progressing through education for different quintiles of household wealth can be compared. There are also opportunities to explore data on transitions across thresholds,

for example, from enrolment to unenrolment, or moving from Zone 3 to Zone 2, or from Zone 6 to Zone 5. These transitions towards permanent drop-out may be fast or slow, permanent or temporary, reversible or irreversible, associated with single events within a household, or linked to systemic processes such as seasonality and migration.

The zonal model is linked to the idea of an expanded vision of access, which reminds planners that simply increasing capacity to enrol children falls far short of providing universal access to meaningful and equitably distributed learning. Too many countries claim that high enrolment rates equate to success in universalizing access when, in fact, overall enrolment rates conceal low rates of completion and very unsatisfactory levels of achievement. An expanded vision links participation to quality, relevance, and outcomes that are useful and contribute to greater equity.

The next chapter explores how patterns of access to basic education in sub-Saharan Africa and South and South-East Asia have been changing. This aggregated analysis identifies clusters of countries with different patterns of participation and highlights key issues for planners. Educational planners in different countries can deploy the concepts introduced in this chapter to refine diagnosis of the problems associated with universalizing basic education and develop the tools needed to plan to realize universal rights to basic education.

II. Changing patterns of access to basic education, sub-Saharan Africa and South and South-East Asia

Introduction

Long-term planning must be grounded in the realities of current system performance if it is to be based on sound estimates as to the financial and non-financial resources that will be needed in the future. This chapter analyses patterns of enrolment across a range of countries in sub-Saharan Africa (SSA) and in South and South-East Asia (SSEA). The data show how participation has been changing and highlight variations between countries related to gender and age in grade.[5] This analysis leads to the development of a taxonomy that identifies four groups of countries, differentiated by their progress towards the goals of universal access to primary and lower secondary schooling. The taxonomy is a reminder that planning needs to be based on the achievements of the past and insights from the evolution of each system, as well as current status. These determine starting points for future policy, indicate how much progress towards goals has taken place, and indicate gaps between current achievements and future goals.

Patterns of participation in sub-Saharan Africa

Enrolments

Sub-Saharan Africa includes many of the countries with the lowest enrolment rates and the greatest challenges when it comes to universalizing basic education. Though some of the countries do have almost all children in school, most of those that do are small states with well above average incomes, such as Seychelles, Mauritius, and Botswana. At the other extreme, there are a significant number of

5. This chapter summarizes patterns of enrolment across countries. Individual country data charting the evolution of patterns of participation can be found at www.create-rpc.org

fragile states and countries emerging from conflict which have low enrolment and completion rates and are rebuilding their education systems: for example, South Sudan, Congo, and Mali. Some countries have made consistent progress over the last two decades and others have reached a plateau of enrolment growth. Most out-of-school children are concentrated in the largest countries, including the Democratic Republic of the Congo (DRC), Ethiopia, and Nigeria, and the poorest, such as Burkina Faso and Niger.

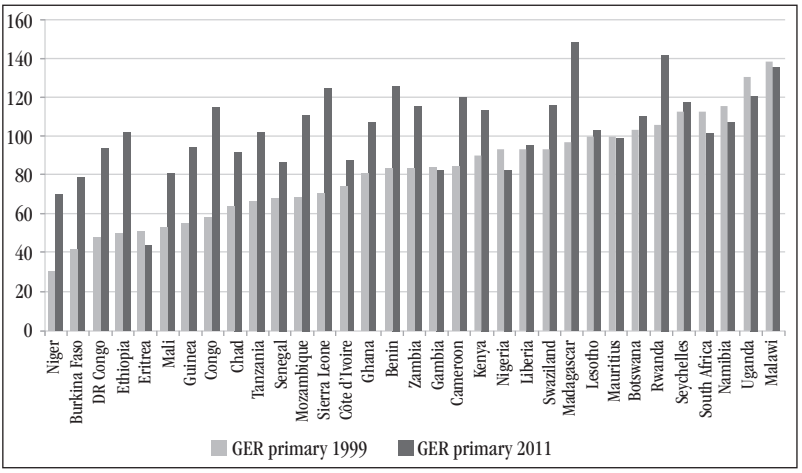
There have been significant increases in gross enrolment rates (GER) at primary level in SSA since 2000. On average, these climbed from 80 per cent in 2000 to 105 per cent in 2011. Most of the growth took place before 2006, after which GERs reached a plateau. Data on net enrolment rates (NERs) show that NERs also steadily increased until around 2007, when they too plateaued. At primary level, the NER increased from 60 per cent in 2000 to 76 per cent in 2011. This suggests that, on average, more than a third of children fail to reach the end of primary school on schedule. GERs and NERs at lower secondary level are much lower than at primary. The GER for lower secondary in SSA rose from around 28 per cent in 2000 to over 45 per cent in 2011. NERs increased from 20 per cent to close to 35 per cent at lower secondary. This implies that, on average, around 25 per cent of an age cohort succeed in completing lower secondary.

Figure 2.1 shows the GERs at two points in time, 1999 and 2011, and illustrates that in the majority of countries in SSA substantial increases have occurred. About half the countries in the dataset have GERs of more than 100 per cent, indicating that they are providing school places for larger numbers of children than there are in the primary-school age group. In a few cases those countries with GERs of over 100 per cent have seen a decline. The most common reason for this is reductions in over-age enrolment following periods of rapid expansion. Much over-enrolment takes place in the lower grades, especially Grade 1 where there are often more children enrolled than there are 6-year-olds in the population.

GERs at primary and lower secondary level are not correlated in SSA. Often, the countries with the highest primary GERs also have very high drop-out rates and low participation at lower secondary. Differences in enrolment rates at primary and secondary level are

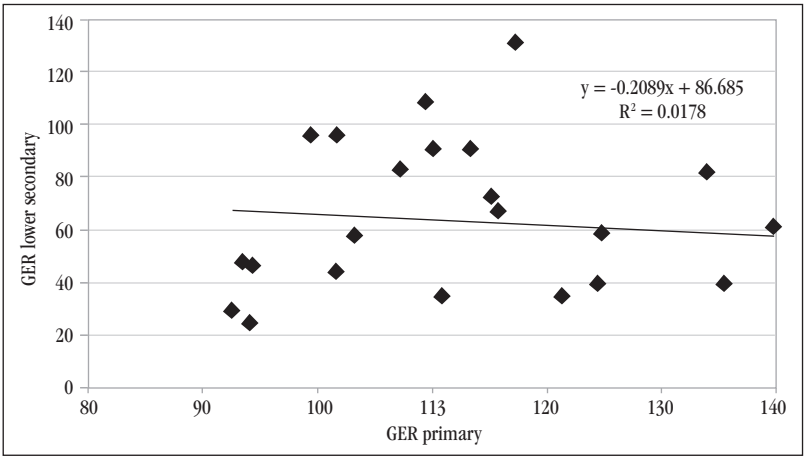
shown in *Figure 2.2* and illustrate the lack of a consistent pattern of association.

Figure 2.1 GERs at primary, 1999 and 2011, sub-Saharan Africa



Source: UIS, 2012.

Figure 2.2 GERs at primary and lower secondary, sub-Saharan Africa



Source: UIS, 2012.

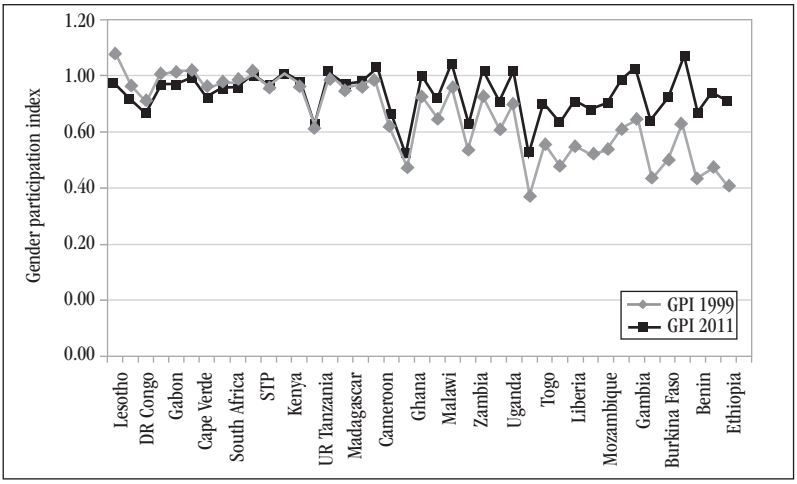
Gender

Universal access to basic education implies that all boys and girls will be able to complete a full cycle of education successfully. Most countries have now committed to achieving gender equity in education as part of their progress towards universalizing enrolments. The gender parity index (GPI) is the ratio of the GER for girls to that of boys. The GPI at primary level has increased from 0.87 in 1999 to 0.95 in 2011 and from 0.81 to 0.85 at lower secondary. The difference in the average enrolment rates of girls and boys at primary level was more than 12 percentage points in favour of boys in 1999, but is now less than 5 per cent in favour of boys. Gaps between girls and boys in NERs are smaller than those for GERs because boys persist longer in many school systems and differences in enrolments come, disproportionately, from over-age boys. However, patterns vary greatly and need to be interpreted at national and sub-national levels.

Figure 2.3 shows the value of the GPI by country in 1999 and 2011. Whenever the line with square data points is above the line with round ones, GPI has moved to favour girls, and vice versa. In more than two-thirds of the countries the position of girls has improved. Where the GPI has changed to favour boys this has occurred mostly in high-enrolment countries where imbalances are changing as a result of different patterns of employment and migration between boys and girls. The GPI may also be changing as a result of declining numbers of over-age boys in school. When GPIs fall in the range of between 0.97 and 1.03 gender parity is close to being achieved and it is likely that issues of quality and achievement will become of more general importance than gendered differences in enrolment.

In SSA almost all of the countries with a GER at lower secondary of less than 50 per cent have more boys than girls enrolled. Conversely, almost all the countries with a GER at lower secondary above 50 per cent have more girls than boys enrolled. It may, therefore, be the case that in order to achieve gender parity secondary enrolment rates have to rise. This will only happen if most girls enter school on schedule and graduate from primary to secondary school at appropriate ages. Raising overall participation rates to meet goals for universal access should enhance gender equity.

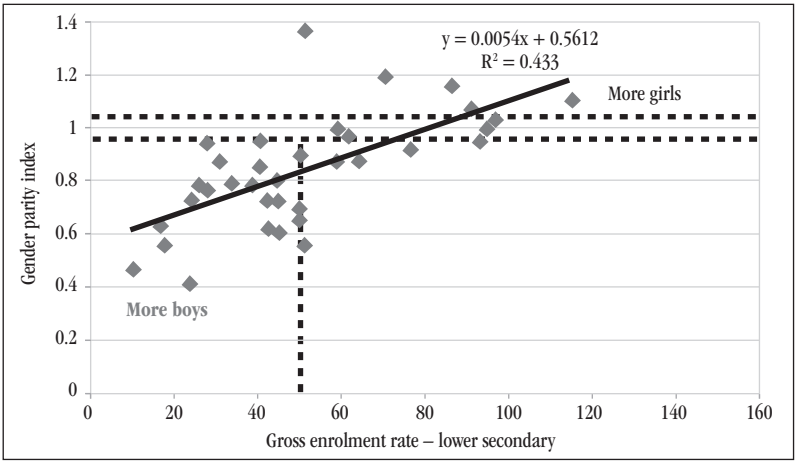
Figure 2.3 Gender parity index, primary, 1999–2011, sub-Saharan Africa



Source: UIS, 2012.

There are strong associations between enrolment rates and gender parity at secondary level (*Figure 2.4*).

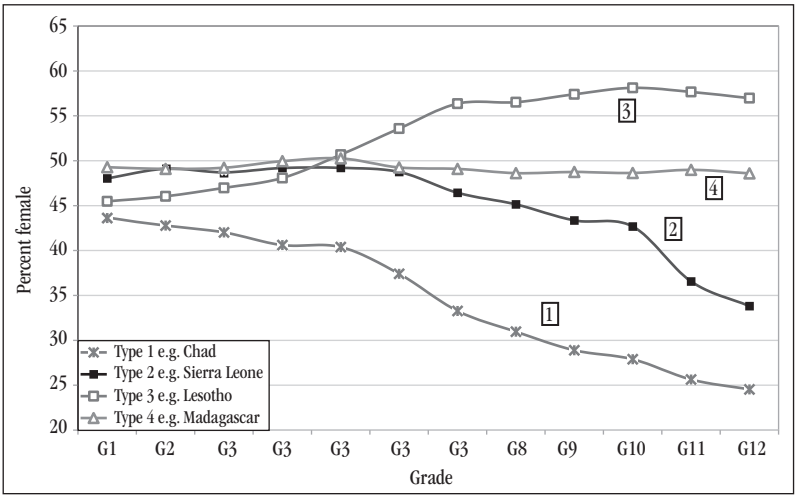
Figure 2.4 Gender parity index and GER at lower secondary, sub-Saharan Africa



Source: Adapted from UIS, 2012.

Countries in SSA show four different patterns of gendered enrolment. *Figure 2.5* illustrates each of the four patterns with a single country case drawn from the group. *Table 2.1* indicates the characteristics and countries in each cluster.

Figure 2.5 Percentage of girls enrolled by grade: four country types in sub-Saharan Africa



Source: Adapted from UIS, 2012.

Age and grade

Many countries in SSA face serious issues with over-age enrolment caused by late entry, repetition, and interrupted schooling. *Figures 2.6* and *2.7* show patterns of enrolment by age in grade for Uganda and Tanzania (charts for other countries in SSA are available in Lewin, 2009). Children who are over-age are more likely to drop out and less likely to achieve well. At higher grades, in particular, the presence of large numbers of over-age children can cause issues for teachers as, very often, there are children in the same grade separated by a six- or seven-year age difference. The oldest will be over 20 years by the time they complete secondary school. If universal access and completion are to be achieved, over-age enrolment must be minimized.

Table 2.1 Patterns of enrolment by gender, sub-Saharan Africa

Cluster	Description	Countries
1	Girls account for less than 45 per cent in Grade 1 with a decline to less than 30 per cent by Grade 10	Angola, Benin, Chad, Comoros, Côte D'Ivoire, the DRC, Guinea, Guinea Bissau, Niger, and Nigeria
2	Girls account for between 45 per cent and 50 per cent of enrolments in Grades 1 to 6, with a decline above Grade 6 to below 45 per cent above Grade 9	Burkina Faso, Burundi, Congo, Eritrea, Ethiopia, Liberia, and Sierra Leone
3	Girls account for between 45 per cent and 50 per cent of enrolments at Grades 1 to 6, with an increase above 50 per cent after Grade 6	Botswana, Cape Verde, Lesotho, Namibia, Mauritius, Seychelles, and South Africa
4	Girls consistently account for between 47 per cent and 53 per cent of enrolments across all grades	Cameroon, Gambia, Ghana, Kenya, Uganda, Tanzania, Madagascar, Malawi, Mozambique, Sao Tome and Principe, Senegal, Swaziland, Tanzania, and Zambia

Source: Author.

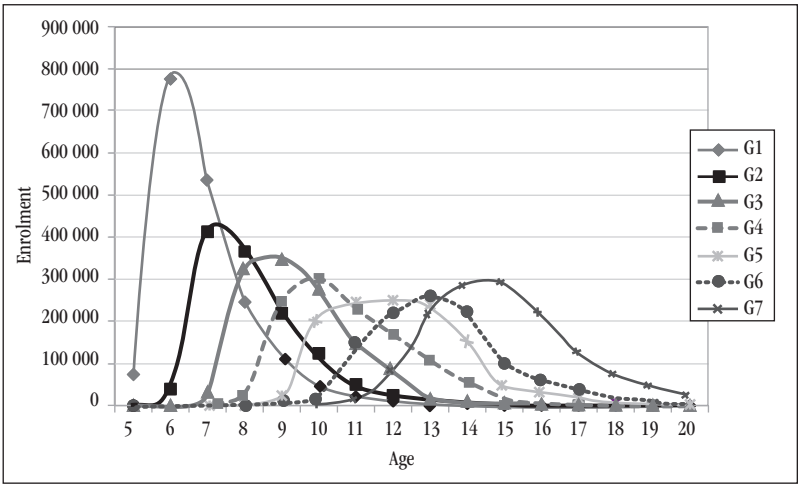
In Uganda, enrolment in Grade 1 includes children aged between 5 and 10 years (*Figure 2.6*). Enrolments from Grade 2 to Grade 7 are substantially fewer than in Grade 1 and include an increasing range of ages. By Grade 7 the range of ages of those enrolled is between 12 and 20 years. Ghana, Malawi, Kenya, and Zambia all have similar profiles to Uganda, though there are differences in detail. In all these countries there is a sequential reduction in enrolments by grade coupled with widening age-in-grade spread from a range of about five years in Grade 1 to eight years in Grade 6 or 7.

In contrast, Tanzania has largely succeeded in reducing the spread of ages in each grade over the last decade. Most children are now enrolled in the appropriate grade for their age (*Figure 2.7*). Ethiopia has also made rapid progress towards regularizing the age-to-grade relationship in its school system. South Africa has high enrolment rates and lower dispersion of age in grade than many

other SSA countries. Nevertheless, 30 per cent of its children remain over-age despite a policy of automatic promotion since the late 1990s.

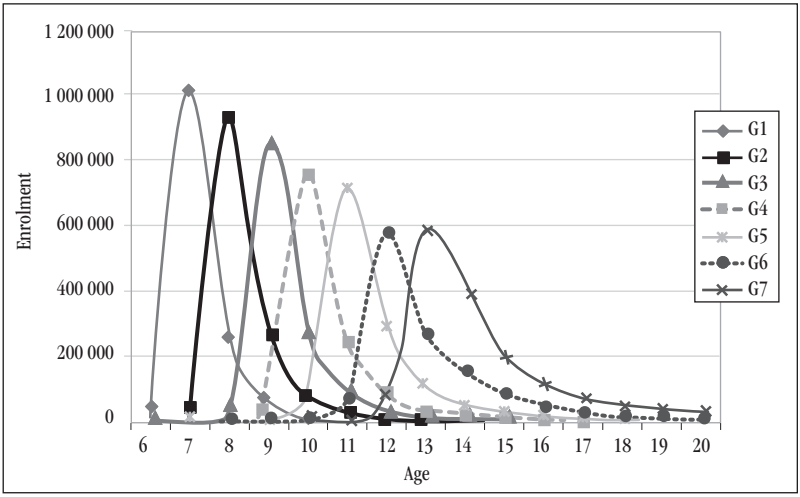
Access to secondary schooling is selective and tends to select out those who are over-age, who, generally, perform less well than their younger counterparts. As a result, the range of age in grade may well be less at secondary level than at primary (Lewin and Sabates, 2011). If the age-in-grade range remains wide it is inevitable that most will not complete primary and junior secondary.

Figure 2.6 Age-in-grade distribution, Uganda



Source: UIS, 2012.

Figure 2.7 Age-in-grade distribution, Tanzania



Source: UIS, 2012.

A taxonomy of participation for sub-Saharan Africa

Data from 38 countries in SSA have been used to generate a taxonomy that groups countries by the pattern of enrolments by grade.[6] Enrolments in each grade can be compared with the size of the relevant age group to generate a grade-specific enrolment rate. This provides an indication of how enrolments flow from Grades 1 to 12.[7]

Analysing data for SSA countries for which there is a continuous record of data[8] generates the following results, displayed in *Table 2.2*.

6. This updates an earlier taxonomy developed as part of the World Bank's Secondary Education in Africa (SEIA) programme (Lewin, 2008).
7. There are technical issues with this approach. For example, the composition of enrolment may differ between grades in terms of the number of repeaters, and the proportion of over-age children may vary – it is nevertheless the best available indicator for cross-national comparisons of patterns of enrolment.
8. Some fragile states are omitted since data are not available. They are most likely to be type 4 education systems.

The first group of countries have high enrolment and low drop-out. In these countries enrolment in Grade 1 is close to 100 per cent of the 6-year-old age cohort. Enrolments remain close to this level through to Grade 9 or Grade 10 after which there is some attrition. Flows in some countries are uneven at critical selection points as a result of repetition to improve performance. They may also be influenced by migration, especially in countries with small populations.

Table 2.2 A taxonomy of enrolments by grade, sub-Saharan Africa

Group	Description	Country
1	High enrolment at all levels and low drop-out	Botswana, Mauritius, Seychelles, South Africa, and Cape Verde
2	Middle-level enrolment and drop-out	Ghana, Kenya, Lesotho, Namibia, Sao Tome and Principe, Swaziland, Zambia, and Tanzania
3	Over-enrolment and high drop-out	Angola, Benin, Burundi, Cameroon, Chad, Ethiopia, Guinea Bissau, Malawi, Madagascar, Mozambique, Rwanda, Sierra Leone, Togo, and Uganda
4	Low enrolment and high drop-out	Burkina Faso, Central African Republic, Côte d'Ivoire, Eritrea, Gambia, Guinea, Liberia, Mali, Niger, and Senegal

Source: Author.

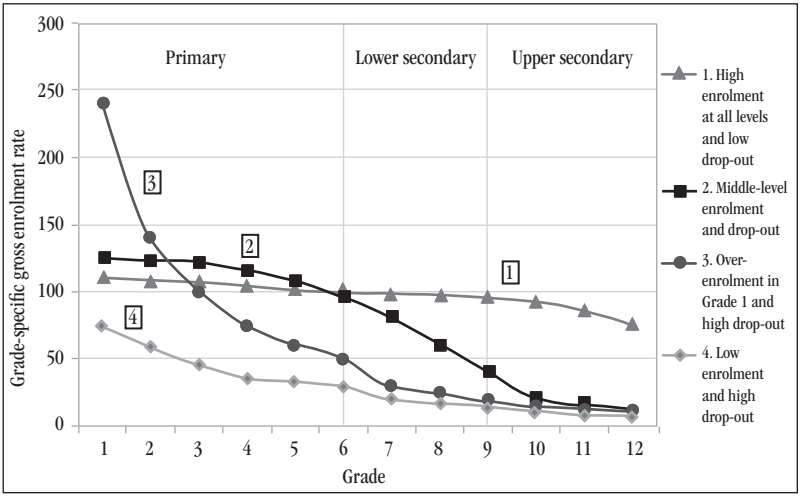
Group 2 countries have enrolments in Grade 1 between 100 per cent and 140 per cent of the total number of 6-year-olds. The enrolment levels fall off by Grade 9 to between 40 per cent and 70 per cent of the age cohort. For most of these countries the shape of the enrolment curve is slightly convex.

Group 3 countries provide a strong contrast. Here, initial enrolments can be over 150 per cent greater than the size of the 6-year-old age group. This indicates the presence of many over-age (and perhaps some under-age) children. It may also be the case that Grade 1 numbers are inflated by high repetition rates in the first grade and over-reporting of initial attendance. Enrolment curves in these countries are generally concave.

Group 4 countries are those with very low overall participation rates. Typically, those enrolled in Grade 1 are fewer in number than the size of the age group. By Grade 6 those enrolled are less than 50 per cent of the number of 6-year-olds and fewer progress into the secondary grades. Enrolment curves in these countries are often close to linear with fairly consistent drop-out rates between grades, starting from a low base.

The main patterns are shown graphically below (*Figure 2.8*). Planners need to establish which kind of enrolment pattern applies to their own countries, and to the regions and districts within their countries. These constitute points of departure for national plans.

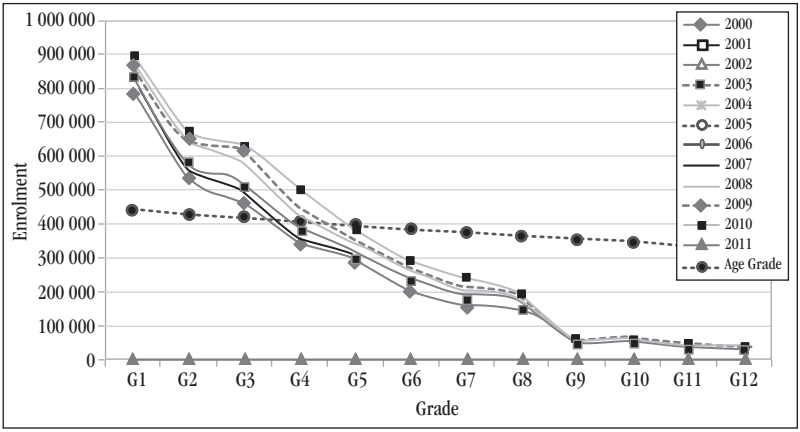
Figure 2.8 Patterns of enrolment by grade, sub-Saharan Africa



Source: UIS, 2012.

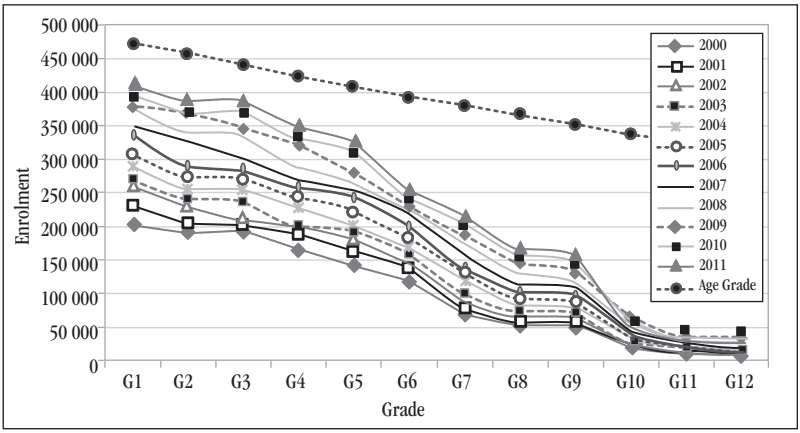
Patterns 3 and 4 are of particular interest since they include the countries furthest from universalizing access to education. Time series data give an insight into how patterns of enrolment in these systems have been evolving over time. This can be illustrated by examining patterns in two countries: Malawi for Group 3 and Mali for Group 4 (*Figures 2.9* and *2.10*).

Figure 2.9 Changing patterns of enrolment over time, Malawi



Source: UIS, 2012.

Figure 2.10 Changing patterns of enrolment over time, Mali



Source: UIS, 2012.

In Malawi (Group 3) there are nearly twice as many children enrolled in Grade 1 as there are 6-year-olds in the population. Since 2000 the numbers enrolled in Grade 1 have increased from about 800,000 to 900,000. The number reaching Grade 8, the last grade of

primary, have increased from 150,000 to 200,000 and remain less than 25 per cent of those in Grade 1. Over the period, the number of school-age children has increased by nearly 50 per cent. The system's tipping point – at which there are fewer enrolled than in the relevant age group –has moved from Grade 4 to Grade 5 over a period of 10 years. Progress towards becoming a type 2 or type 1 system is very slow.

Mali (Group 4) is different. The patterns of enrolment indicate that Grade 1 has increased from 200,000 to 400,000 over a 10-year period. At Grade 6, enrolments have increased from 110,000 to 250,000 and at Grade 9 from 50,000 to 150,000. Over this period, the number of school-age children has increased by about 50 per cent. The tipping point remains below Grade 1, meaning that there are never more enrolled than are in the relevant age group. Drop-out remains high. This system may become a type 3 system like Malawi but this will take at least another 10 years at the current rate of progress.

Patterns of participation in South and South-East Asia

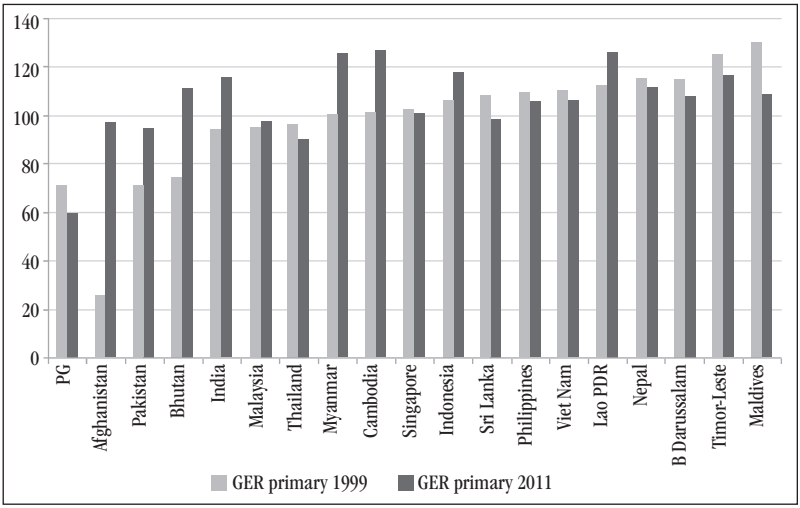
Enrolments

This section analyses the changing patterns of enrolment in SSEA. It demonstrates the general applicability of the method of establishing baseline profiles of participation, highlights the challenges left to achieve universal participation, and shows how the data can be used to estimate gaps in resources.

South and South-East Asia is a diverse region, comprising the world's second largest country, India, and several other large states (such as Bangladesh and Pakistan), alongside some of the smallest (such as Singapore and Brunei). Many parts of the region have been developing rapidly over the last decade with consistently high economic growth that has transformed their economies. Although the general picture is one of rapid and consistent progress, there are countries, and parts of countries, where educational access is limited and participation rates are well below universal levels, especially at lower secondary level. Lao People's Democratic Republic (PDR) and Cambodia, Bangladesh, Pakistan, Nepal, and several of the northern states in India, lag behind other parts of the region.

Gross enrolment rates in SSEA now average a little over 100 per cent at primary and about 80 per cent at lower secondary. Progress towards these levels has been steady. Net enrolment rates are now approaching 90 per cent at primary and over 70 per cent at lower secondary. By 2011, some of those with the highest enrolment rates had seen GERs fall as the numbers of over-age children reduced. Several of the low-enrolment countries made large gains in enrolment rates (*Figure 2.11*).

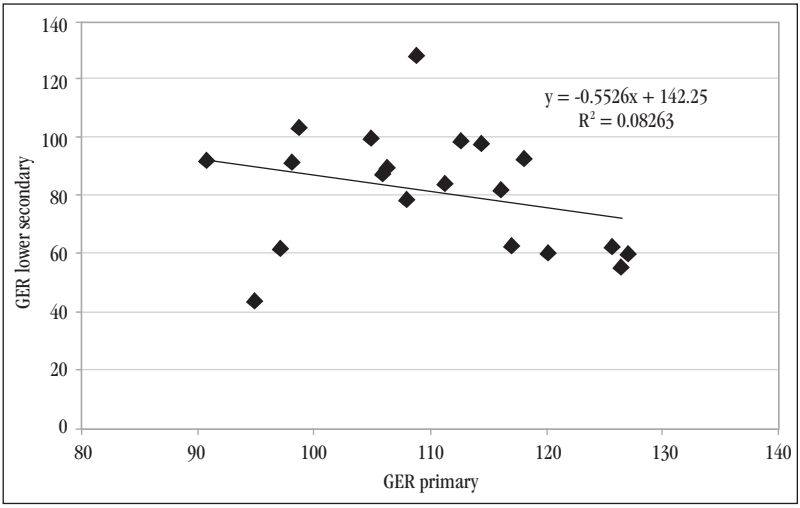
Figure 2.11 GERs at primary, 1999 and 2011, South and South-East Asia



Source: UIS, 2012.

As in SSA, there is little correlation between enrolment rates at primary and those at lower secondary. The pattern is mixed across countries in the region. There is, however, a weak tendency for those with the highest enrolment rates at primary to have low enrolment rates at secondary (*Figure 2.12*). This reflects the fact that those systems which are less developed often have large numbers of over-age children in primary school, inflating GERs to 120 per cent or more.

Figure 2.12 GERs at primary and lower secondary, 2011, South and South-East Asia



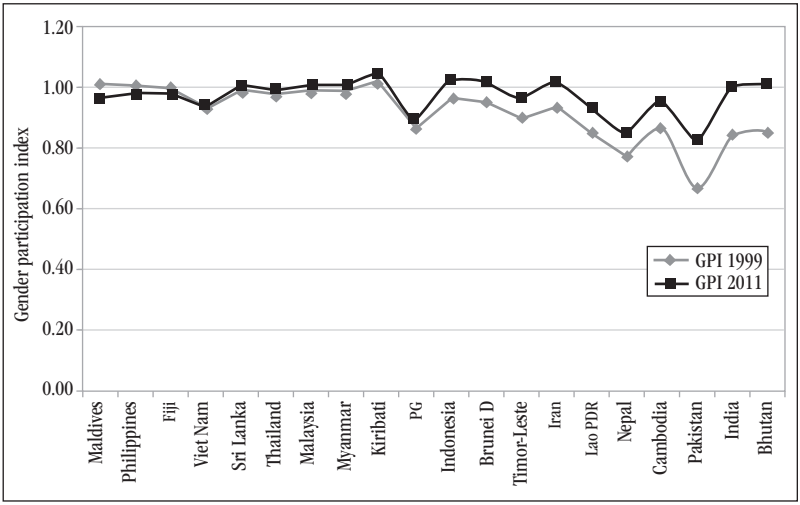
Source: Adapted from UIS, 2012.

Gender disparities

Across the region, differences in enrolment rates between boys and girls have diminished and the rates are now close to parity, though serious problems remain in particular countries. Gender differences in enrolment signify tendencies for girls to enrol at younger ages as well as to exit from schooling sooner than boys. It is important to link enrolments to demographic data since, in some countries in the region, selective abortion and infanticide have caused substantial imbalances in the gender ratios within the population.

The GPI improved over the last decade in the great majority of countries across the region (*Figure 2.13*). In three-quarters of cases, differences in enrolment rates between girls and boys diminished. In most countries, by 2011, the GPI was 0.96 or better. Pakistan and Afghanistan are notable outliers, with GPIs that are very low. Where GPIs have moved in favour of boys these changes have been in countries with GPIs close to 1.0, and the differences have been small.

Figure 2.13 Gender parity index, primary, South and South-East Asia

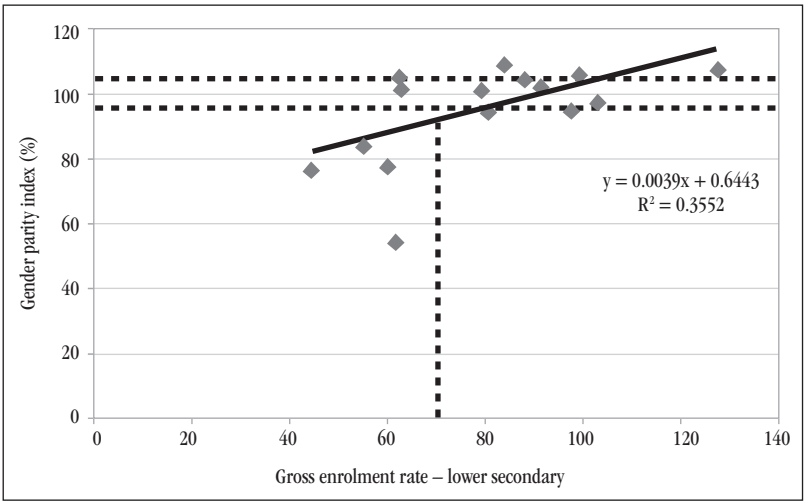


Source: UIS, 2012.

The GPI tends to favour boys at secondary level in countries where the secondary-level GER is below 70 per cent (*Figure 2.14*). This is a higher threshold than in SSA and is associated with countries with a high proportion of Muslims. Above this level of participation in secondary schooling, all countries in the region are close to gender parity.

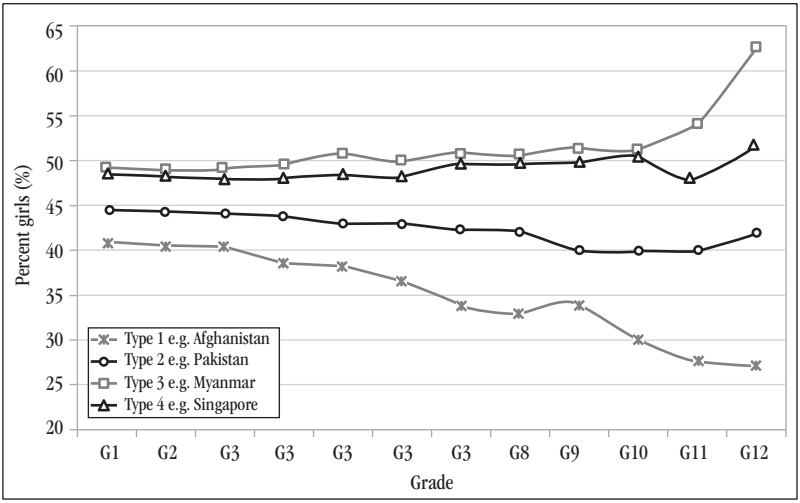
Alongside this taxonomy, four patterns of gendered inequalities in enrolment can be identified in the region (*Figure 2.15*). These patterns are similar to those in SSA, but the number of countries in each group varies and there are fewer extremes. *Figure 2.14* illustrates each cluster with the example of a particular country. *Table 2.3* identifies the countries and characteristics of each cluster.

Figure 2.14 Gender parity index and GER at lower secondary, South and South-East Asia



Source: Adapted from UIS, 2012.

Figure 2.15 Percentage of girls enrolled by grade: four country types, South and South-East Asia



Source: Adapted from UIS, 2012.

Table 2.3 Patterns of enrolment by gender, South and South-East Asia

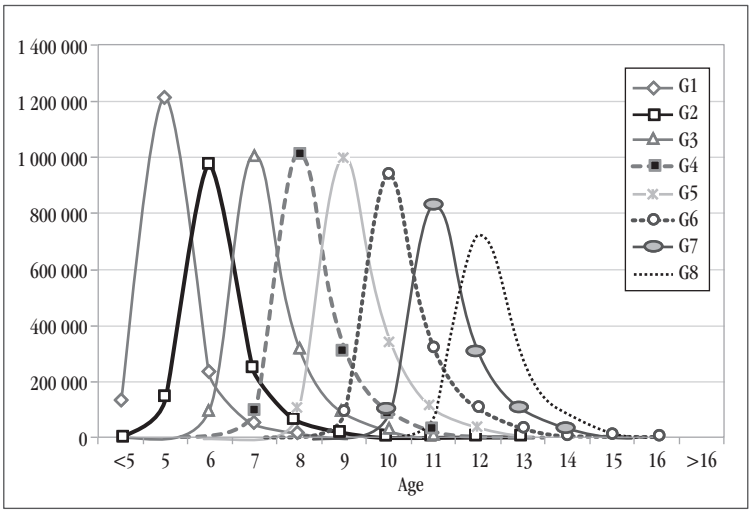
Cluster	Description	Countries
1	Girls account for less than 45 per cent in Grade 1 with a decline to less than 30 per cent by Grade 10	Afghanistan and Pakistan
2	Girls account for between 45 per cent and 50 per cent of enrolments in Grades 1 to 6, with a decline above Grade 6 to below 45 per cent above Grade 9	India, Lao PDR, and Cambodia
3	Girls account for between 45 per cent and 50 per cent of enrolments in Grades 1 to 6, with an increase above 50 per cent after Grade 6	Malaysia, Iran, Brunei Darussalam, Sri Lanka, Myanmar, and Indonesia
4	Girls consistently account for between 47 per cent and 53 per cent of enrolment across all grades	Philippines, Singapore, Timor-Leste, Viet Nam, Bhutan, Maldives, Nepal, and Bangladesh

Source: Author.

Age and grade

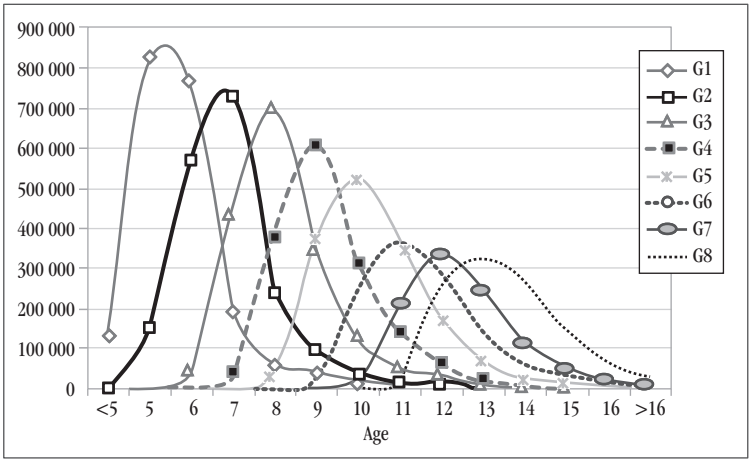
Over-age children are less common in the more developed education systems in SSEA than they are in SSA. In countries with high enrolment to Grade 9 and more developed economies, the range of ages within each grade is between two and three years. It is useful to contrast the case of Andhra Pradesh, in the south of India, with that of Madhya Pradesh, which is farther north. In Andhra Pradesh almost all children are within two years of the correct age for their grade as a result of an effective programme of interventions since the mid-1990s (*Figure 2.16*). By contrast, children in the upper grades of elementary school in Madhya Pradesh have an age range of six years (*Figure 2.17*). Uttar Pradesh in India (father north still) shows a similar pattern but with much greater attrition above Grade 5, the point of transition from primary school to upper primary school. The range of ages in upper primary school is very wide, covering as many as eight years.

Figure 2.16 Age and grade of children in school, Andhra Pradesh



Source: UIS, 2012.

Figure 2.17 Age and grade of children in school, Madhya Pradesh



Source: UIS, 2012.

Over-age children are also common in Pakistan, Bangladesh, and Cambodia, and in less developed parts of Indonesia. In Lao PDR there are extremely wide variations in age in grade, coupled with substantial over-enrolment at Grade 1 and high attrition and low participation in the higher primary grades through to lower secondary school.

Other countries in the region, such as Malaysia, Philippines, Singapore, Thailand, and most of the southern states of India, have small age-in-grade ranges of two years or less covering the majority of those enrolled. This reflects successful campaigns to ensure children have birth certificates and enrol at the appropriate age. Most of these countries also have effective automatic promotion policies.

A taxonomy for South and South-East Asia

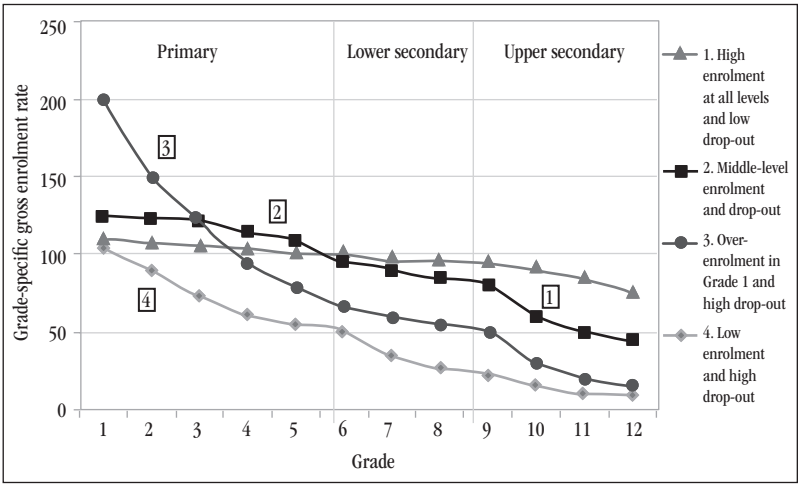
The countries for which there are grade-by-grade enrolment data can be grouped into the same four groups that emerged from analysing enrolment patterns in SSA. Using the same method generates characteristic patterns (*Table 2.4*, *Figure 2.18*).

Table 2.4 A taxonomy of enrolment by grade, South and South-East Asia

Group	Description	Country
1	High enrolment at all levels and low drop-out	Brunei Darussalam, Singapore, Thailand, Viet Nam, Sri Lanka, Maldives, Iran, and Malaysia
2	Middle-level enrolment and drop-out	Indonesia, India, Philippines, and Bhutan
3	Over-enrolment and high drop-out	Cambodia, Lao PDR, Myanmar, and Nepal
4	Low enrolment and high drop-out	Pakistan and Afghanistan

Source: Author.

Figure 2.18 Patterns of enrolment by grade, South and South-East Asia



Source: UIS, 2012.

In Group 1 countries, enrolments are high up to Grade 9, indicating that virtually all children are enrolled and that drop-out is small. Most of the high-enrolment countries in the region achieved universal primary education by 2000 and now enrol almost all children through to Grade 9 or Grade 10.

Group 2 countries have enrolments at Grade 1 of between 100 per cent and 130 per cent of the total number of the 6-year-old age cohort. Enrolment levels decline by Grade 9 to between 50 per cent and 80 per cent of the age cohort. These countries include Indonesia, India, Philippines, and Bhutan. The enrolment curve of this group shows a shallow decline up until Grade 9 with some countries having a slightly convex pattern of enrolment. There is a tipping point at about Grade 6, where there are more in the age group for the grade than there are enrolled. Enrolment curves tend to be convex.

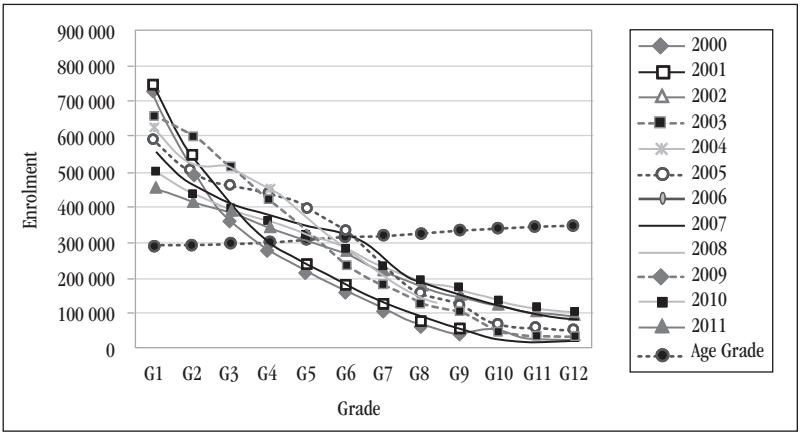
Group 3 countries are different. Enrolments in Grade 1 are typically between 30 per cent and 100 per cent more than the number of children in the age group for Grade 1. This is an indication that

many over-age children are enrolled. Drop-out is substantial and continues through the grades. In most of the countries there is a continuous decline above the lowest grades. By Grade 9 enrolments are less than 60 per cent of the number of children in the equivalent age group. In these countries fewer than half the children complete lower secondary school. The tipping point, at which there are more in the age group than are enrolled, is typically about Grade 4. Enrolment curves are mildly convex.

Group 4 countries are those with very low overall participation rates. In these, the number entering school in Grade 1 is quite close to the number of children in the age group. However, by Grade 9 enrolments have fallen to below 40 per cent of the number of children in the age group. The tipping point is at Grade 2 and the enrolment curve shows a fairly linear decline.

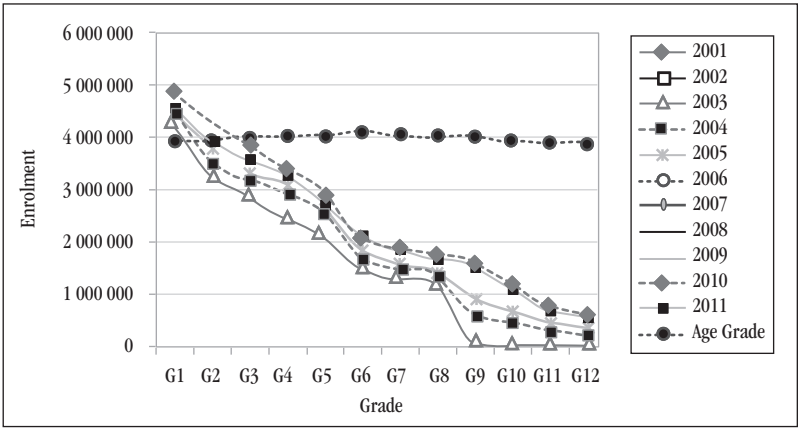
As in SSA, patterns 3 and 4 are of particular interest. Time series data can profile the evolution of these systems, as illustrated by the cases of Cambodia (type 3) and Pakistan (type 4) below (*Figures 2.19* and *2.20*).

Figure 2.19 Changing patterns of enrolment over time, Cambodia



Source: UIS, 2012.

Figure 2.20 Changing patterns of enrolment over time, Pakistan



Source: UIS, 2012.

In Cambodia (Group 3) there are more than twice as many children enrolled in Grade 1 as there are 6-year-olds in the population. Since 2000 the numbers enrolled in Grade 1 have increased from about 450,000 to 800,000. The number reaching Grade 6, the last grade of primary, have also increased, from 200,000 to 325,000, and remain about 50 per cent of those in Grade 1. Over the 10-year period described, the number of school-age children decreased as a result of demographic transition. The system's tipping point – at which fewer children are enrolled than are in the relevant age group – has moved from Grade 4 to Grade 6 over 10 years. At the current rate of progress, it will take a long time to evolve into a type 2 or type 1 system.

Pakistan (Group 4) is a low-enrolment country. Grade 1 enrolment has increased from 400,000 to 500,000 over a 10-year period. At Grade 6, enrolments have increased from 120,000 to 200,000, while Grade 9 enrolments have risen from 50,000 to 150,000. Over the same period, the number of school-age children has remained fairly constant. The number enrolled at Grade 1 is about the same as the population of 6-year-olds, with the tipping point moving from Grade 1 to Grade 2 over 10 years. Drop-out is persistent and high. Progress

to a type 3 system could occur during the next decade, but Pakistan is unlikely to become a type 2 system at the current rate of progress.

Concluding remarks

This chapter has illustrated how the use of a wider definition of access leads planners to look at patterns of participation, including gender differences, by grade. An understanding of these patterns can provide planners with deeper insights into the progress of children through education systems than can be gained from aggregate statistics on enrolment rates. Charting enrolments by grade, and comparing these with the number of children in an age group, is a straightforward and powerful tool that differentiates systems, regions, and districts[9] in terms of their performance in providing universal access to basic education and managing flows of pupils into further and higher education. Analysis of this kind can be extended in many different ways to develop dynamic pictures of the evolution of education systems over time, and the opportunities and bottlenecks that are likely to preoccupy planners.

Similar patterns emerge for enrolment patterns across the groups of countries in SSA and SSEA. However, the two groups differ in important respects, with more systems characterized by high-enrolment and fewer countries with low-enrolment patterns in SSEA than in SSA. Most countries in SSEA have achieved full enrolment through to Grade 6, and many to Grade 9. By contrast, in SSA no more than half of all children complete lower secondary school successfully. There are more countries with large numbers of over-age children in SSA and drop-out rates tend to be higher. In most, though not all, SSEA countries, drop-out rates from primary school are low, but this remains a substantial problem in many SSA countries. Many more SSA countries have tipping points – at which there are more children in the age group for the grade than there are children enrolled – below Grade 6. And more SSA countries have concave rather than convex enrolment curves.

These patterns suggest different priorities that reflect fundamental differences between the groups. Planners should adapt

9. Regional and district data are important.

their analyses and advocacy accordingly. The patterns should lead to different emphases in policy dialogue and strategy choices.

In Group 1 the priority is to focus on improved educational quality and managed expansion of upper secondary schooling since most children are enrolled to Grade 9 and beyond. These are countries where future growth in participation is likely to be modest, especially if demographic transition has taken place. They are also disproportionately richer countries with more resources to spend per child.

In Group 2 overall enrolment rates at primary level are in the mid-range. Most children complete the primary grades, and about half proceed into lower secondary schools. These countries have concerns about the balanced growth of secondary schooling and improved quality at primary. High-stakes selection examinations will continue to allocate scarce opportunities to secondary schooling. Selection methods will need to be equitable if access to higher levels is to be made available to the pool of talent in the population as a whole.

In Group 3 enrolment patterns suggest very high levels of repetition and over-age enrolment in the lower grades, and high drop-out with low completion rates at primary. Although primary GERs may be high, completion rates are low with less than half of all children completing primary. In these countries internal efficiency at primary is low, and this needs to be addressed with urgency. If these patterns of enrolment and participation are the result of poorly planned programmes for rapid expansion, the pathways to sustain higher levels of enrolment throughout the basic education cycle must be reconsidered. Access to expanded secondary schooling in these countries is also a massive problem unless flows from the primary school system are anticipated, with long-term planning based on demography and reforms that increase completion rates at primary in predictable ways.

Group 4 countries are a long way from universal access to primary schooling. Many children do not enrol in any grade and, if they fail to do so by the age of 10 years, they almost certainly never will. Expanding the capacity and the reach of the primary school system remains the priority since most children do not complete a

full cycle of basic education. This has to be balanced against the need to maintain quality sufficient to support and sustain demand.

It is tempting to see the patterns from Group 4 to Group 1 as stages of growth in a single sequence. If systems did evolve through these stages then we might suppose that pattern 4 would become pattern 3, which would become pattern 2 and, ultimately, pattern 1. This is an attractive proposition as it suggests that the evolution of systems is predictable and can be planned. Transitions from one pattern to another could be managed with the confidence that what was needed was what had succeeded in other countries. The evidence for this is mixed, however. It is clear from some of the examples given that this orderly progression through the different stages is not happening in certain low-enrolment countries.

Even if systems did evolve sequentially through the four groups, it would almost certainly be very inefficient. Group 3 systems are very wasteful since they over-enrol by a factor of two or more in Grade 1 and experience very high rates of drop-out thereafter, such that, often, no more than half the children who enter reach the end of the primary cycle. If this is the result of rapid expansion and an exaggerated emphasis on hitting headline targets enrolment rates in Grade 1, it is not a very desirable one.

It is even less desirable if the new pattern established in Group 3 remains in place for a decade or more. This is the case in a number of countries, as a result of difficulties in reaching the last 20 per cent and of maintaining quality at levels sufficient to support continued demand from households when children are making poor progress and learning little. Inflating enrolments without persistent efforts to improve learning and completion rates will mean that many children will start but not finish the cycle. This will compromise the impact educational investment has on development.

It might be possible to move directly from a Group 4 pattern of enrolment to a Group 2 pattern, if the transition from one to the other is properly managed. It is not clear from the data available that this kind of transition has been happening but there are signs in a small number of countries that such a transition is possible.

Patterns of change in enrolments by grade in both SSA and SSEA suggest very strongly that resources can be used more efficiently to create high participation systems. Over-enrolment in the lower grades is likely to prove both inefficient and ineffective. Resources will be allocated to cover high rates of repetition and it is likely that class sizes will be large enough to undermine learning progress and precipitate drop-out or repetition. Resources currently used to support over-enrolment in lower grades could be reallocated to expand access to higher grades, with no additional demands on budgets, provided the flow of students was managed more efficiently.

One way of understanding what is needed is to identify the pattern of development that is likely if existing priorities for policy and resource allocation remain in place. The best way of doing this is to look at a time sequence of growth over the recent past. Assuming that there has not been radical policy change, trend analysis will suggest what is most likely to happen in the future, all things being equal. Conversely, if there has been radical policy shift, it will be possible to establish whether or not it has had any medium-term effect on improvements in participation at different grades.

Either way, there is an opportunity to devise interventions which break through inefficient and ineffective cycles of transition from one type of the taxonomy to another. Theories of change are needed, based on empirical insights about how systems actually behave, rather than how, in an ideal world, they should behave. The analysis of the dynamics of change represented in existing patterns of growth in participation provides a basis for generating these theories.

The next chapter identifies recent research findings related to planning enhanced access to education. It draws on an extensive programme of research designed to identify opportunities for policy intervention to universalize access to basic education in ways that can be planned and costed. This research underpins the development of the framework for planners discussed in the final chapter.

III. Research findings and planning for access, transitions, and equity

Introduction

This chapter captures the findings of a multi-country programme of research on educational access transitions and equity, coordinated by the University of Sussex. The research focused on India, Bangladesh, Ghana, and South Africa, and included studies conducted in Kenya, Malawi, Sri Lanka, and China, and analysis of regional data sets for sub-Saharan Africa (SSA) and South and South-East Asia (SSEA). It drew on insights gathered from large-scale empirical work, including household surveys, community and school case studies, child tracking and assessment of learning, extensive analysis of secondary data, and national analytic reviews.[10] The findings summarized here are organized to reflect the zones of exclusion outlined in *Chapter I*. Out-of-school children, discussed first, feature in Zones 1, 2, 4, and 5; drop-outs in Zones 2, 4, and 5; and the silently excluded in Zones 3 and 6. Quality emerges as an important issue. It determines whether children attend securely, progress on schedule and learn appropriately, and move between zones. Issues concerning health and nutrition are also critical. Other concerns that cut across all the zones include teacher deployment, school management, transitions to secondary school, the impact of non-state providers on access, and educational financing. Commitment to equity and the political will necessary to make the right to education a reality also emerge as key factors in securing educational access.

Out-of-school children

Increased enrolment rates have often been accompanied by increased drop-out and growing numbers of over-age children at risk of failing to complete basic education successfully. Short-term gains in enrolment rates have often masked very uneven patterns

10. The full portfolio of research, including policy briefings indicating promising interventions, is available at: www.create-rpc.org

of participation across different grades. This is clearly the case in a number of SSA countries (Somerset, 2007; Akyeampong, 2010; Lewin, Wasanga, *et al.*, 2011), in some northern states in India, and in Bangladesh (Lewin, 2011*b*; Hossain, 2010). In some of the Group 3 countries identified in *Chapter II* – for example, Uganda, Malawi, Rwanda, Burundi, and Madagascar – substantial over-enrolment in Grade 1, high drop-out from middle grades, and slow improvements in completion rates at Grade 5 and above, have persisted for more than a decade. Systems which have not achieved the right balance tend to enrol more children initially, but fail to retain them through to the end of the basic education cycle. The anticipated evolution of characteristic patterns of enrolment from Group 4, through Groups 3 and 2, to full enrolment in Group 1, has failed to materialize in clusters of low completion rate countries. The reasons for this differ but include a lack of political will, poor management of flows of students, degraded quality leading to high failure and drop-out rates, and misinterpretation of high gross enrolment rates that conceal very high levels of attrition.

More out-of-school children drop out, rather than never enrol. This is true in Bangladesh, India, and Ghana, and, in slightly different ways, in South Africa (Ahmed *et al*., 2007; Govinda and Bandyopadhyay, 2008; Akyeampong *et al*., 2007; Motala *et al*., 2007). It is also true in many other low-income countries in SSA. Most exclusion from basic education is, therefore, a result of drop-out and not of initial and permanent exclusion. Most children below the age of 15 who are currently out of school have attended in the past but have not completed a full cycle of basic education. A 5 per cent annual drop-out rate, which is common in many low-income countries, results in fewer than 75 per cent of those who enrol at Grade 1 reaching Grade 6 and fewer than 65 per cent reaching Grade 9. Drop-out and lack of progression through to the end of basic education is the biggest challenge when it comes to universalizing access to basic education. Unless drop-out is reduced, the result will always be generations of out-of-school children, replenished each year by new drop-outs from successive cohorts. Countries which have improved progression and reduced drop-out introduced a range of measures to improve access, thought these differ from country to country (Lewin and Akyeampong, 2009).

Drop-out is most often linked to direct and indirect costs, lack of educational quality and relevance, distance from school, safety, and early pregnancy. Many other factors are significant for particular households and communities. These include unanticipated income shocks, opportunity costs, household work and paid labour, migration, morbidity and household health events, orphanhood, marriage, disability, poor-quality learning environments, teacher absenteeism, seasonal dislocation, and low levels of achievement. The literature identifies a long list of factors that lead to drop-out and push-out (Hunt, 2008) in different zones of exclusion. Some school practices appear to encourage drop-out. Uninspiring, uncomfortable, dangerous, and violent schools reduce motivation to learn (Sinha and Reddy, 2010). Corporal punishment is still widely used in Ghana and South Africa and can be a disincentive to return to school when absenteeism is punished (Alhassan and Adzahlie-Mensah, 2010). Bullying is associated with problems of sustained access to school (Dunne *et al*., 2010). When temporary absence is followed by repetition of a whole grade, it increases the numbers who are over-age and who drop out (Orkin, 2011). Pregnancy also often results in drop-out (Mwanza, 2011). Household characteristics are very strongly associated with enrolment. Thus, in Ghana, the children of public-sector employees were four times less likely to drop out than the children of those not working, and were nine times less likely to be excluded from secondary school (Rolleston, 2009*b*). Similar effects are evident in other data sets (Sabates, Hossain, and Lewin, 2010,) and qualitative data and ethnographic studies yield insights about the dynamics of drop-out and their inter-relationships with community practices (Laugharn, 2007; Cameron, 2010). Ananga (2011*a*) and Williams (2010) identify a variety of patterns and causes of drop-out, which each have different solutions at community level (*Box 3.1*).

Box 3.1 Types of drop-out in Ghana

Drop-out is not a simple event with a single cause. It is better thought of as a process with multiple causes. A typology of drop-out is helpful in identifying actions that can be taken to discourage it. Research in Ghana profiles six different types of drop-out, which can be grouped into two clusters of temporary and permanent drop-out.

Temporary

Sporadic drop-outs are children who cease to come to school regularly for a period of time before returning to a normal pattern of attendance. The most common reasons for this are economic, related to fluctuating household income and/or the demand for child labour, for example at harvest time or during the fishing season. Patterns can vary and absence from school may be concentrated on particular days of the week, or months of the year, or around religious festivals and rites of passage.

Event drop-out occurs suddenly, often with no prior indicator as to what is about to happen. Events include household illness or death, family migration to a new location, job loss, and school incidents, especially those related to corporal punishment or an inability to pay fees. Drop-outs often return to school in due course.

Longer-term temporary drop-out may last for a year or more and typically has underlying causes that are persistent sources of exclusion. These can include family or child sickness, endemic poverty and an inability to pay costs of schooling, early marriage, and pregnancy.

Permanent

Unsettled drop-outs are usually older children with a school history of under-achievement and repetition and who are over-age for the grade in which they are enrolled. Though they may want to return to school, and may feel excluded from opportunities in the labour market because of their lack of education, they are discouraged by the prospect of studying with much younger, more capable children. Schools may not wish to re-enrol pupils who have failed to progress in previous years, and may require re-entrants to undertake schooling they have already completed.

Settled drop-outs have no intention of seeking readmission. These are children below school leaving age who, in some cases, have established viable livelihoods and see no benefit in returning to school and no advantage in losing income they can earn in the labour market. Others may be adolescent girls with families and sources of support. Others still see no prospect of bettering themselves through schooling despite failing to gain viable sources of income.

Source: Ananga, 2011*a*.

Children who never enrol remain the most excluded group in a large number of low-enrolment countries and their rights to education are completely compromised. In many countries there are no reliable national data that adequately capture the enrolment status of many marginalized groups, such as illegal internal and international migrants, children in socially excluded groups, and children with disabilities, illness, HIV/AIDs, and other conditions that can lead to exclusion. Often, though not always, those who never attend are more likely to be children from poor households, with larger numbers of young children, girls, children with disabilities, and orphans. Often, they are likely to be concentrated in particular geographic areas. Where data are available, differences are clear. For example, in the north of Ghana more than 40 per cent of children in some areas are not in school at the age of 8 and many more enter school over-age. By contrast, in the south, less than 10 per cent fail to enter school (Rolleston, 2009*a*). Within households, there may be considerable variation between children when it comes to enrolment. For example, biological children living with their parents in Ghana had a 20 per cent greater chance of being enrolled than those who were fostered (Rolleston, 2010).

Household surveys tracking children in and out of school identify those who never enrol and provide data on their characteristics. Children who *never enrol* are in households where either (i) they could have enrolled but did not, and where the best solution is to extend the reach of the existing system, as is the case in many south Indian states, such as Andhra Pradesh, or (ii) they are located where normal enrolment is not feasible and the best solutions may require alternative educational delivery systems, such as the School for Life in northern Ghana (Akyeampong, 2009; Arkoful, 2010).

Migration, seasonality, and nomadic livelihoods generate major challenges for universalizing access. Migration (cross-border, internal, and related to urbanization and internal displacement) is common in SSA and SSEA. It is driven by a range of different motivations that include asylum-seeking, labour migration, and family affinity. Child migrants may be accompanied by parents or leave parents behind (Buckland, 2011; Shindler, 2010). Children left behind by migrating parents may be fostered by relatives or placed in boarding schools (Smita, 2008; Lewin, Wang *et al.*, 2011).

Information on migrants is very uneven and can be compromised by illegalities and vulnerabilities. Seasonality is often associated with temporary migration that can disrupt schooling (Ananga, 2010; Hadley, 2010). Nomadic communities experience discrimination where school systems are predicated on sedentary livelihoods (Sharma, 2011). Income poverty and labour demand vary with the agricultural seasons, which has implications for household income, child labour, gender inequalities, migration, malnutrition, anaemia, and malaria (Hadley, 2010). These, in turn, have implications for initial enrolment, school attendance, drop-out, repetition, and cognitive development and learning. Poorly planned mass education policies can force households to decide between education and work. Schools run by the Bangladesh development organization BRAC operate a seasonally adjusted school calendar designed through consultation with parents and the wider community. This has proved successful in boosting enrolments and lowering drop-out rates.

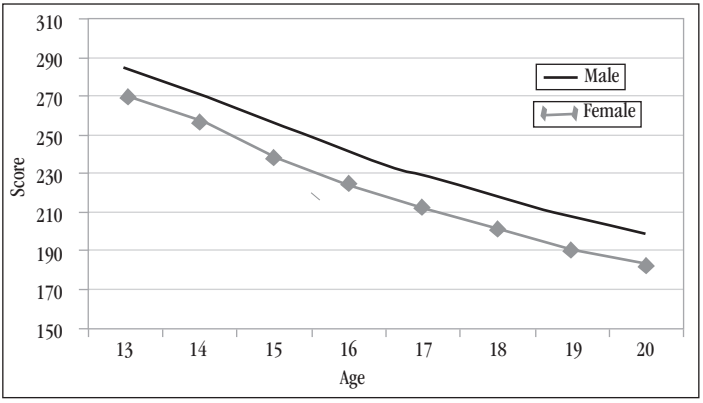
Silent exclusions

Silent exclusion is widespread in places where children are nominally enrolled but are learning little. Silently excluded children are at risk of drop-out as they are attending less than 90 per cent of timetabled time, are over-age by two years or more, have repeated more than one year of school, and are performing two or more grades below the norm in language and mathematics. Using these indicators, about 30 per cent of primary school children enrolled in the Bangladesh sample were found to be silently excluded and at risk of drop-out (Hossain and Zeitlyn, 2010). These children have physical access but not the kind of access that allows them to learn. Many learners attend infrequently (Govinda and Bandyopadhyay, 2011), and score poorly on achievement tests (Ampiah and Adu-Yeboah, 2009). Attendance and low achievement are correlated strongly with poverty and poor health (Pridmore, 2007). Increased physical access has resulted in large numbers failing to reach minimum learning goals and many being two or more years below the expected levels of performance (Gilmour and Soudien, 2009; Taylor *et al.*, 2010). In Kenya, age and performance are clearly related (*Box 3.2*)

Box 3.2 Age in grade and examination performance in Kenya

The development of age-in-grade relationships is important for several reasons. First, children who enrol at an age above the norm for entry miss out on learning experiences at a time when they are most receptive to learning basic skills and establishing secure foundations for cognitive development. Second, those who repeat Grade 1 or subsequent grades will become over-age for their grade. The more over-age a child is within a grade the more it is likely that they will underachieve. Third, where older children are taught in classes with younger children there may be psycho-social issues (for example, low self-esteem, bullying, and gender-based harassment) and problems in matching learning to cognitive capabilities. Fourth, over-age children who are late to arrive at junior secondary school are much less likely to continue. Where the age of initial entry is 6 years, primary school leavers in a six-grade system will be 12 years old. If they are two years over-age, they will be 14. This approaches the ages of entry to the labour market and of marriage. It is unlikely that many who are two or more years over-age will continue further. Finally, there are strong and consistent correlations between age and examination performance which guarantee that those who are over-age by more than two years will never gain access to the best secondary schools. Those over 14 will not achieve the level necessary for acceptance into national secondary schools.

Figure 3.1 Examination performance and age in Kenya



Source: Lewin , Wasanga *et al.*, 2011

Over-age entry to primary school and delayed progression are substantial barriers to the achievement of universal access to basic education. Many children are considerably over-age for the grade they attend. In some systems more than 40 per cent are at least two years too old by the end of primary school (Lewin and Sabates, 2011; Akyeampong *et al.*, 2011; Motala, Dieltiens, and Sayed, 2009; Govinda and Bandyopadhyay, 2011; Zeitlyn and Hossain, 2011). If children have not enrolled by the age of 10 it is unlikely they ever will (Lewin, 2007*a*; Akyeampong *et al.*, 2007). Late entry to school arises from clinical stunting, child labour, under-valuing of schooling, and concerns for child safety. It may also be the result of uncertain birthdates. The range of age in grade increases with grade until the point at which selection results in over-age children being excluded. Entering school late and being over-age increases the chances of drop-out (Sabates *et al.*, 2010). Girls are particularly vulnerable to drop-out if they are over-age (Taylor *et al.*, 2010). In much of SSA the preponderance of boys at secondary level is due mostly to the persistence of boys to older ages.

Where completion rates are lowest, over-age enrolment is greatest. Gains in enrolment may be achieved at the cost of greater proportions of over-age children enrolled. Thus, though enrolment rates have increased in Malawi and Nigeria, the proportion of over-age children has also increased over the last decade. In Kenya, Uganda, and Zambia, the number over-age children should have fallen as a result of efforts to ensure that all 6-year-olds enrol in school and since repetition of grades is discouraged by automatic promotion policies. However, this has not happened in these countries, and the rate of over-age participation has been very slow to change (Lewin and Sabates, 2011). There are no systems with high enrolment and high completion rates which also have large numbers of over-age children. States in the south of India, such as Andhra Pradesh and Tamil Nadu, no longer have over-age children in any great quantity thanks to a decade of reform to ensure entry on schedule and reduce repetition. Similarly, Viet Nam has few over-age children following systematic efforts to promote on-time enrolment and on-schedule progression.

Poor attendance of children and teachers is associated with low achievement and, consequently, repetition. Aggregate enrolment rate indicators conceal levels of daily attendance and

time on-task. In some schools in India, Bangladesh, and Ghana, child attendance can average less than 60 per cent on a given day (Hossain, 2010; Ananga, 2011*b*). If this is accompanied by irregular teacher attendance it can result in the loss of more than half of all learning time. In Sri Lanka, where enrolment rates are high, poor attendance and low achievement are strongly associated with school and community factors rather than household ones (Little, Indika, and Rolleston, 2011). Reasons for poor attendance are varied. They include sickness, caring for siblings and relatives, seasonality, local opportunity costs for cash income, costs, transport issues, school discipline, and low achievement (Govinda and Bandyopadhyay, 2010*a*). Poor attendance may be a precursor to drop-out. It happens in characteristic patterns which can be temporary or permanent and may be sporadic, linked to singular events, or long-term and persistent. They may be associated with ambitions to drop in or to remain dropped out (Ananga, 2011*b*). These different conditions have different causes and demand different possible interventions.

Poor health and nutrition are related to late enrolment, low attendance, repetition, low achievement, and subsequent drop-out. There is much evidence of the impact of health and nutrition on educational access, participation, and achievement (Pridmore, 2007; Buxton, 2011). Poor health and nutrition clearly contribute to educational exclusion across the zones of exclusion. Health shocks from – and before – birth may have enduring consequences: stunting is irreversible, and cognitive damage from nutritional deficiencies may not be recoverable (Sood, 2010). It is important to understand patterns of parental and child morbidity and how these interact with attendance and progression. Illness increases the likelihood that children will become over-age since many schools require the repetition of a whole grade following a period of absence. The impact of illness on becoming over-age is similar to the impact of being stunted, and has as much negative impact on access as orphanhood (Orkin, 2011). Ananga (2011*a*) and Ampiah and Adu-Yeboah (2011) also highlight the effect children's caring responsibilities can have on educational access.

Disability is linked to higher probabilities of exclusion. Definitions and approaches to disability are problematic. Croft (2010) has reviewed these and identified the key issues that need

to be addressed in order to achieve greater inclusion of disabled children and young people in learning. This work is complemented by Giffard-Lindsay's study (2007). Pedagogical approaches suited to circumstance and disability are critical to effective practice, and depend on assumptions that differ across cultures. The identification of disability is uneven and imprecise, resulting in barriers to access to those with disability. Specialized provision for recognized disabilities – speech, hearing, sight, and mobility – often depends on support from non-state providers, and policies on inclusion and mainstreaming those with disabilities into normal schools can be inconsistent and contradictory.

Transitions to secondary school

Expanding the supply of secondary school places is critical to achieving universal completion of primary school. Access to secondary schooling is a greater determinant of life chances than completion of primary schooling in most low-income countries (Lewin, 2007*b*). Those who progress to secondary education are much more likely to come from richer households and to be from urban rather than rural homes. Unless transition rates to lower secondary are high, the demand to complete primary schooling will soften. Participation at secondary level also needs to grow fast enough to ensure the supply of new primary teachers necessary to support universal access to primary school. There are many other reasons to manage the expansion of secondary schooling, not least the critical importance to economic growth of ensuring that enough secondary-educated graduates reach the labour market (Lewin, 2007*b*, 2008; Biswal, 2010).

Expanding secondary schooling needs to be pro-poor. Data from Kenya indicate how access to secondary schooling favours richer households and existing elites (Oketch and Somerset, 2010; Ohba, 2009; Lewin, Wasanga *et al.*, 2011). In Ghana, 20 per cent of secondary schools provide 75 per cent of university entrants (Djangmah, 2011). In India, costs remain a disincentive to enrol above Grade 8 (Siddhu, 2010; Lewin, 2011*b*; *Box 3.3*). Expanded access to secondary school requires reductions in inequalities to allow participation by children from lower-income households through fee-free schools, pro-poor bursary schemes, and other subsidies**.**

Box 3.3 Expanded secondary schooling in India

Less than half of all children in the populous northern states of India enter and successfully complete secondary school. Among scheduled tribes and castes and other socially excluded groups, the proportion is even lower. By contrast, nearly all children in China graduate from lower secondary school and most from upper secondary. Rashtriya Madhyamik Shiksha Abhiyan (RMSA) is the Government of India's scheme to achieve universal secondary education for all young people up to Grade 10. The RMSA strategy to improve access and achievement focuses on infrastructure development in order to increase capacity to ensure that all children have local access to schools of appropriate quality. Analysis to support long-term planning has identified a number of key issues critical to the impact of RMSA:

- Enrolment-driven simulations of growth clearly indicate that in low-enrolment states there is a supply-side constraint on secondary participation arising from the restricted flow of primary graduates – much secondary-school capacity will remain unused until primary completion rates increase.
- Secondary schooling is fee paying and very unevenly distributed. Increasing enrolment will require much more fee-free or low-fee schooling so that the 40 per cent of households living below the poverty line in poor states have some chance of participating.
- Girls' participation in some states is hampered by early marriage, female infanticide and selective abortion, household-based labour, and concerns for safety which must be addressed.
- Private, unaided secondary schools are too expensive for the majority of households to afford. The Right to Education Act provides for the allocation of 25 per cent of private school places to poor households. Implementation of this requirement is unlikely to be easy, not least because most private schools are not located where poorer people live.
- Modelling shows that the requirement that every household should be within 5km of a secondary school will result in large inefficiencies of scale with some states already having 40 per cent of their secondary schools with fewer than 100 children.

Sources: Lewin, 2011*b*; Siddhu, 2011.

Expanded access to lower secondary schooling creates an additional challenge for the design and operation of small day secondary schools at sustainable costs. In some states of India

50 per cent of secondary schools have fewer than 100 students. Pupil-teacher ratios can be below 10:1 because the curriculum is mono-graded and teachers are specialized. Boarding schools are an option but may be very expensive if adopted on a large scale, unless they are organized as they are in rural China where large boarding schools of 1,000 students or more have economies of scale (Lewin, Wang *et al.*, 2011). Multi-grade schools require investment in a suitable core curriculum, appropriate learning materials, and the development and support of multi-grade pedagogies. There is no reason why they should be more expensive in operation than mono-grade schools once the start-up costs have been covered

Demand-side issues

Demand-side issues, including rising opportunity costs for older children, lack of perceived relevance, and early marriage, are growing in importance as basic education is extended to include Grade 9. Research highlights drop-out in higher grades because of poverty (Sabates *et al*., 2010; Rolleston, 2011), opportunity costs in local labour markets (Ananga, 2011*b*), a lack of perceived benefits and relevance, and poor school quality (Govinda and Bandyopadhyay, 2010*b*). These factors become more important for older children and parents as they question the value of completing a full cycle of basic education, and where there are pressures on children to marry or to contribute to the household economy. Universal access through to completion of lower secondary schooling will not be achieved without an understanding of these problems.

Demand-side interventions can successfully enhance access and participation. There are strong and consistent findings that nutrition and child health programmes can reduce stunting and under-nutrition, which have cognitive consequences, and that such programmes have a range of other benefits for long-term health and educational attainment (Pridmore, 2007; DFID, 2011). Many demand-side interventions are related to cash transfers, and include price-based policies (unconditional and conditional price reductions), performance-based incentives (scholarships for those who attend and achieve at appropriate levels), credit-based interventions (savings groups designed to address the problems of credit-constrained households), and income supplementation (with transfers to

households to make schooling more affordable) (Banerjee *et al.*, 2013).

There is a range of issues that arise with demand-side interventions. These include problems of elite capture (Ohba, 2009) where subsidies fail to reach the poorest as a result of financial and non-financial barriers that exclude those with low incomes from applying, or where additional costs make participation unaffordable. Savings groups can ease credit constraints but may encourage unsustainable borrowing to finance educational expenses unless the accumulation of indebtedness is limited (Cameron and Ananga, 2015). Cash transfers to poor households may be used to finance private school fees and private tuition in a search for comparative advantage in examination performance, thus raising the price of selection and generating new inequalities (Lewin, 2015*a*). It is clear that demand-side interventions can be powerful tools to enhance access and participation, but the magnitude of their effects is context-specific and difficult to generalize.

Improved quality

School quality and school processes are inseparable from educational access and outcomes and an extended vision of universal access to education. Access has no meaning unless it is linked to learning that has utility. Pedagogies have to be effective and fit for purpose and must result in achievement commensurate with grade level. Govinda and Bandyopadhyay (2011) argue that 'the backward linkage between school quality and exclusion from schooling' needs to be examined, arguing that poor-quality and unfriendly schools are putting children and families off and pushing them out of education. Alexander (2008) explores how educational quality in the classroom is conceived and measured in India, and how this might be done more effectively in future to reduce the silent exclusions that result from current practice.

Multi-grade teaching and learning are essential to reach children in low population density areas where school sizes are small. Over 80 per cent of primary schools in rural India have three teachers or fewer, though they include enrolment across five grades (Blum and Diwan, 2007; Little, 2008*b*; Little and Blum, 2008*a*). Unless

multi-grade pedagogies are used, as in activity-based learning in Tamil Nadu (Kumar, 2010), learning time will be lost. Small primary schools are common and necessary in areas of low population density (Blum, 2009). A large-scale innovation in Tamil Nadu has succeeded in extending this new pedagogy to large numbers of schools (*Box 3.4*).

Box 3.4 Improved pedagogy and activity-based learning

Critiques of pedagogy in low-income countries in sub-Saharan Africa and South and South-East Asia focus on teaching methods that are didactic and that emphasize rote learning of facts for later recall. Classroom organization places the teachers at the centre of learning, giving little responsibility to learners for learning or assessment. Mono-grade curricula assume that all children should learn the same things at the same time and progress at a similar rate. One large-scale challenge to this orthodoxy can be found in the activity-based learning (ABL) programme introduced by the Tamil Nadu *Sarva Shiksha Abihyan* state office over the last decade. Its purpose was to transform learning and teaching, replace a didactic pedagogical outlook with more child-centred approaches, and share responsibility for learning with learners. The inspiration for the programme was the Rishi Valley Rural Education Centre (RIVER), a non-governmental organization renowned for its experiments with 'joyful learning' and intensive teacher training, which was viewed as a key resource. The development of ABL was also influenced by the experiences of the Siddharth Village project in Odisha, and by Eklavya in Madhya Pradesh.

At its core, ABL promotes and supports self-paced learning, structured by 'learning ladders' of activities and assessments in each core curriculum area. ABL depends on kits of classroom-based learning materials linked to steps on the learning ladders. The kits include task cards specifying activities, simple aids for learning basic science and mathematics, enrichment materials and additional reading books, and other learning materials. No textbooks are used. Children learn in groups which may be mixed-age and progress at a rate determined by their capability. A public record of completed units from the learning ladder is maintained on the wall of the classroom so children and parents can see their progress and teachers can monitor learning. Teachers are encouraged to see themselves as guides to learning rather than the focus of attention and the initiator of all activity. Children are encouraged to take increasing

responsibility for their own progress and share their learning with other children in the small child-led groups in each classroom. Students move from Group 1, which leans heavily on teacher support, to Group 6, which is a self-evaluation group for each curriculum topic.

ABL was piloted in 13 schools in the Chennai Municipal Corporation before being extended, first to 260 schools, and then to 4,100, over the following three years. At this point, the approach was adopted across all 37,500 schools in Tamil Nadu that were in receipt of government funding. This large-scale implementation was supported by a mentoring system whereby experienced ABL teachers introduced the new pedagogy to clusters of schools and provided continuing professional development on a regular basis thereafter. ABL has spread to several other states, including Andhra Pradesh, Chhattisgarh, Karnataka, and Madhya Pradesh. More than 10 million children are now exposed to some version of ABL and the innovation has been adopted by a number of other low-income countries.

Sources: Anandalakshmy, 2009; Akila, 2009; www.river-rv.org/partnerships.html

Some practices by teachers undermine quality learning and diminish access. These include teacher absenteeism and the use of corporal punishment, as well as poor pedagogic practices that place most of the responsibility for low academic performance on the children. Where there are community-based approaches to school governance and management, and effective supervisory systems, these problems are reduced (Govinda and Bandyopadhyay, 2009*a*). School-based support for vulnerable children is also an effective strategy (Williams, 2010). New indicators of quality are needed in the domain of pedagogy, within a framework for thinking about and planning for quality education for all children.

Teacher deployment and school management

Teacher supply and deployment can be insufficient, unbalanced, inequitable, and inefficient, and must be planned to anticipate demand. The balance between teacher supply and demand varies widely between countries, between districts, at different levels, and in different specializations. Teachers' salaries relative to other occupations also differ, and may range from not much more than GDP per capita to five or more times as much, with implications for demand for initial training and subsequent motivation. As the communications infrastructure of many countries has improved it has

become more common for teachers to commute to rural schools from small towns and urban areas. This may dilute relationships between teachers and communities, especially where teachers are drawn from different castes and classes than the children they teach. Recent research provides evidence of the uneven posting of teachers, teacher absenteeism, low time on-task, and uninterested and unimaginative pedagogy (Govinda, 2011; Ahmed, 2011; Akyeampong *et al.*, 2011; Motala, Dieltens, and Sayed, 2013). Pupil-teacher ratios vary widely from below 10:1 to over 100:1, with consequences for learning and teaching. Acute shortages of teachers persist in some areas, and coexist with surpluses in others. More efficient methods of training and deployment are needed to ensure teacher supply at sustainable costs.

School management is critical to the effective use of scarce resources and enhanced learning. Efficient resource management is the result of decision-making at many different levels (Dunne *et al.*, 2007; Bandyopadhyayand Subrahmanian, 2008). However, in many systems the links between those who allocate resources and those who use them are weak. Conventional public school systems provide few incentives to schools to use teachers efficiently and timetable teaching to maximize the time students spend on-task. Absenteeism is often not sanctioned appropriately, and terms and conditions of service may encourage casual leave and unjustified sick leave, thus reducing teaching time. Over-large lower-grade classes and under-size higher-grade classes in the same school are unlikely to be pedagogically efficient. They are certainly not equitable. Managing schools is, fundamentally, about managing learning as much as managing teachers. This highlights the importance of formative assessment linked to intervention, reducing rather than magnifying differences in achievement between groups of students, and monitoring and providing incentives that improve teacher performance and productivity. National initiatives have to resonate with community participation (Essuman and Akyeampong, 2011).

Infrastructure

Infrastructure problems include insufficient numbers of schools and poor-quality learning spaces. Studies describe schools that have no clean water or sanitation, no electricity, poor physical conditions

which compromise learning, too few classrooms, and over-size classes, sometimes with over 100 children to a room or with classes taught outside. In some rural and peri-urban areas there are simply not enough schools within reach of where children live (Siddhu, 2010; Cameron, 2011). It is a fundamental criterion of meaningful access that physical facilities meet basic standards that should include clean water, sanitation, safe learning spaces with light and ventilation and no environmental hazards, a location within reasonable travelling distance, appropriate furniture and equipment, an adequate supply of learning materials, including books, blackboards, and essential teaching aids, sufficient classrooms and teachers to organize classes of no more than 40 children, adequate local accommodation for teachers, and access to a modern communications system. School building programmes linked to school mapping remain essential in ensuring access to adequate school space in accessible locations.

Investment is needed in learning materials based on curricula, designed for a new generation of learners and covering the full range of capabilities. Systems with high levels of learning provide access to many learning materials and ensure that all children have access to core textbooks at affordable prices. Book availability is often correlated strongly with levels of achievement. Budget allocations to purchase learning materials in low-income countries may be less than 5 per cent of the recurrent education budget. Low allocations should be increased at the same time as ensuring value for money through appropriate procurement systems (*Box 3.5*).

Box 3.5 Textbook publishing and costs in Uganda

The cost of learning materials varies greatly between countries in SSA. In many countries, government publishers and print and distribution networks have monopolized supply to a large, captive market of schoolchildren whose parents have little choice but to buy the books provided and pay the prices asked. The supply of learning material has fallen a long way short of expectations and it has remained all too easy to find 'paperless schools' where few of the core text books are available. In Uganda, the National Curriculum Development Centre was established in the 1970s as a state monopoly responsible for both the content and production of curriculum materials. As primary education was universalized in the 1990s it became clear that the

existing system for the development, production, and distribution of learning materials was inadequate. Book-purchasing funds were allocated to schools, which were invited to order the books they favoured from private-sector providers using an approved, quality-assured list. This created competition and diversified supply, but it also created opportunities for cartels to form and fix prices, and for pressure to be placed on schools to purchase titles from particular suppliers in return for personal incentives. A reformed system was introduced to address the problems. The key elements were:

- A limited list of three books approved in each core subject and grade to discourage a proliferation of titles and gain from economies of scale.
- An independent appraisal system ring-fenced from conflicts of interest in the textbook-approval process.
- Minimum physical specifications and durability tailored to the Ugandan climate and complying with curriculum specifications.
- A weighted points system for approval, with 40 per cent of the score reflecting price to encourage competition.
- Legally binding contracts with fixed discounts for quantity and specified limits to annual price rises.

Transparent and competitive tendering produced a greater supply of appropriate books. It was backed by legal conditions on procurement that vested interests contested. The new system resulted in a reduction in costs of approximately 60 per cent for both textbooks and other learning materials. The purchasing power of schools increased dramatically and was converted into many more books per child.

Sources: Ward, Penny, and Read, 2006.

Non-state providers

Non-state, not-for-profit providers make contributions to educational access but remain much less important than public authorities. Education systems vary as to the amount of provision provided by non-state organizations. At primary level, in Ghana, non-state providers account for less than 20 per cent of total provision, and less still at secondary level. In South Africa they account for only about 5 per cent of enrolments, with most of these in high-cost private schools (Lewin and Sayed, 2005; Motala and Dieltiens, 2008). Non-state providers come in many forms. Non-profit

varieties include faith-based, philanthropic, community-supported, and corporate forms (Rose, 2007). BRAC is a very large scale, not-for-profit provider with a unique pedagogic programme which provides access to education in rural Bangladesh, alongside a range of other non-state providers (Ahmed *et al.*, 2007). Though 40 per cent of children in Bangladesh go to schools managed by non-state groups, most of the registered non-state schools are financed by government and only 15 per cent of children are in schools not funded by the state (Sabur and Ahmed, 2010). Key issues concern the extent to which not-for-profit organizations should be subsidized, how they should be regulated and facilitated, what limits should be placed on their growth, and the opportunity costs and equity implications of encouraging growth.

Private, fee-paying, for-profit schooling rations access to education by price and is likely to increase inequalities. Research indicates that no household much below the 20th percentile of household income will be able to afford unsubsidized private secondary schooling in much of SSA and SSEA (Lewin, 2007*e*; *Box 3.6*). At primary level, the threshold is lower than at secondary because teachers' salaries can be less and unsubsidized for-profit schools may attract children from the second and third quintiles of household income. Private school teachers may be paid below minimum wage levels and a fraction of the salary of government teachers – as little as one 20th in some part of India. Studies of access to secondary school in low-income countries (e.g. Ohba, 2011, Zeitlyn *et al.*, 2015) indicate how costs constrain choice, exclude many, and constrain expanded access. Empirical evidence from India shows conclusively that the poorest cannot access even low-price private schools in rural areas and that the development of such schools for richer parents has resulted in an almost complete separation of the schooling of the richer children from that of the poorest (Härmä, 2010; Siddhu, 2011). Similarly, in Ghana, low-price private schools do not generate access for the poorest (Akaguri, 2014). The conclusion is that private providers (those that are unsubsidized and run for profit) will only contribute on the margin to universalizing access to basic education and rarely increase access by recruiting those who would otherwise not attend school.

Box 3.6 Private schools for the poor?

Research on 'low-fee' private schools in Ghana and India indicates that they predominantly enrol children who were previously enrolled in other schools, rather than reaching out to those who have never attended school. Low fees are often not low enough to allow for the participation of the poorest. In Uttar Pradesh, for example, fees amount to 30 per cent or more of household income per child from homes below the poverty line. Not surprisingly, the most common cause of drop-out in the Punjab is the cost to households of schooling. Where poor households borrow to finance fees, as they do in Ghana, this can lead to debt with annual interest of 40 per cent or more. Some fee collection is also known to be coercive. Every dollar spent on school costs by households below the poverty line is a dollar less spent on health, nutrition, and shelter, and fee-paying excludes children from poor households. Just because services to the poorest can be delivered commercially with fees does not mean they should be.

International studies of achievement do not produce consistent findings that privately financed schools outperform public ones when appropriate value-added controls are applied. In many countries, there is a long list of public schools that perform as well or better than private schools, and differences between school types, after correcting for cultural capital and so on, are small and not in consistent directions. The problem is that there are not enough fee-free high-performing public schools addressing the needs of low-income households, not that they do not exist or cannot be replicated.

The arguments in favour of continuing to invest in the development of publicly financed and provided basic education systems are compelling. First, public systems are the only guarantors of the right to basic education. Second, public systems have delivered much additional access, at very low costs, to households and include many schools of quality. Third, fee-free public systems reach children who would not otherwise attend school, and enrol the poorest who are of little commercial interest. Fourth, resource gaps can only be filled by public policy which adopts appropriate fiscal policies, projects political will to universalize access, and promotes pro-poor redistribution of educational opportunity. Fifth, systemic risks are real where there are increasing dependence on an array of private-sector providers, limited capacity to supervise, opportunities for rent-seeking, and sensitivity to the business cycle.

Sources: Riep, 2014; Akaguri, 2014; James and Woodhead, 2014; Härmä, 2010; Lewin, 2015*a*.

There is no consistent evidence that privately financed schooling produces higher achievement than publicly financed schools when fair comparisons are made. More often than not, the performance curves of publicly and privately financed schools overlap, as they do in Ghana (Djangmah, 2011), indicating that there are high-performing and low-performing privately financed schools as well as high-performing and low-performing publicly financed schools. This is also reflected in PISA studies of achievement across 72 richer countries (OECD, 2009). There is no evidence to associate particular methods of financing with specific or exclusive curricula and pedagogies. Rights to a full cycle of basic education require that education is regarded as a public good that is available free at the point of service delivery. When schools charge any fee to households below the poverty line it has the immediate effect of making the household poorer, and diverts expenditure from health, nutrition, and other priority categories of investment and consumption.

School financing

School financing remains central to problems of expanded access through to the end of lower secondary school. Universal access to primary and secondary schooling is achievable in low-income countries if more than 2.5 per cent of GDP is allocated to basic education[11] and costs of delivery at different levels mirror those in countries which succeed in enrolling all their school-age children. *Box 3.7* illustrates the basic equation that links expenditure and participation. This means that cost per student at primary level cannot be much more than about 12 per cent of GDP per capita, and at lower secondary level about twice that, at 24 per cent. This implies that if teacher-pupil ratios are in the range of 1:40, teachers' salaries will be constrained to about four times GDP per capita in a typical low-income SSA or SSEA country (Lewin, 2008). Where population growth rates are low and demographic transition has taken place, such that primary-age children number less than 15 per cent of the 15–65-year-old labour force, it may be possible to enrol all children for less than this level of commitment. Where extensive use is made

11. Total allocation to education including further and higher education and other commitments is likely to need to be over 5 per cent of GDP.

of low-paid para-teachers on short-term contracts they may be paid less than these ratios suggest. They may also be less effective and less inclined to invest in improving their capabilities if no career pathways exist to secure career employment. For countries with more than 30 per cent of the population below the poverty line, educational services will have to be subsidized so that direct and indirect costs can be afforded by those in the lowest quintiles of household income. In practice, in most countries, this means that for the lowest two quintiles the service must be free and indirect costs to households must be minimal.

Box 3.7 Educational financing: How much is needed?

Sources of finance for educational development need to be understood and assessed in relation to educational development plans. There are many ways of doing this, linked to national accounting practices and the politics of resource allocation across and within sectors of public expenditure. How much is available to support development depends on domestic revenue (how much tax and other income governments collect) and what proportion of that they allocate to education.

The simplest method of outlining the aggregate of the recurrent costs of expanding schooling towards defined targets, such as universal enrolment to Grade 9, can be calculated using the equation:
X = GER x A x C where:
X = Public expenditure on education as a percentage of GDP
GER = Gross enrolment rate
A = The proportion of the population of school age
C = Public expenditure on education per student as a percentage of GDP per capita

This sets limits to the minimum amount of funding necessary to support given levels of participation. If GER = 100 per cent, participation of children aged between 6 and 14 years (Grades 1–9) is desired, the cost of a school place averages 20 per cent of GDP per capita, and the 6–14-year-old age group is 15 per cent of the total population, then 3 per cent of GDP must be allocated to basic education, as indicated below.

X = 100 x 0.2 x 0.15 = 3 per cent of GDP

In low-income countries C may be 20 per cent of GDP per capita and A can be as much as 25 per cent if there is high fertility and no demographic transition. In this case, X would have to reach 5 per cent of GDP for the basic education budget alone, a level no country sustains. Most low-income countries spend less than 3 per cent and many less

than 2 per cent of GDP on basic education. The implication is clear. Since the number of children in the population cannot be changed in the short term, cost-saving reforms and efficiency gains are needed to make expanded access affordable.

Source: Lewin, 2008.

Non-tuition-fee costs to households of primary schooling are becoming more important for exclusion than tuition fees. Bangladesh (Hossain and Zeitlyn, 2010), India (Govinda, 2012), and Ghana (Akyeampong, 2010) have tuition fee-free primary schooling, as does South Africa for children from the poorest quintiles (Motala *et al.*, 2007). Lower and upper secondary schools can and do charge fees. Informal and additional fees are widely levied for services, and other contributions are invited or expected. Other costs to households (such as transport, uniforms, learning materials, and food) can be high and may exceed formal school costs (Akaguri, 2014). Capitation grants to schools have been introduced in some countries (e.g. Ghana), with the expectation that this income to schools will replace lost fee income once tuition fees are abolished (Akyeampong *et al.*, 2011). In the case of Ghana subsidies were introduced with the expectation of fee-free schooling but, in fact, subsidized the relatively rich more than the relatively poor. Those from richer households participate more and for longer at lower costs than before because the subsidies are given to all children.

Equity and political will

Greater equity in participation in basic education remains elusive but is essential to realizing rights to education. Access to education remains strongly associated with household wealth despite commitments to pro-poor policies and investment of resources. Evidence from 13 sub-Saharan African countries using national data from the 1990s and 2000s shows that although overall participation has increased, the chances of the poorest being enrolled, relative to those of the richest, have generally not improved substantially, and in some cases have deteriorated. Reductions in the number of children out of school have in many cases been accompanied by an increase in the proportion of children over-age for the grade in which they are enrolled. Poorer children are more likely to be over-age and unlikely

to complete schooling, especially if they are girls. Girls are more likely to be out of school than boys in most of the Francophone countries but not in most of the Anglophone countries. In all the Francophone countries in the sample, rural children were more likely to be out of school, but this was only true in one Anglophone case. Rural children remain more likely to be over-age (Lewin and Sabates, 2011).

Inequalities have persisted in access to education, with the poorest being excluded in greater proportions. Data from Bangladesh show that in all the zones of exclusion (Hossain and Zeitlyn, 2010) inequality results in much greater exclusion of the poorest. While urban dwellers are regarded as better off, the lack of schools to service urban slums and the inability of the urban poor to afford private schools means that they may be completely excluded (Cameron, 2011). In India, indicators of access are low for Muslims, low castes, and tribal groups (Sedwal and Kamat, 2008), as well as for girls (Bandyopadhyay and Subrahmanian, 2008). This shows the powerful effects of social exclusion. Regional disparities in India also mean that some states are doing well while other lag behind (Lewin, 2011*b*), and even within states, remote areas or regions inhabited by minority groups may be poorly served by the education infrastructure. The message is clear. Though there has been progress, it falls far short of the gains that were anticipated. Much more progress is needed to achieve universal access with equity and to close the gap between the poorest and other households.

Political will is crucial to efforts to provide more access to excluded communities. It has to be reflected in sustained commitment, resource allocation, and the advocacy of key stakeholders. An example of how a marginalized community successfully acted to close the gap in participation in education between its children and those of a majority community is provided by the case of plantation Tamils in Sri Lanka (*Box 3.8*).

Box 3.8 Planning, progress, and political will

From the 1980s on, the previously disadvantaged plantation Tamil community of Sri Lanka began to enjoy increased access to primary and secondary education. How and why did this happen? The explanation involves economic, political, and socio-cultural changes, the actions of powerful agents for change – politicians, planners, and teachers – and the formulation and development of a long-term education plan, supported by foreign aid, over more than 12 years.

- From the 1970s, the government took over more than 800 schools from the owners of tea and rubber plantations in a phased manner following the nationalization of the plantations.
- The granting of citizenship to stateless Indian Tamils created new demands for education.
- The decline in the profitability of tea production, the growth of a labour surplus, and the rise of youth unemployment in the plantations reduced the opportunity costs of child and young people's labour.
- A growth of foreign aid for social sector development in the plantations supplemented limited government resources.
- A small but growing critical mass of ambitious young teachers of plantation origin provided powerful role models for the next generation of primary and secondary school students.
- The determination of a small group of education planners, officials, and senior teachers in the regions, and in the Ministry of Education, created plans and a determination to implement them.
- The political will of politicians in the context of civil war provided a positive environment for change.

By the mid-1980s, a small but growing number of low- and mid-level planners and education officers were working in national and regional education administrations to implement every programme that could be of benefit to plantation teachers and plantation schools. Building on experience from the implementation of an education plan for 42 schools in one district, they developed a 12-year plan for plantation sector education in all plantation districts. The Swedish International Development Cooperation Agency (SIDA) granted funding to three phases of work.

How, during a period of civil war between Sinhalese and Tamils and the economic decline of the plantations, could a group of hitherto disadvantaged Indian Tamils enjoy increased access to education? The leaders of the two main political parties in Sri Lanka have long understood

the importance of votes from minority parties to deliver them to power. The Ceylon Worker's Congress, which has traditionally represented Tamils working in the plantation sector, chose not to support calls for an independent Tamil state and chose instead to promote the interests of the plantation community from within government. Seizing every opportunity to wring concessions from the state, the party promoted increases to the minimum wage, improved housing, resolved the issue of Tamil citizenship, and improved education. The political will exerted in government indirectly supported the efforts of education planners and teachers to expand access to primary and secondary education.

Sources: PSEDP, 1996; Little, 1999, 2010*c*; McGillivray, Pankhurst, and Carpenter, 2012.

Concluding remarks

Many of the findings detailed in this chapter have general applicability but there is always the risk that when findings from one national context are translated into another, external validity may be low. Part of any planning process is to commission system-specific research to validate findings from elsewhere. This is needed to establish content and predictive validity, as well as to provide a robust evidence base for policy-making.

Planning of any kind needs consensus as to goals and a shared commitment to the kind of political economy that makes the achievement of desired outcomes feasible. Which goals are likely to be achieved and which necessarily involve prioritization at the political level can only really be understood and acted on when translated into appropriate objectives with specific targets and indicators. It is to this set of issues that I turn in the next chapter.

IV. Planning goals, objectives, targets, and indicators

Introduction

This chapter identifies the planning issues that concern the development of goals and objectives, and the targets and indicators to which they are linked. Strategies for development depend on clear definitions and the prioritization of goals and objectives that can be converted into activities that lead to valued outcomes. Such strategies are system-specific since they depend on current status, capacity, appetite for reform, and the political economy of resource mobilization. Targets and indicators are important not only because they allow monitoring of progress, but also because they give substance to the definition of goals and objectives. The realization of goals and objectives cannot be separated from targets set to manage activities and the indicators needed to monitor progress. It is therefore essential to understand what targets are appropriate and what can and cannot be measured by different types of indicator.

In discussing the issues, it important, first, to examine how goals and objectives are linked to targets and indicators and the key issues that planners must consider when developing plans that can be converted into implementation strategies and monitored. Once this is done, it is possible to use examples to demonstrate the strengths and weaknesses of different sets of indicators – this chapter considers two – linked to targets for universalizing access to basic education. This can illustrate some of the problems that arise in the use of types of indicator and helps develop a set of criteria that can be used in devising more appropriate indicators to monitor progress.

Goals, objectives, targets, and indicators

Political systems often set goals without specifying the objectives, targets, and indicators that will inform the choice of programme implementation strategies, the allocation of resources, and the type of mechanism used to monitor and evaluate progress. It is only when

goals are translated into time-bound objectives, clear targets, and measurable indicators that meanings can be shared and commitments made to deliver the resources necessary to achieve the goals. The risks of believing that goals and objectives can be set without reference to targets and indicators are clear. Thus the process that has resulted in the Sustainable Development Goals and their educational component has led to several goals which will be difficult or impossible to track though indicators at imaginable costs (Lewin, 2015*b*).

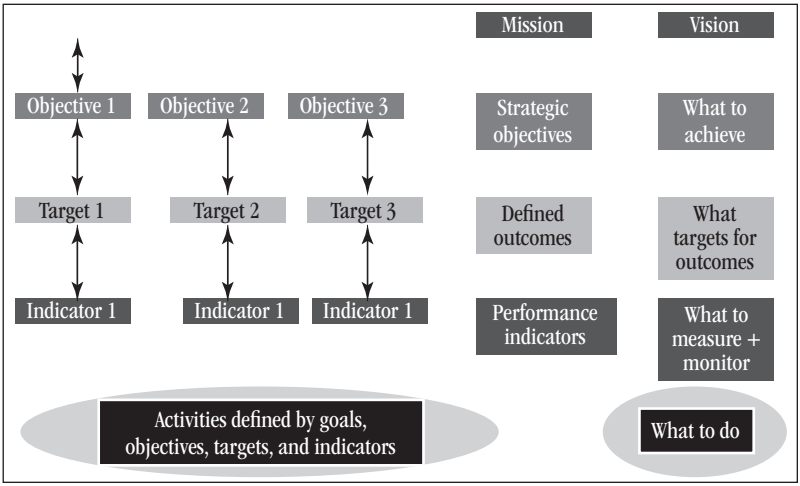
There are many reasons which explain why education plans do not always result in the desired outcomes. These include a lack of sustained political will, poor mobilization of resources, unclear responsibilities for action, changing priorities, and inadequate infrastructure. The failure of political goals may also be because the goals themselves are unclear, the objectives are not sufficient to achieve the goal, the targets are unattainable given the resources available, or the indicators used do not capture all the factors critical to achieving the goal.

In a rational model of planning, goals, objectives, targets, and indicators should stand in a logically contingent relationship with each other. *Figure 4.1* gives a schematic representation of this in a hierarchical model. Goals are determined by political systems that seek consensus as to how education systems should develop in more or less democratic and participatory ways. Whatever goals are agreed need to be reflected in the system-level objectives used to programme activities. These need to be prioritized as part of a strategy. Objectives need to be linked to targets, with defined outcomes at specific points in time. These provide milestones towards the achievement of objectives. Indicators are needed to measure and monitor progress. All these levels of policy and planning interact (hence the double-ended arrows) since decisions at one level have implications for other levels. Activities needed to achieve goals are defined by objectives, targets, and indicators, along with other considerations, including the resources necessary and the responsibilities to act.

Planning in the real world may have many other dimensions and organizational features. This means that there are limits to how well mechanical models can explain process and practice, and the politics of the possible. These can be explored and understood in detail in

relation to different national systems. Nevertheless, this simple model does identify some common features of how ministries of education are organized as bureaucracies with hierarchical accountabilities and departmentally divided responsibilities. It is also consistent with the LogFrame and Gantt charts[12] widely used in conventional project planning.

Figure 4.1 Goals, strategic objectives, targets, and performance indicators



There are several issues that arise for planners. The first concerns the setting of goals and objectives and their origin, ownership, and legitimacy. Goals are generated by aspirations and visions for future educational provision that supports national development. They are devised by those with responsibility for governing and generating political consensus around development priorities. Objectives for education systems can then be developed to manage progress towards defined goals. This needs technical inputs from specialists and the

12. LogFrames and Gantt charts are widely used to plan development projects in education and other sectors, and define goals and objectives, activities, and verifiable indicators of outcomes linked to timelines.

identification of relevant departments of government responsible for achieving outcomes related to the objectives.

Origin, ownership, and legitimacy are essentially political issues that cannot be resolved technically. However, they can be refined by technical inputs that identify logical contingencies and inconsistencies, provide indications of resource constraints, and derive lessons from past experience. Consensus as to goals and objectives, and acceptance of their legitimacy, will be central to any successful attempt to manage change. National policy-making has many different trajectories, dependent on the political economy of education in different countries. It is always important for planners to understand the sources of official statements of goals and objectives, and to determine how they interact with existing education systems and their capacity to implement reform.

Second, the objectives identified for education systems need to contribute to the achievement of whatever goal has been identified. This may seem obvious but is not always the case. As systems evolve, goal displacement can take place as development programmes acquire their own momentum, sub-components are added for opportunistic reasons, and programme managers lose sight of the overall goal. To be useful, objectives must be specific (i.e. clearly specified with action verbs, subjects, and defined terms), measurable (either directly or by a proxy), achievable (since unattainable goals have little credibility), relevant (i.e. serving a valued purpose), and time-bound (objectives without a timeframe are not very useful).

Third, targets for educational development can be expressed in many different ways. Progress towards an ultimate goal (e.g. all children enrolled) is different from progress measured by improvement relative to past performance (e.g. 5 per cent more children enrolled this year than last year). This is different, again, from progress measured against comparisons with benchmarks derived from elsewhere (e.g. improved ranking in international tests).

Fourth, the use of averages to measure gains (e.g. in enrolment rates, gender parity, and achievement scores) may conceal changes in distribution (e.g. 5 per cent more children may be enrolled but there may be no change in the enrolment rate of the poorest if gains are much greater among the middle poor). Averages may need to

be weighted (e.g. the arithmetic average of enrolment gains across all schools based on total enrolments may be different from the average of enrolment growth based on averaging school-by-school percentage gains).

Fifth, standards applied to assessing targets can be uncertain. Providing basic education for all seems clear, but it could mean enrolling:

- all children in the age range in any grade;
- all children successfully completing x years of basic education at any age;
- all children succeeding in reaching basic education learning competencies; or
- all people in the population, including adults, completing basic education.

Sixth, distributional targets and indicators are often neglected. How improved distribution can be assessed depends on agreement about what dimensions of equity matter, for example, whether it is household income, ethnicity or language group, location, gender, disability, achievement, or attainment that is of concern. The various possible indicators include comparisons of the most favoured and least favoured groups (e.g. the top and bottom wealth quintile participation rates in secondary schooling), Gini coefficients (e.g. showing how much public subsidy of education varies by wealth group), standard deviations (e.g. of pupil/teacher ratios) showing dispersion from the mean, and gap indicators (e.g. of the gap between girls and boys in reading achievement).

Seventh, monitoring and evaluation of progress towards targets may be subject to moral hazard. This can occur if funds for development depend on meeting targets which, when met, result in less development funding in future. It is also likely that, if targeting is associated with high-stakes decisions, reporting systems will be 'gamed' to maximize apparent performance and conceal shortfalls.

Eighth, goals and targets are often set by decision-makers some distance from those charged with implementing them. 'Target setters' live in a different world from 'target getters', and relationships between them can be unclear. Delegating responsibility to achieve

targets without delegating authority and control over necessary resources is a recipe for frustration and goal displacement.

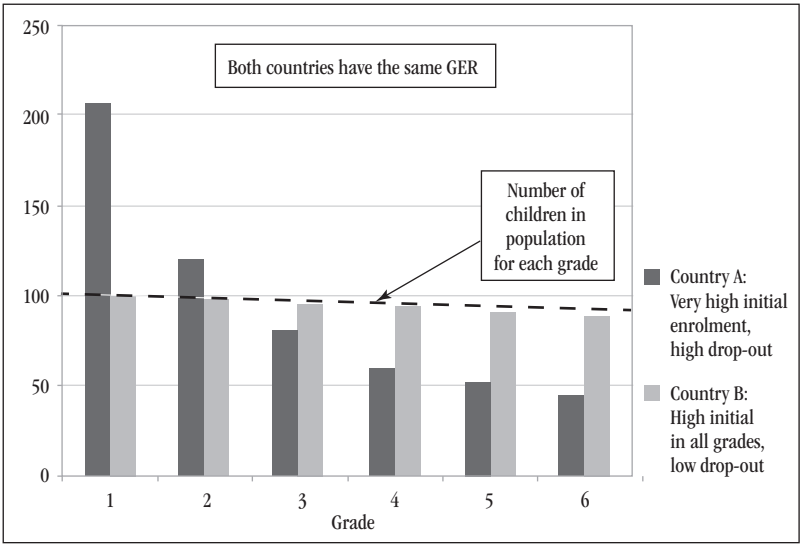
Lastly, much goal and target setting assumes that specific targets can be realized independently of other targets. This, however, is rarely the case. Sustained enrolment gains depend on many things, including teacher supply and the provision of learning materials. Likewise, reductions in gender disparities depend on what is happening to both girls and boys, while investment in primary schooling interacts with investment at higher levels. Some targets have causal relationships with others. Thus, planning to improve achievement levels may be dependent on more regular attendance of children and teachers, and reduced over-age enrolment.

The next section builds from these general observations about goals, objectives, targets, and indicators, and focuses on the analysis of indicators widely used to determine progress towards goals set for universalizing basic education. Problems associated with the use of gross and net enrolment rates and the gender parity index illustrate issues that arise with many other indicators.

Exploring gross and net enrolment rates

Gross enrolment rates (GERs) and net enrolment rates (NERs) are used to indicate progress towards universal access to primary education. These indicators calculate an index based on the number enrolled across the whole cycle of schooling, rather than grade by grade. This can mislead. *Figure 4.2* shows enrolment by grade for two countries. The first has high enrolment rates in every grade and little drop-out, and is typical of OECD countries with almost full enrolment at primary level. The second case is similar to many low-income countries which have had high levels of investment in Education for All programmes designed to universalize access, for example, Uganda, Malawi, Nepal, and Myanmar. In these countries, enrolment in Grade 1 is much greater than the number of children who are of Grade 1 age. Many enter over-age and some under-age. Drop-out is rapid and no more than half of the age group succeed in completing the final grade of primary.

Figure 4.2 Enrolments by grade in two countries with similar GERs



The GER for the primary school cycle is the total enrolment of all ages in primary divided by the age group for primary grades. In this example (*Figure 4.2*), the first country (A) has a GER of 98 per cent since total enrolments are only a little less than the total number of children of primary school age. Interestingly, in the second country (B) the GER is also about 98 per cent because the total of the enrolments for Grades 1 to 6 is the same. However, the pattern of enrolment is very different, with high attrition and few of those enrolling in Grade 1 reaching Grade 6. GER as conventionally calculated is not a good indicator of participation and does not draw attention to key policy issues such as over-age enrolment, repetition, and drop-out patterns.

NERs compare the total enrolment of children in the primary age cycle with the total number of primary school age children in the population. They therefore exclude those over the nominal age for the last year of primary (but not those who are over-age in lower grades). NERs are often considered a better indicator of participation

than GERs. If we make small assumptions about the distribution of over-age children within the primary cycle then the NERs for the two countries under consideration are also very similar. Without knowing how children are distributed across grades, how their age distribution within grades varies, and how this changes over time, NERs are difficult to interpret and changes in values can have more than one cause.

There is, therefore, a need for better indicators to inform decision-making at national and international levels and to support it in capturing the composition as well as the quantity of enrolments across an educational cycle. Some of the issues are definitional. If full enrolment is the goal, does this mean that every child of school age (6–12 years) should be in school? Does it mean that they should be in school in the correct grade for their age? Or does it mean that all children complete six years of primary schooling, whatever age they graduate?

The value of the GER can exceed 100 per cent since total enrolment at any age is compared with the age group. Many low-income countries have GERs of 130 per cent or more, as has been the case in Malawi, Uganda, Tanzania, Rwanda, Myanmar, Nepal, Lao PDR, and Cambodia. This indicates that many under-age and over-age children are in the system. Grade-specific enrolment rates[13] in low grades will be higher than the average for Grades 1–6, and may exceed 150 per cent or more in Grade 1. As the internal efficiency of a system improves it ought to be the case that the value of the GER falls since fewer over-age children are enrolled.

This creates a paradox for targeting. If the GER is very low and below 100 per cent, it would be expected to rise as participation increased. However, when GER is over 100 per cent (and even, in some cases, where it is less than 100 per cent) its value should fall when the number of over-age children in the system falls, as a result of more regular enrolment and progression. Setting a target value for GER is ambiguous. The same value of GER can arise with different mixes of children in school. Whether GER is below or above 100 per cent, it is not clear what it means for participation when it increases or

13. Grade-specific enrolment rates are defined by the number enrolled in a grade divided by the number in the age cohort appropriate for that grade.

decreases. NERs cannot exceed 100 per cent, by definition. However, it is also true that changes in a positive or negative direction below 100 per cent are ambiguous if the composition of repeaters changes.

There are other issues associated with using GERs and NERs as indicators of progress. First, measuring GERs and NERs requires accurate school-age population data to determine the denominator. The errors this introduces are errors associated with the original data collection, and with the assumptions used for census projections. In India, official projections continue to assume that, in many states, fewer females will be born and survive than males, illustrating some of the risks of using such projections.

Second, the problems with census data and the uncertainty of projections based on it may lead decision-makers to exaggerate or underestimate numbers of children and to fail to anticipate demographic transitions. Over a 10-year period this can easily generate estimates of the school-age population that vary by more than 20 per cent.

Third, data derived from household surveys are likely to lead to over-reporting of enrolments as a result of the status biases of enumerators and respondents. Where there is compulsory school legislation, households may be unwilling to admit that children do not enrol or attend, while some households may not be captured at all in surveys (illegal immigrants, remote settlements, marginalized ethnic groups, etc.). Nevertheless, data from household surveys are essential since they represent the only way to capture the attributes of out-of-school children and their reasons for dropping out.

Fourth, administrative data from annual school census surveys may over-report enrolments, especially where there are financial incentives to maximize enrolment (e.g. capitation grants). Conversely, administrative data may also under-report where much enrolment is private, or privately managed, and there is an interest in avoiding regulation, tax, and accountability.

Fifth, GERs and NERs depend on accurate data on the size of the age group. NERs need accurate data on the ages of those enrolled. This often has a high margin of error in low-enrolment countries. Many children do not know their age and have no birth certificates.

Sixth, the significance of changes in the value of an indicator reduces as limits are approached. Possible gains in the value of the NER when it is 97 per cent have a different meaning than when the NER is only 60 per cent. Thus, a 5 per cent gain in NER from 94 per cent to 99 per cent may be more difficult to achieve than a 5 per cent gain from 60 per cent to 65 per cent.

Exploring the gender parity index

The gender parity index (GPI) is widely used to assess the extent to which boys and girls have equal access to education. The Global Monitoring Report (GMR) uses a GPI based on the gross enrolment rates for girls as a ratio of the gross enrolment rate for boys.

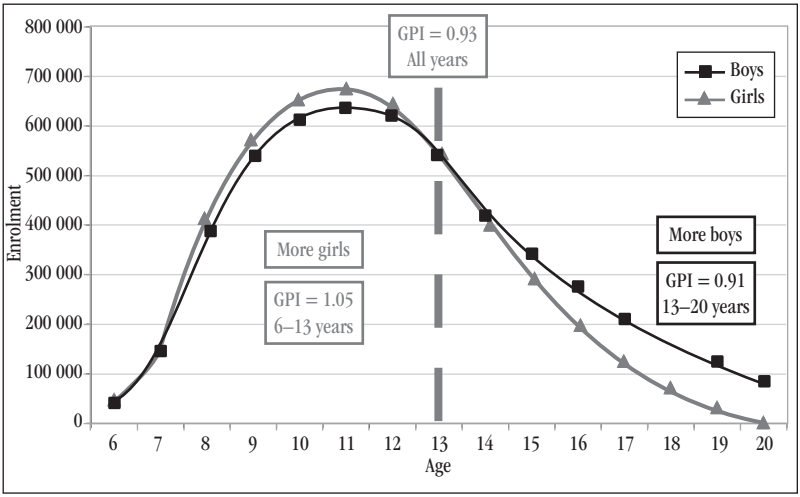
GPI = GER (girls): GER (boys)

At first sight, this appears an adequate measure of gender disparity in participation. But it is not, for two important reasons.

First, GERs include those both over-age and under-age. The mix of under- and over-age may not be the same for girls and boys in the respective GERs. Often, in low enrolment countries, the average age and age range of girls enrolled is narrower than for boys. Typically, boys persist longer to older ages before drop-out or completion. *Figure 4.3* illustrates this.

In this model, which is based on country data, there are more boys than girls enrolled in primary school and the overall GPI is 0.93. Below the age of 13 years, there are more girls than boys and the GPI is 1.05, confirming an imbalance in favour of girls. Over 13 years old, there are more boys than girls and the GPI is considerably different at 0.91. When the overall GPI is examined, with the distribution shown, it seems that the enrolment of girls is a problem at all ages. However, closer examination shows that it is not a problem below the age of 13, since more girls than boys are enrolled. The problem is better described as twofold. Girls enter school younger but leave earlier, often before completion of primary school. Boys enter later but are more likely to remain enrolled, sometimes up to the age of 20. The preferable solution is not to keep girls in school longer to equalize the GPI, but to ensure boys and girls progress on schedule for their age and do not drop out at different rates.

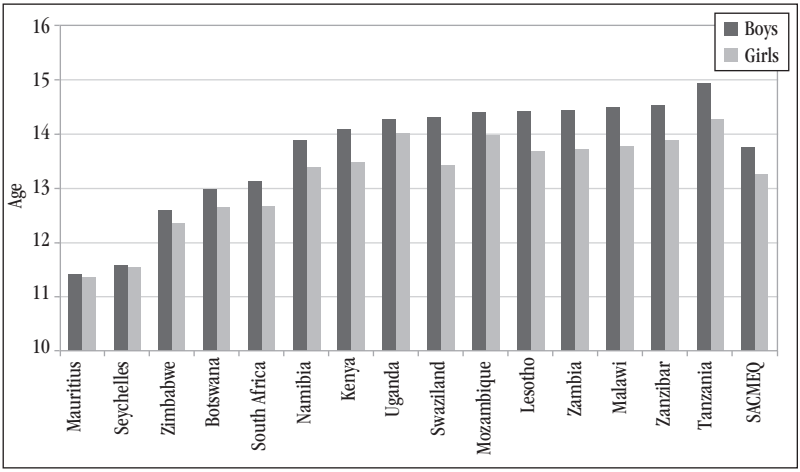
Figure 4.3 Enrolments by age in primary schools: boys and girls



Source: Author.

The overall GPI can, therefore, conceal the true pattern of enrolment and gendered inequalities. In all of the 14 SSA countries that take part in the Southern and East African Consortium for Monitoring Educational Quality (SACMEQ) survey, the average age of girls at Grade 6 is less than the average age of boys (as shown in *Figure 4.4*). Differences in age-in-grade enrolment between girls and boys are, evidently, common in SSA and need careful interpretation before assuming patterns of causality and determining what interventions are likely to be effective.

Figure 4.4 Enrolments of boys and girls in Grade 6, SACMEQ sample



Source: Adapted from SACMEQ, 2012.

A numerical example further illustrates the point. *Table 4.1* models the enrolment of boys and girls in a country where girls enrol younger but drop out faster after the age of 13. In this system, the total number of girls of all ages enrolled is less than the number of boys enrolled but the number of school-age boys is the same as the number of school-age girls in the population and is set at 500,000. The GER for girls is about 96 per cent and 103 per cent for boys, in this example. The GPI is 0.93, suggesting that there is a problem with the under-enrolment of girls.

However, if we use NERs rather than GERs to calculate the GPI, we can compare the numbers of school-age boys and girls who are enrolled with the total number in the population. In the example, the NER for girls would become 62.6 per cent and 59.9 per cent for boys. The GPI then becomes 1.05, correctly indicating that within the school-age group more girls are enrolled.

Table 4.1 Enrolment rates and GPI

	All ages		6–12 year olds
Girls enrolled	478 303	**Girls enrolled**	313 107
Boys enrolled	515 035	**Boys enrolled**	299 384
Girls in school-age population	500 000	**Girls in school-age population**	500 000
Boys in school-age population	500 000	**Boys in school-age population**	500 000
GER girls	95.7%	**NER girls**	62.6%
GER boys	103.0%	**NER boys**	59.9%
GPI	0.93	**GPI**	1.05

Source: Author.

The dilemma of interpretation in this example is clear. GPIs based on GERs suggest that special arrangements are needed to promote girls' participation. GPIs based on NERs lead to the opposite conclusion. The profile of enrolments by age makes it clear that, assuming child age groups are of equal size, boys enrol later and persist longer. An overly simple reaction to either value of GPI misdiagnoses the probable issues and the arenas in which intervention is required.

In this example, desirable interventions could be drawn from the following list:

1. Ensure boys enrol on-schedule, rather than later than girls.
2. Monitor and minimize repetition and age-grade slippage – there is no educational reason why this should be gendered.
3. Act to ensure girls in particular reach the end of the basic education cycle before drop-out rates, associated with older ages and puberty, accelerate.
4. Consider appropriate responses to reduce the number of over-age boys persisting in the system two or more years over the age for their grade.

If the GPI is to be used, it is clear that caution is required in interpreting its value and changes in its magnitude, as well as any differences there may be in different regions and districts. In some part of northern India, for example, there are now fewer than 80 girls

for every 100 boys. Using a GPI that includes population data may mislead – enrolment rates can be similar for girls and boys, and GPI may be close to 1.0, but there may be far fewer girls to enrol. Grade-specific enrolment rates, organized by gender, coupled with absolute numbers of boys and girls enrolled, are needed to understand gendered patterns of exclusion.

Improved indicators

In general, grade-specific enrolment is a much better indicator of how flows of students through a system change than aggregated enrolment rates that use estimates of the school-age population. Raw enrolment numbers organized by grade only have the errors and uncertainties of the original data. How they change in relation to the number of children in the population nominally associated with each grade is a good indicator of changes in participation that can be easily understood.[14] This can be done for boy and girls separately and the results compared in the light of the balance of boys and girls in the child population.

Gross intake rates (GIRs) capture enrolments in Grade 1 as a proportion of the relevant school-age population. Though these are composite indices, if they are at a single grade level they do not have the problems of aggregation across grades and changing composition by age associated with GERs, NERs, and GPI. The GIR is the total number of new entrants in the first grade of primary education, regardless of age, expressed as a percentage of the population of the appropriate entrance age. The gross intake rate to the last grade of primary (GIRLG) is defined as the number of students entering the last grade of primary education compared with the number of children in the appropriate age group in the population. Both, therefore, offer grade-specific enrolment rates and can be calculated for boys and girls.

Changes in GIR reflect changes in enrolments in Grade 1, which should track the growth in the population of school-age children when

14. This assumes a degree of consistency in any systematic errors that may result in over- or under-counting. The direction of travel of the numbers enrolled is likely to be more reliable than the actual number counted.

there is universal access. Where there are out-of-school children, GIR should increase faster than the underlying growth rate in school-age children as enrolment rates improve. Tracking the rate of change year on year will be a good indication of whether targets to enrol all children in Grade 1 are likely to be met.[15]

Similarly, the GIRLG allows changes from year to year to be interpreted with less uncertainty than the GERs and NERs for a whole cycle. The number of children in the last grade of a cycle should approach the number in the age group of children appropriate to that grade. This should grow faster than the rate of growth of the school-age population until universal access and completion has been achieved. However, the GIRLG does not provide any information as to whether or not those completing the last grade of the cycle have learned anything.

An improved indicator would associate the GIRLG with the proportion of those completing the last grade who reached threshold levels of achievement related to national curriculum goals. The same is true for secondary completion rates at different levels. More generally, a primary yield indicator (PYI) may be preferred. The PYI is the number of children who complete the last year of the primary cycle in a particular year, multiplied by the proportion who satisfy minimum learning criteria set by the national curriculum and divided by the number in the relevant school age group. This captures the spirit of an expanded vision of access, which insists that educational participation has to be coupled with learning outcomes. New formulations of educational targets and indicators should adopt the PYI[16] or a derivation in the spirit of a similar learning indicator.[17]

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15. This needs to be linked to data collection on the age of entry.
16. This depends on data being available. Most countries have national assessment data that allow judgements to be made on the proportions of those who sit primary and secondary school examinations who reach minimum levels of achievement. International benchmarking tests are less widely available and may be difficult to administer. They are not essential to inform policy using indications of learning yield, which can be based on national data.
17. Learning indicator may be a preferred descriptor to the PYI, providing it is understood to include not only level of performance on assessments but also the proportion of all children who achieve the level.

The GIRLG can also be refined through the use of an on-schedule graduation rate (OSGR). This seeks to compare the numbers of children completing a cycle who are of the age appropriate to the grade level with the total number in that age group. In the case of primary school cycles with an age of entry of 6 years and a duration of six years, this translates into the number of children completing Year 6 who are 12 years old. In low-enrolment systems this rate may be as low as 20 per cent. Using the OSGR gives a proxy indicator of the extent of over-age enrolment. Since in many countries over-age children are known to perform worse and be more likely to drop out, this is an important dimension to capture (Lewin and Wang *et al.*, 2011).

The single most important intervention that can improve evidence-based decision-making on participation is likely to be regularizing information on children's identity and school progress. At a minimum, all children need, or need to be given, a birth certificate and a unique identifying number that can be used throughout a school career to track progress, even if they change school, civil status, or even their given name. This is a most basic function of a state (to know who its citizens are), and of an education system (to know who is taking part and what they may be learning).

Criteria for developing targets and indicators

Much more could be said about the wide range of targets and indicators that have been used by different actors to assess progress. From this analysis, and some more general considerations, it is possible to identify 12 criteria for planners that should be considered when identifying, specifying, and using different kinds of targets and indicators.

1. Ambiguous interpretation

The value of some indicators may not always move in the same direction when systems are improving. This can confuse. Thus, GERs often overshoot during periods of rapid enrolment growth to over 100 per cent, before dropping back to the values found in high-enrolment countries. This is because of varying numbers of over-age children and repeaters within the total number enrolled. Many policy-makers and the general public expect indicators to move

in one direction (generally upwards) when things are improving, and for changes to have the same meaning over different ranges.

2. Approaching asymptotes[18]

When the value of an indicator approaches a limit, changes in its value become smaller and smaller, more difficult to measure, and are often of less and less significance. Net enrolment rates above 90 per cent, and certainly above 95 per cent, become difficult to measure accurately, year on year changes in their value will be small, and they will approach 100 per cent asymptotically. The same is likely to be true of gender equity and the GPI, adult literacy, and levels of attainment.

3. The significance of significance

Differences in the value of indicators may be significant, in the statistical sense of being unlikely to occur by chance less than 5 per cent or 1 per cent of the time, yet have little practical significance if the magnitude of the effect is small. For example, GPI 0.96 means that, out of 100 boys and girls, 46 girls are in school and 48 boys. Only two children out of 100 have a different enrolment status by gender. On large samples these differences are likely to be statistically significant. However, whether they are significant *for policy* is another matter, even if it is possible to target the small numbers who account for the differences between groups.

4. Inter-relationships between indicators

Differences between groups are generally much smaller than differences within groups. Thus, whatever the differences in enrolment, or measured achievement, between boys and girls, it would be very unusual if the differences among boys and among girls were not larger than those between the groups. Thus, a kind of horizontal equity (differences between groups of boys and girls) may be much less important than a vertical equity issue (differences

18. Asymptotes occur when the values of a parameter approach a limiting value in such a way that the distance between the curve determined by the value of the parameters and the limit approaches zero as the values tend to infinity. For example, we might expect that the net enrolment rate approaches 100 per cent ever more slowly and never quite reaches that value because the last children become more and more difficult to enrol and retain in school.

in performance between rich and poor boys, and between rich and poor girls). And diminishing one kind of difference may require diminishing another kind.

5. Correlation is not causality

The causes of changes in the values of indicators can be complex and are not necessarily determined by correlations between indicators. If rural children have higher drop-out rates than urban children it does not mean that rurality causes drop-out. Rural households may be poorer, the distances to school greater, the costs higher as a proportion of household income, and the quality of schools may be lower. All these things are not necessarily a function of rurality, but they could all be correlated. The attribution of changes in the values of indicators to a single cause must exclude the possibility that the changes have arisen through any other causal relationships and/or would have happened anyway.

6. Regressions only explain a proportion of the variation in indicators

When several independent variables are correlated with a dependent variable they may still not explain much of the variation in the dependent variable. Thus, gains in enrolment rates (a dependent variable) may be correlated with investment in schools, the pupil/teacher ratio, increased household income, location, and achievement levels. But all these things together may explain less than half of the changes in enrolment rates. The proportion of the variance explained is important, as well as whether it is significant.

7. Composite indicators are almost always difficult to interpret

Composite indicators generally suffer from ambiguity. When they change it is not clear which element is responsible for the change. Thus, the Education Development Index (EDI) of the GMR is a composite index combining NERs, survival rates, literacy and GPI. When the EDI changes in value it could be for many different reasons. The greater the number of components, the more difficult changes are to interpret.

8. Error of measurement

Nothing can be measured without error. A value always has a margin of plus or minus within which its 'true' value lies. The statistics of this are beyond a general audience. The idea is familiar. If changes in the value of a key indicator are close to the plus or minus band of uncertainty then it would be unwise to believe that anything had changed that was worth reward or sanction. It would simply be unknown, and the safe conclusion would be that nothing has changed. Enrolments, age groups of children, and pass rates have margins of error that should be indicated.

9. Proxies have value

Where something important cannot be measured directly, indirect measures – or proxies – have to be used. For example, the number of non-repeating candidates taking a primary school leaving examination is a proxy for the primary completion rate if the size of the age group is known and enrolments are uncertain. Examination pass rates are a proxy for learning achievement but may not have consistent standards or curriculum coverage. Proxies need to be chosen which are plausible and which can be logically related to that which cannot be measured directly.

10. Time scale and sensitivity

Some things are unlikely to change rapidly. If the performance of school candidates in mathematics improved by more than 10 per cent in one year it is unlikely to be a real increase. Year-on-year gains in enrolment of 10 per cent are also unlikely or, if they are achieved, will almost certainly degrade quality. Low sensitivity indicators of progress towards targets are not useful for short-term monitoring because they do no change a great deal.

11. Costs

Some indicators are too expensive or too inconvenient or intrusive to measure. It is very important to separate that which requires data on every child, that which can be usefully assessed on a stratified sample, and that which may be best approached through sample and targeted reference groups of special interest. Costs partly determine the feasibility of collecting the necessary data.

12. Levels of analysis

Indicators at one level of analysis should generally not be used to draw conclusions at another level. Thus, comparison of average pupil-teacher ratios across school systems in different countries may enable us to say something about the relative costs of schooling. It would be dangerous, however, to conclude anything from the pupil/teacher ratios about the quality of learning or the amount of time spent on-task. We would need data at the level of classrooms and learners and their teachers as well as schools.

Concluding remarks

Educational goals to universalize participation have been shaped by the use of targets and indicators. Without targets and indicators of progress there is a risk that educational developments proceed without the benefit of baseline data, evidence against which to assess the impact of interventions, or causal models of change grounded in the realities of different education systems. Strategies to improve participation, quality, outcomes, and equity all depend on a robust understanding of the relationships between actions and outcomes in particular systems. Independent measures of progress towards desired goals are essential, most obviously to improve decision-making about strategy, based on a diagnosis of the current status, the direction of changes needed, and the distance to travel to desired destinations. Without this, anecdotal reasoning and casual empiricism can create images of reality that suit the motives of those who project them, but which may misrepresent, mislead, and misspeak to policy, and result in very poor resource allocation. Planning should proceed on the basis of what is the case, not what ought to be the case, using indicators that are fit for purpose, linked to targets and goals (Lewin, 1985).

The message of this chapter is that the use of targets and indicators needs careful consideration as they become more and more widely used to manage educational performance and allocate resources.

Consistent efforts to improve the quality of data are essential. National data collection systems are essential to improve efficiency and effectiveness and for rational allocation of resources. Internationally

standardized data collection systems can inform cross-national comparisons where this is seen to be useful in developing policy. For many educational problems, better information is needed below national level to monitor progress and influence the decisions that make the difference between education systems that deliver services effectively and those that do not. The quality of the indicators and targets needs to be different at different levels so that indicators are operationally useful and targets are challenging but achievable. Relative improvement (in age of entry, number repeating, attendance, measures of achievement) is easier to assess and monitor, and more meaningful to most actors in education systems, than ambitions to reach or exceed 'average' or to 'benchmark' levels of performance in all locations. Reductions in disparities in participation and achievement are central to equitable growth at affordable cost, but are invisible without appropriate indicators that are sensitive to changes in distribution and which are widely disseminated.

This chapter has argued that the process of setting and getting targets measured by indicators and defined by goals and objectives remains centrally important to planning reforms to enhance access, progression, and educational outcomes. Goals and objectives and targets and indicators interact and, together, define programmes of educational development that can be implemented.

V. Approaches to long-term planning

Introduction

This chapter focuses on the development of long-term plans for education and the factors that shape plans useful in mobilizing political commitment and identifying financial needs. Long-term planning has to be whole-sector in scope. Planning primary school expansion without due attention to flows and costs at higher grade levels leads to planners overlooking bottlenecks at other levels, for example, insufficient secondary graduates entering primary teacher training, unplanned changes in transition rates, such that motivation to complete a cycle may be undermined, and negative impacts on equity where opportunities become increasingly determined by household income and gender. Comprehensive approaches to planning involve projecting flows of students, identifying needs for teachers, school buildings, and learning materials, and recognizing the financial and non-financial constraints on growth at different levels.

The argument developed below offers a rationale for the use of long-term planning, before outlining three different approaches: planning lite, framework national planning, and participatory planning. It distinguishes between aspirational and target-generating approaches, before describing the processes and tools that are needed to develop long-term plans for expanded access capable of reconciling goals and targets with realistic resource envelopes. These processes are designed to promote consensus and build commitment.

Why medium- and long-term planning is needed

Governments can only finance and implement successful education development strategies to achieve greater participation in basic education if expansion is guided by medium- and long-term planning. Planning must be integrated across different levels of public investment in education, as well as balancing competing priorities, and recognizing interactions between levels and types of provision. It is clear from *Chapter II* that patterns of growth in participation in education have often been uneven between levels and

have sometimes proved difficult to sustain. High rates of growth in participation can lead to reductions in quality, and to the softening of demand for school places, especially at secondary level where costs to households are higher and benefits more difficult to demonstrate. In some countries, expenditure per student has remained static or fallen in unplanned ways, teacher deployment has not kept pace with growing enrolments, and short-term gains have been compromised by falling levels of achievement.

Planning has to recognize that different inputs have different lead times that have to be planned. Procurement, construction, and the equipping of new facilities has one time scale. The training, appointment, and deployment of new teachers has another, and the development and production of learning materials in large quantities a third. Classroom construction and teacher supply are derivatives of the growth in enrolments. The number needed depends on the *difference* in enrolments year-on-year and not the total number. As a result, classroom building and teacher education may need much higher rates of growth than the underlying rate of growth in total pupil numbers. Similarly, growing demand for secondary places as a result of increased rates of primary completion can quickly generate unsustainable cost burdens at current levels of cost per pupil, as in much of SSA.

Well-managed expansion requires consistent investment over the medium to long term to support the costs associated with teacher salaries and teacher training, quality improvement, supplies of learning materials, the revitalization of school management, monitoring and supervision systems, and construction. This needs to be planned at sector level, and not just for primary schooling, since there are many interactions and trade-offs in public-sector investment across education budgets. Future recurrent and development costs need to be met and managed not just over one or two years, but within feasible projections extending over a 10-year period, which are revised and updated annually. Long-term planning is an essential instrument for policy dialogue and a condition for building national political commitment that can be sustained.

The kind of long-term planning which can support policy dialogue within government is also essential for effective external assistance

in countries where external aid is a significant part of educational financing.[19] The propositions underlying aid to education, such as the commitment made in Dakar in 2000 to ensure that 'no countries seriously committed to education for all will be thwarted in their achievement of this goal by a lack of resources' and that 'no country should fail to reach the goals of universalizing access to education for the lack of resources if it has a comprehensive and credible plan' (UNESCO, 2000), require long-term planning. Credible plans are not only concerned with short-term gains, but with long-term and sustainable outcomes. They must demonstrate that future liabilities of expansion (e.g. for teacher salaries, expanded pre-service training, and managed improvements in transition rates to higher levels) are properly anticipated and costed. Large-scale expansion, school building, and quality improvement must also anticipate urban migration and other demographic changes which have implications for the number of children of school age in different places.

Credible planning has to be financed within realistic projections of the domestic resources available. Gaps between the finances needed and those available may be supplemented by external assistance over defined periods, with the intention that, over time, it will be possible to sustain systems entirely from domestic revenue. The size of funding gaps depends on many things, including the political will of national governments, the prioritization given to investment in education at different levels, and the effectiveness with which fiscal policy is used to generate domestic resources. Most importantly, the recurrent cost implications of expansion, embedded mostly in teachers' salaries, have to be assured in ways that do not generate unsustainable public debt.

Where external assistance is required for educational development it will need to be linked to plans with goals, objectives, targets, and indicators that are agreed by national governments and by bilateral and multilateral development partners. Historically, aid

19. The number of countries that are dependent on aid to finance their education systems has been falling and most educational expenditure is now supported from domestic resources. There remain a significant number of fragile states and countries reconstructing their education system after war or natural disasters which continue to benefit from substantial external support to education. Most are in SSA.

to many low-income countries has been contracted to last for short periods (three years or less). It has flowed with varying degrees of reliability and lags between commitment and disbursement. Where external assistance is a large part of the resources available for educational expansion, the uncertainty created by short-term financial commitments increases the risk to successful implementation of growth strategies. Plans need to be constructed with realistic exit routes for development partners in order to accelerate educational development.

Long-term planning has its detractors. Almost by definition, any long-term plan evaluated retrospectively will turn out to be at variance with its intended outcomes. Things can happen faster and slower than anticipated. The planner's paradox remains relevant:

> Innovation is needed in education systems that fail to deliver equitably and acceptable quality of service; innovation is disruptive, resource consuming, and unevenly implemented; as a result, in the short term it is likely to adversely affect the equitable delivery of a service at an acceptable level of quality (Lewin and Stuart, 1991).

Planned change may make some things worse before they get better (e.g. larger class sizes, shortages of learning materials, and increased numbers of untrained teachers). However, this is not a reason for retreating from managing planned change. Planning does, in some people's minds, substitute error for risk. Planning can indeed be wrong (poor technical analysis, unrealistic assumptions, and rigid adherence to out-of-date strategies are among the causes). And, in a sense, one of its purposes is to challenge managers to prove plans wrong and improve them through a continuous process of adjustment. Without effective planning, there are more problems and a much greater risk of arbitrary judgements and decisions influenced by short-term political events, populist slogans, causal empiricism, and idiosyncratic preferences.

Some general principles

Educational plans can be developed in three ways, requiring different processes and timescales (Lewin, 2007*d*). Briefly, *planning lite* takes a broad-brush, macro approach to make order-of-magnitude

estimates of the financial demands created by commitments to enrolment targets and quality-improvement programmes. Costs per student can be used to identify what proportion of domestic revenue needs to be committed to achieve and sustain the defined educational goals and levels of participation. *Framework national plans* use scenarios based on education management information system (EMIS) and census data to project enrolments, infrastructure, and costs systematically at national or regional level. Long-term plans can be linked to medium-term expenditure frameworks commonly used to profile financial needs over a period of three to five years. *Participatory planning* generates plans shaped by inputs from a local level, for example from schools or districts, which are developed using consultative methods before being aggregated and harmonized at a national level in order to form part of affordable and feasible programmes of development.

If estimates are needed quickly, planning lite may be helpful. However, planning lite cannot provide detailed projections which respond to a range of policy options. Framework national plans are flexible tools that disaggregate flows of pupils, demand for teachers, types of school, and so on, and use these to allocate resources through unit-cost estimates of different kinds. These can be used to develop scenarios that identify and respond to different policy options. To be robust, they require adequate baseline data, technical competence, and imaginative programming that generates flow projections linked to costs and educational goals and objectives.

In systems where planning responsibilities are devolved to provincial and district levels (e.g. for teacher deployment or school admissions), the development of national plans involves the collation and integration of lower-level plans with national-level responsibilities and competencies (e.g. for curriculum development and teacher education). Decentralized planning may be viewed as a limited form of participatory planning if it involves consultation at the local level. Alternatively, it may simply replicate national planning processes with most inputs coming from above rather than below.

Participatory planning is generally too cumbersome and complex to be useful for long-term planning precisely because it

involves many actors with different agendas and priorities, and different grasps of system-level opportunities and constraints. It requires cooperation and conflict management when trade-offs have to be addressed. To be effective, it needs systematic management and skilled *animateurs*. It also takes a lot of time and capacity to develop effective implementation strategies above the level of the smallest component parts.

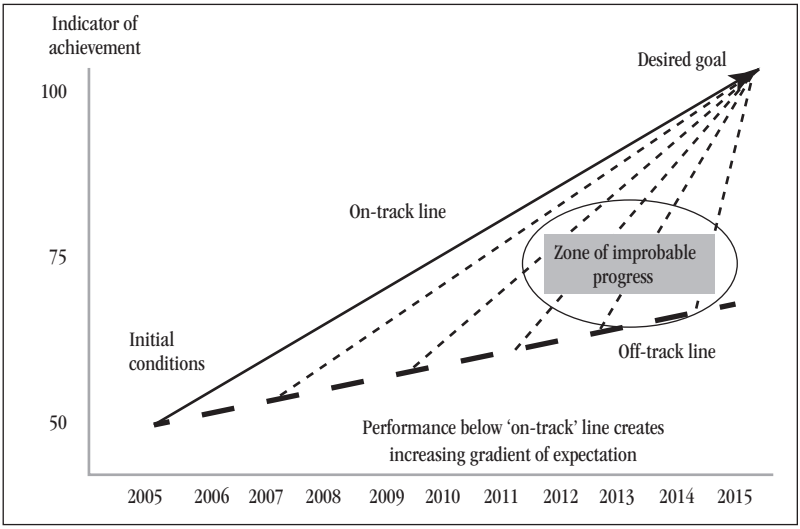
All three methods can be approached from two different perspectives. First, they can be developed with time-bound targets for key indicators and their values at future dates (e.g. gross and net intake rates, age-specific completion rates, transition rates, and GPIs). This is *aspirational planning.* It may result in unrealistic pathways between the current state of play and the desired outcomes. If the targets are not coherently inter-related it may also generate unbalanced investment priorities that emphasize short-term goals at the expense of other valued outcomes and sustainability. Drawing a line back from a desired outcome (e.g. all children of school age completing primary school) generates a linear path of necessary inputs and activities indicating that certain numbers of schools, teachers, and textbooks need to be provided each year.

In practice, what often happens is that financial constraints (time-slippage related to agreeing plans, signing-off agreements, disbursing tranches of funding, etc.) and non-financial constraints (lead times on construction, teacher training, softening of demand to enrol and progress, etc.) lead to achievement falling below the line indicating that progress is on-track (*Figure 5.1*). The gradient of what needs to be achieved then progressively steepens to the point where the planning and implementation system enters a 'zone of improbable progress'. Either the goals fall into disrepute because they are unachievable, or the goals are redefined and time shifted (as with gender parity goals).

If a non-linear approach is taken (which is more realistic), the gradient of achievement needed becomes concave and steepens as time progresses. This is only sustainable if increasing rates of change (increasingly rapid school-building, more teacher training, textbook supply, etc.) are feasible and there is capacity to keep on-track. Conventional linear modelling with almost inevitable slippages

often leads to calls for a 'big push' as deadlines are missed. This is a sure recipe for longer-term failure if it invokes frenzied activity to accelerate development without any concern for the legacy of unsustainable liabilities being created.

Figure 5.1 Gradients of achievement



Source: Author.

Target-generating planning is an alternative to aspirational planning. It starts with estimates of the highest sustainable rate of expansion that does not degrade educational quality to unacceptable levels. This depends on forward projections which draw attention to critical limitations of capacity, infrastructure, and finance. Target-generating planning offers a greater probability of identifying achievable targets. It takes known financial constraints (e.g. projected growth in GDP, domestic revenue collection, and government budget allocated to education) and non-financial constraints (e.g. capacity to procure and build classrooms, and capacity to train new teachers) on expansion into account from the outset. It avoids the trap of agreeing targets to which many stakeholders pay lip service knowing full well that they will not be achieved. It can help planners avoid being on the steepest part of an s-curve of implementation as target dates

for goals approach. It can strengthen the link between target-setters and target-getters. And it allows targets to be set for incremental improvement on a rolling basis.

Less positively, target-generating planning sits uneasily with goals which are prescribed by political systems without reference to the chances of the desired outcomes being achieved within a specific timeframe. Goals that can be used for planning cannot be independent of starting points or likely rates of progress. Target-generating planning offers the prospect of managed growth at rates which do not degrade system quality, using continuous monitoring to ensure supply-side inputs keep pace with demand. There will always be rates of change that are unsustainable and this should be recognized from the outset. This may be the best way to support planned growth which is sustainable.

Examples of issues illuminated by long-term planning

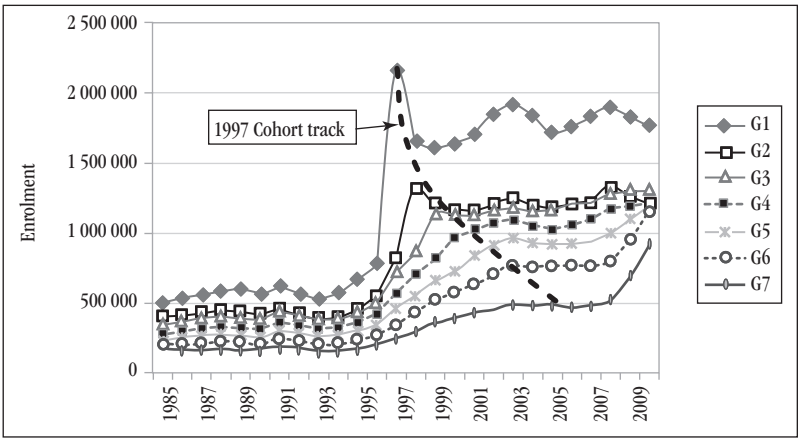
Analysis of longer-term enrolment trends over the last two decades illustrates why long-term planning is needed. Historical cases from three countries in SSA indicate the problems it can address.

Case 1

In Uganda, a strategy to deliver universal primary education (UPE) was announced in 1997. An immediate consequence was a dramatic increase in enrolments at Grade 1 (*Figure 5.2*). The following year, Grade 1 enrolment fell back by about 25 per cent because many older children who were out of school had enrolled over-age in Grade 1 and there were fewer to enrol in the following year. Subsequently, Grade 1 enrolments gradually increased, but, by 2004, they were actually falling. This pattern can also be seen in Grades 2 and 3 in subsequent years, though on a reduced scale. The enrolment curves for Grades 4 to 7 show increases but not the peaks so prominent in Grade 1 enrolment. The differences in enrolments between grades remain fairly constant since the chart lines are parallel to each other. This suggests that although total enrolments increased, rates of drop-out and non-completion remained high. The effect of UPE was therefore much less prominent in higher grades several years on, than it was in Grade 1. Grade 7 enrolments only began to grow rapidly after the

announcement of free secondary education which reduced some, but not all, of the costs of attendance.

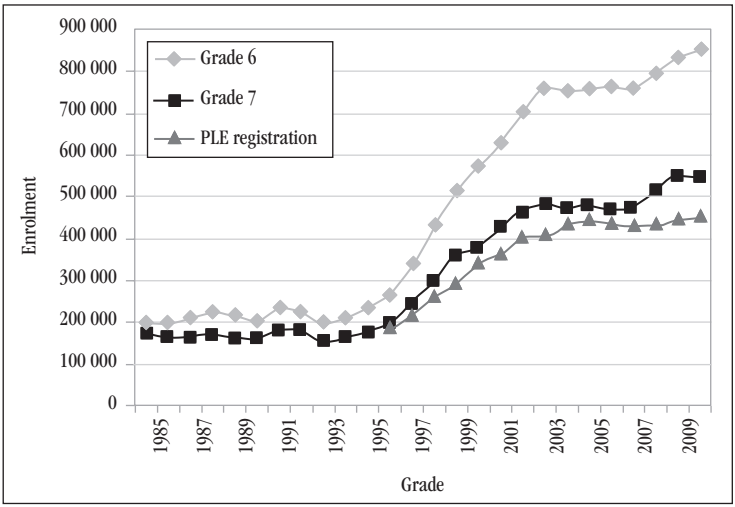
Figure 5.2 Enrolment by year and grade, Uganda



Source: Adapted from Uganda MoES database, 2012.

In addition, the difference in enrolment between primary Grade 6 and primary Grade 7 began to increase dramatically after UPE was introduced in 1997 (*Figure 5.3*). By 2005 there were 250,000 more children in primary Grade 6 than in primary Grade 7. This is the result of queuing in Grade 6 for the opportunity to enter Grade 7 and take the primary school leaving examination. This represents a new kind of inefficiency that will delay the achievement of 100 per cent completion rates. Those held in Grade 6 for more than one year are unlikely to ever complete Grade 7 and proceed through secondary school.

Figure 5.3 Enrolment in primary Grade 6 and 7 and entry to Primary Leaving Examination (PLE), Uganda

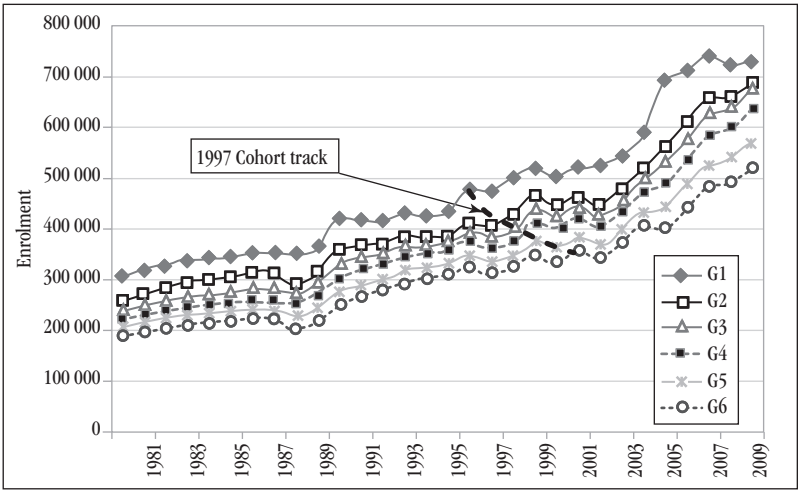


Source: Adapted from Uganda MoES database, 2012.

Case 2

Enrolment patterns in Ghana are very different (*Figure 5.4*). Here, free compulsory universal basic education dates from the late 1980s. Though there was an increase in enrolments in Grade 1 it was not nearly as large as that in Uganda. Strikingly, the grade-by-grade enrolment pattern has persisted to the present with a gentle upward slope not much greater than population growth. The differences in enrolments between grades have remained fairly constant with none of the convergence that might be expected. It is noticeable that in 2005 there was rapid growth in enrolments in Grade 1. This was a result of the introduction of capitation and fee-free schooling. It is clear that its effect was transient and that it is likely that some older children delayed entry in order to qualify for the free schooling. The increase in numbers in Grade 1 is not reflected directly in higher grades, and by 2010 it looked as though the pattern was converging back to its historic distribution.

Figure 5.4 Enrolment by year and grade, Ghana



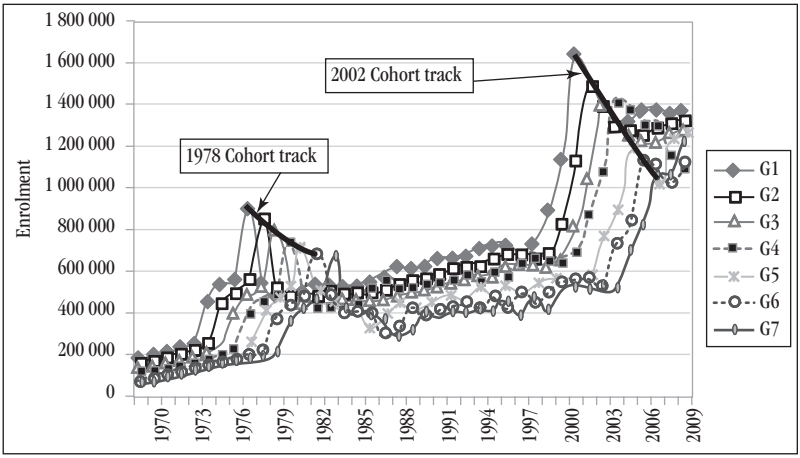
Source: Ghana, Ministry of Education, Planning Department.

Thus, in both Uganda and Ghana, progress towards universal primary education has not unfolded as expected. Part of the reason for this is almost certainly that growth immediately after the announcement of strategies to achieve it was not planned effectively. Too much emphasis was given to headline enrolment rates, and very little to distribution between grades or completion. If grade enrolment had been tracked more systematically then the most obvious problems, especially early grade drop-out, uneven growth in enrolment by grade, and patterns of gendered exclusion, could have been identified and acted on. School practices resulting in inefficient queuing in Uganda would have been identified, and the resilience of historic enrolment patterns in Ghana would have been noted. The implications of these and other events for the training and deployment of teachers, class sizes, learning materials supply, and classroom building could have been more effectively included in implementation plans. And the cost implications could have been more clearly foreseen.

Case 3

The case of Tanzania illustrates a different pattern. Efforts to universalize access to primary school have two distinct peaks (*Figure 5.5*). In the late 1970s, after the Arusha Declaration, which outlined the principles of socialist government, Tanzania came close to full enrolment. However, by the mid-1980s much of this gain had been lost and enrolments fell back to less than half of the peak. Early in the 2000s, the new government announced a new push for universal access to primary schooling which would be free of tuition fees. This has had a dramatic effect on enrolments. In this case, it does seem that the majority of new entrants into Grade 1 are succeeding in arriving in subsequent grades on schedule. It remains to be seen whether these gains are sustained into the future. The clear implication is that massive increases in secondary schooling will be needed to meet demand from new cohorts of primary school leavers, the numbers of which will more than double over a short period of time. The dynamics of this can already be anticipated and are, in part, the subject of the secondary education development plan. Measured long-term planning could manage some the stresses that are associated with very high rates of growth, which are likely to increase rather than decrease inequalities in the short term.

Figure 5.5 Enrolment by year and grade, Tanzania



Source: Tanzania, Ministry of Education, Planning Department.

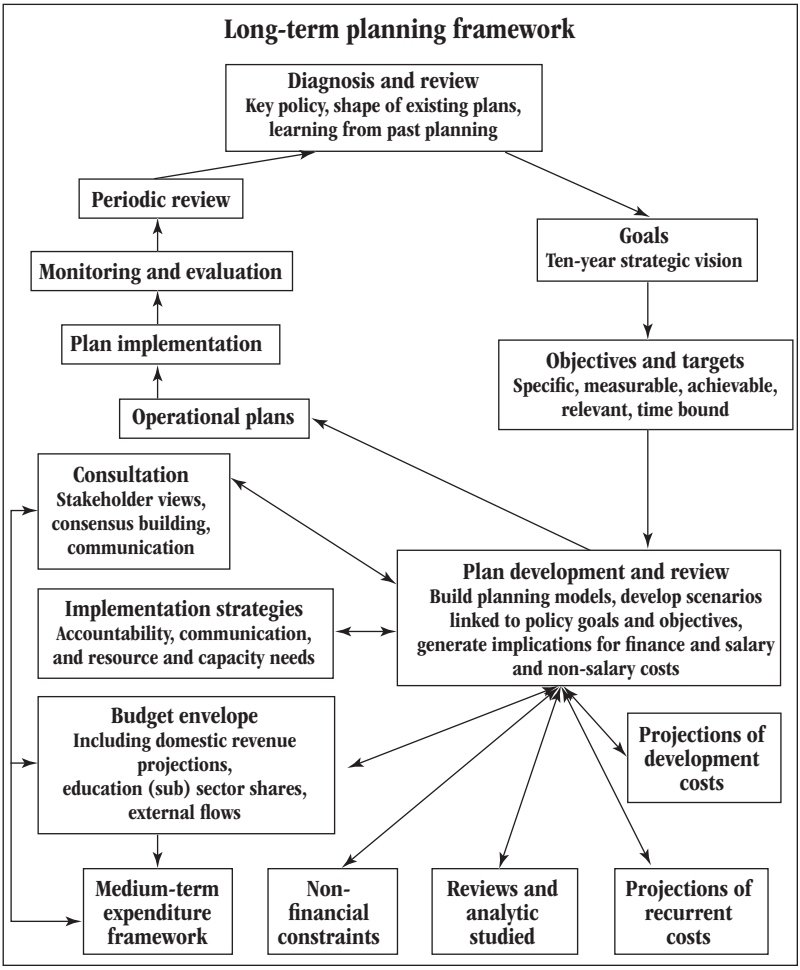
The architecture of long-term planning

Long-term planning starts with a set of questions that planners need to answer. These establish intentions, locate baselines and starting points, set priorities, identify the studies and analyses that will be needed, specify key audiences and stakeholders, and design the steps needed to develop the plan and generate consensus. These questions are:

- What are the goals and objectives for the plan period and how are they prioritized?
- What is the current status of the education system?
- How will the plan build on existing plans and commitments?
- What additional information, strategic studies, and analyses are needed?
- How will the plan be prepared and by whom? What should the plan contain?
- How will the plan be linked to an implementation strategy?
- Who are the audiences for the plan and who needs to be involved in the process?

Long-term plans need to be undertaken within a cyclical process of planning which periodically generates plans and implementation strategies, mobilizes resources, and monitors and evaluates the impact of interventions. This process can be represented by a flow chart (*Figure 5.6*).

Figure 5.6 Long-term planning framework



Source: Lewin, 2007*d*.

Concluding remarks

This chapter has outlined a framework for developing long-term plans. These plans are not blueprints but rolling working documents that need to be adjusted annually in the light of events, achievements, and changing goals. They allow progress to be judged and realistic, and achievable goals to be set. When used as a policy tool, the process draws attention to critical inputs, financial and non-financial constraints, and resource needs.

Longer-term planning is needed to achieve sustained growth in participation. Education systems are complex structures of related parts. The challenges of growth in participation are to build capacity cumulatively in ways that make the best use of scarce resources. Without a developed planning framework with vision and foresight, it is likely that crisis management and *ad hoc* decision-making will overshadow planned change that can be managed to achieve the desired goals.

VI. A framework for future planning of basic education

Introduction

The themes outlined thus far can be developed into a framework for planning to enhance access to education. The chapter revisits the model of zones of exclusion, using a graphic that can be employed for policy dialogue, and discusses four key issues that will shape planning basic education. It then outlines a generic framework that identifies possible interventions that fall into 12 different categories for action.

The zones of exclusion and the development of a framework for planning

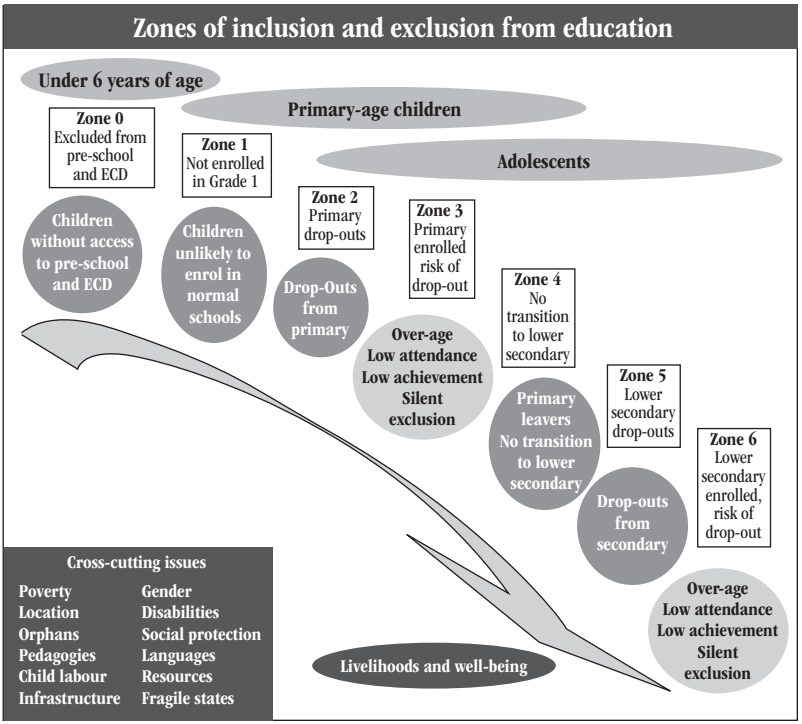
Low-income and low-enrolment countries need plans that secure the right to education for all children up to the age of at least 15 years, and for an increasing number, up to 18 years. Without sustained political commitment and long-term planning, progress will be uneven, inequitable, and insecure. There is no single pathway forward. Initial conditions vary widely, national and local priorities are different, capacity is always constrained, and the locus of responsibility to act is shared between many different stakeholders at different levels.

The key elements of medium- and long-term planning for education are discussed in this chapter and can be used to project, budget, and mobilize resources in relation to goals, objectives, and targets. *Figure 6.1* provides a representation of the zones of exclusion which can be used to guide discussion of the different zones during planning. The nature of participation and the barriers to greater inclusion vary. Each zone needs to be considered separately within a sector-wide plan, and all need to be taken into account in managing flows of children through the system and in addressing cross-cutting issues. These issues include poverty, gender, location, disability, household status, socio-linguistic and ethnic identity, and a

range of other factors which impact on participation and educational performance.

The chart draws attention to the fact that children will be of different ages within the zones, and that progress through an education system may not be smooth and sequential, but interrupted and slow if there is much grade repetition. Many children in primary school systems are over-age, particularly in low-enrolment countries, and some may not complete primary school until late adolescence. School leavers may be pushed out of school by low achievement, unaffordable costs, and a lack of perceived relevance, or pulled out by paid employment or early marriage.

Figure 6.1 Zones of inclusion and exclusion



Four things should be noted in developing a framework for planning. First, initial conditions and baseline data on education systems have to be analysed and understood. Insights into changing patterns of access over the previous decade can give clear indications of the nature of the problems and the likely patterns of causality that inhibit educational access for different groups of children. Where the data indicate that large-scale inputs in the past have failed to achieve results, then providing more resources may simply expand inefficient and low-quality systems. Analysis by zone can profile how exclusion has changed over time and indicate causal relationships specific to each education system (Ward, 2011). Policy needs to be developed with an understanding of the recent past to avoid replicating ineffective interventions.

Second, the political dimensions of expanded access to education intersect with the technical dimensions. Political support for expanded access to education was a major plank in many countries' transitions to political independence. In the post-colonial era, political parties of different ideologies have continued to promote expanded access to a greater or lesser degree, with different emphases on increased enrolment and improved quality and achievement (Little, 2008*a*; Somerset, 2009; Acedo, 2010; Akyeampong, 2009; Ahmed and Govinda, 2010; Lohani, Balak Singh, and Lohani, 2010; Obanya, 2011). Key differences between countries which have succeeded and countries which have failed to universalize access to basic education lie in consistent political will, a readiness to invest what is necessary, and the ability to use resources efficiently and with accountability for impact on outcomes (Little, 2010*a*, 2010*b*, 2010*c*; Aturapane, 2009).

Resilient political will is evident from the creation of bipartisan political policies, the sustained allocation of financial resources, and consistent actions at different levels. Central authority has to be complemented by consensus and commitment at lower levels. Political will at local level can resist and undermine national plans. Political will can be a 'double-edged' sword (Little, 2011), which can facilitate reform, but which can also resist change and reflect the interests of the relatively privileged.

Third, approaches to improved participation need to recognize that children exist within a web of relationships which will determine

what access they enjoy, and how supply and demand for education interact to generate opportunities for learning that can contribute to reducing poverty. Attention to the supply side is critical in ensuring that the opportunity to learn exists everywhere and is distributed equitably. Governments and development agencies often place more emphasis on the supply-side interventions, where inputs may be easy to define and measure. The risk is that an exaggerated emphasis on the supply side can lead to oversupply and under-utilization of capacity, especially where demographic and economic changes lead to substantial changes in patterns of demand.

The demand side is also important, especially for older children who have the ability to reject educational services that they see as irrelevant or as less attractive than opportunities to enter into livelihoods and employment. Where there are disincentives to go to school and learn, interventions must be targeted. Motivation must be encouraged by schools which are both child-friendly and child-seeking so as to discourage premature exit from schooling. Households, communities, schools, and local and national education authorities all play a role in shaping opportunities and removing barriers to access to education. Demand-side interventions, such as early childhood nutrition programmes, cash transfers, and other kinds of pro-poor subsidies, can enhance access and participation, and may be essential to improve equity and compensate for under-investment of the poor in education.

Fourth, the framework developed below is presented not as a blueprint, but as an *aide memoire* to signpost arenas for planned interventions at different levels. It has to be located and developed at country level with diagnoses grounded in particular education systems. It also has to be fine-tuned using formative feedback and regular reviews to adjust directions in the light of events.

The 12-domain agenda for planning

A framework to develop plans to enhance access to education is presented below. The 12 categories used to organize the framework have been derived from findings of research on access, equity, and transitions in education. Each of the headline themes is unpacked into four sub-themes signified by bullet points. The framework

needs to be populated with baseline data on current status, diagnosis, and prioritization of factors that inhibit access to education, as well as clear statements of goals and objectives. It can then be used to incubate ideas and commission analytic studies to address unknowns. This can then lead to the translation of goals into objectives, targets, and indicators. *Box 6.1* lists the headline themes of the framework.

Box 6.1 The 12-domain agenda for planning

1. Improving early childhood health
2. Enrolment on schedule
3. Reducing numbers of out-of-school children
4. Acting on silent exclusions
5. Mediating transitions to secondary school
6. Developing quality and effective pedagogies
7. Managing teacher supply and demand
8. Building schools and learning spaces
9. Enhancing learning materials
10. Monitoring and assessing learning
11. Financing education
12. Monitoring goals, objectives, targets, and indicators

Table 6.1 takes each thematic area and develops a matrix of possible activities and interventions. These can be used to systematically address issues in each zone of exclusion and to identify interactions and cross-cutting activities. Additional activities and interventions can be added when circumstances draw attention to additional dimensions. Conversely, some of the activities identified may be irrelevant or of low priority in particular systems. Boxes in *Chapter III* illustrate some interventions that have proved effective in different countries and give indications of how changes that have improved access to education have been managed.

The value of the matrix lies in providing a comprehensive framework for discussion of policy, priorities, and resources that can be tailored to the context of a particular country. It needs to be accompanied by analysis of secondary data and focused policy-oriented studies that evaluate exiting strategies and suggest new ones.

Table 6.1 The 12-domain development agenda for planning access to basic education

Theme	Zone	Activity	Possible interventions
1. Improving early childhood health	Zones 0, 1, 2, 3	Basic health checks for all children organized at school or clinic, including body mass index and under-nutrition and malnutrition; diagnosis of disability; monitoring of health status; primary health care. Training of teachers to act as sentinels to recognize common health issues in children. School environment health audits and mandatory provision of clean water, sanitation, etc. Development of *circles of support* for vulnerable children.	• Annual evaluation of basic health indicators of all school-going children through school-based assessment by health professionals/para-professionals • Nominated teacher responsible for health in every school. • Inclusion of health awareness training in all initial teacher training and selected continuing professional development. • School inspections to include health environment audit. • List clean water, toilet facilities, and other key indicators for audit of schools in public places and in the press. • Explore circles of support at community level led by responsible community members and / or teachers.
2. Enrolment on schedule	Zones 0, 1	Registration of all children with tracking cards to accompany child through school. Child-seeking school and community activities to enrol every 6-year-old child. Extension of pre-school at affordable cost to 4 and 5-year-olds.	• Ensure all children have or are given birth certificates and identity documents and have unique identifiers as part of school records and citizenship. • Organize school registration days at community or district level at least once a year, mobilizing teachers, parents, and older children, to seek and find out-of-school children of school age.

		Profile vulnerable groups – e.g. those with disabilities, orphans, ultra-poor households, malnourished or undernourished children, girls, immigrants, pastoralists, people from fishing communities, etc.	• Seek funding and community support for pre-school provision appropriate to circumstance. • Mobilize targeted interventions adapted to needs.
3. Reducing numbers of out-of-school children	Zones 2, 3, 5, 6	Audit and track out-of-school children; identify causal relationships affecting drop-out. Incentives/actions to promote re-entry to schools in appropriate grade for age. Enhance relevance and interest of school curricula to life-world of potential drop-outs Alternative provision of basic education where return to school is not viable.	• Identify the locus of responsibility at community and district level for out-of-school children. • Facilitate teacher visits to the homes of drop-outs and other community-level support systems. • Assess and mitigate push factors (e.g. costs, relevance, corporal punishment, gendered violence, distance). • Assess and mediate pull factors (e.g. paid employment, early marriage). • Develop child-friendly and child-seeking schools with incentives to retain students and incentives to attend (subsidized food, cash transfers for regular attendance). • Make special provision for those for whom conventional schooling is not an option.

4. Acting on silent exclusions	Zones 3, 6	Develop child-tracking cards to monitor grade progression, age in grade, attendance, and learning achievement; develop protocols to support children at risk of drop-out. Adopt automatic promotion with support for the learning of less capable children; prioritize reading and number work in early years. Provide support for improved pedagogy and teacher competence through training, mentoring, and enhanced learning environment; provide incentives for effective practice. Promote curricula relevance and develop more effective pedagogies; link formative assessment to enrichment and remediation.	• Adopt child-tracking in all schools to improve the early diagnosis of problems with attendance, progression, and achievement (e.g. below 90 per cent attendance, two-plus years over-age, two years below attainment norms). • Manage learning to reduce gaps in levels of achievement and diminish repetition to ensure smooth progression through early grades at appropriate ages. • Invest in continuing professional development and teacher mentoring to improve the quality and quantity of learning. • Monitor and incentivize teacher attendance. • Revise curricula and pedagogy to be fit for purpose for expanded cohorts of children with a range of capabilities, interests, and life futures. • Develop multi-level learning goals linked to a range of capabilities.
5. Mediating transition to secondary	Zones 3, 4, 6	Chart flows of children through primary and secondary school. Analyse the characteristics of those selected to progress to different levels and different types of educational institution.	• Act to reduce bottlenecks, e.g. selection examinations associated with high rates of repetition in the final grade of primary. • Assess how equitable selection methods are in terms of household income, gender, location, and other factors, and act to increase equity.

		Link analysis of flows of children through the education system to supply and demand issues in the labour market. Plan and project how to achieve high levels of participation through to Grade 9 and beyond, and identify critical inputs needed.	• Consider interventions to improve equality of opportunity and the predictive validity of selection. • Use data on flows into the labour market to feed back into curricula options and pedagogy. • Reduce costs to poor households of participation in secondary schools and subsidize transport to school.
6. Developing quality and effective pedagogies	Zones 3, 6	Identify effective learning and teaching strategies through inventories of good practice, analysis of EMIS and performance data, and action research. Promote better practice. Design, develop, pilot, and evaluate new pedagogies. Map schools, class sizes, and pupil-teacher ratios to profile problems of large classes and high pupil-teacher ratios. Identify where multi-grade pedagogies are needed.	• Use school effectiveness methods to profile effective school management and pedagogy. • Deploy school improvement methods to generate better practices at school level through institutional development. • Encourage systematic evaluation of innovative pedagogy that demonstrates learning gains. • Develop methods of managing learning and teaching for large groups and evaluate. • Invest in the development of multi-grade curricula and pedagogy for small schools and wide age-range classes, and evaluate impact.

7. Managing teacher supply and demand	Zones 0, 3, 6	Assess the stock and deployment of teachers and project supply and demand. Review the teacher education system and reform to prioritize skills and competences linked to more effective learning. Identify lost teaching time, including absenteeism, and manage incentives to increase time on-task. Provide incentives for difficult postings, including housing, promotion, subsidies for training, and additional payments.	• Audit the distribution of teachers and pupil-teacher ratios and act to meet norms and reduce variations between schools. • Invest in upgrading subject and pedagogic knowledge and skill in cost-effective ways. • Consider more learning-on-the-job and less full-time pre-career training. • Adopt teacher deployment strategies that increase time on-task and reduce absenteeism where this is a problem. • Act to improve teacher motivation and provide effective incentives linked to productivity gains.
8. Building schools and learning spaces	All zones	Review building stock and demand for space/facilities. Review disposition of services, clean water, sanitation, infrastructure related to schools. Develop protocols for maintenance/rehabilitation to ensure safe and congenial learning spaces. Mobilize public and private sources of funding for construction and maintenance and affordable transport to school.	• Project needs for schools and classrooms, and refurbishment and upgrading. • Decide on appropriate mix of additional classrooms and new schools. • Develop and apply quality/cost control of procurement. • Review and apply norms and standards for utilities, space, health and safety, equipment, and infrastructure. • Devise and test methods for contracting services from private providers that meet criteria for value for money, quality, and probity.

9. Enhancing learning materials	Zones 3, 6	Assess quality, availability, and costs of core books and learning materials for children, and plan to provide a book per child per main subject, or the equivalent. Identify enrichment materials and other learning and teaching aids, and plan provision. Adopt effective and efficient procurement and distribution of books and learning materials, including free text book schemes. Develop affordable and effective strategies for information technology evaluated independently.	• Invest in the development of an adequate supply of learning material for core subjects and plan and cost how to provide books. • Develop enrichment material and learning aids for teachers consistent with curriculum goals. • Devise competitive, fair, and corruption-free mechanisms for procurement that provide value for money. • Independently cost and evaluate information technology-based interventions in terms of learning gains, robustness, sustainability and value for money.
10. Monitoring and assessing learning	Zones 0, 3, 6	Provide support for regular formative assessment in main subjects. Train teachers to diagnose misconceptions and learning difficulties. Invest in enhanced data collection and monitoring of schools using improved EMIS and more indicators of student performance. Develop annual standardized monitoring assessments to assist in managing performance improvement. Commission a rolling programme of analysis of aspects of system performance.	• Develop school-based systems to identify learning problems and improve achievement. • Maintain records of assessment for each child and review periodically. • Ensure all initial training includes diagnostic assessment techniques and offer continuing professional development in formative assessment. • Provide analysis and feedback to schools from district and national monitoring examinations at item level. • Make feedback available in detail from high-stakes selection examinations based on item analysis and identification of common errors, etc.

11. Financing education	All zones	Review current status of public educational financing in relation to revenue and expenditure. Assess adequacy of current patterns of finance to support planned educational development. Identify necessary cost-saving and efficiency-enhancing reforms. Determine options for future sustainable financing.	• Review sub-sectoral allocations, unit costs, and other patterns of resource allocation. • Assess bottlenecks and constraints at different educational levels in relation to anticipated levels of participation, costs per student, levels of subsidy and cost recovery, and equity. • Identify gaps in financing and methods of filling any such gaps. • Explore options from domestic revenue (and external finance, if relevant) to accelerate development, enhance equity, and improve value for money.
12. Monitoring goals, objectives, targets, and indicators	All zones	Identify national educational goals Specify objectives and targets that will provide the basis for educational development strategies and detailed plans. Specify indicators to monitor progress towards objectives and targets. Use goals, objectives, and targets to develop medium- to long-term plans for annual review and revision that are consistent with national goals and international commitments.	• Engage with the political system that determines overall system goals. • Assess objectives, targets, and indicators for relevance to goals and technical quality, and improve. • Identify strengths and weaknesses of key indicators, and validate and adopt the most useful. • Invest in consensus-building with stakeholders and target-getters throughout the process of generating educational development plans and evaluating their implementation. • Mediate international commitments with national development priorities.

Concluding remarks

Access to education, broadly defined, remains central to any development strategy that seeks to diminish poverty and enhance well-being. Equitable access to effective and relevant quality education is critical to long-term improvements in productivity, the reduction of inter-generational cycles of poverty, demographic transition, preventive health care, the empowerment of women, and reductions in inequality. It is also enshrined as a universal human right in most countries, usually coupled with a view of education as a public good with benefits for all. Poverty reduction is unlikely unless knowledge, skill, and capabilities are developed among those who are marginalized from economic activity by illiteracy, and poor levels of numeracy and higher-level reasoning that links causes and effects rationally.

In most societies, households and individuals value participation in education and invest substantially in pursuing the benefits it can generate. The rich have few doubts that the investments pay off. The poor generally share the belief and recognize that mobility out of poverty is increasingly related to educational attainment. There is agreement across all theories of development that investment in education is developmental: knowledge and skills do transform capabilities; competencies that are acquired through education do have value in labour markets; and social selection and mobility are increasingly mediated by educational progress and qualifications. Where investment in education fails to have developmental benefits it is likely to be because what is on offer is of poor quality and low relevance, and the conditions of an expanded vision of access are not met.

Equity is part of the definition of development. When inequality increases, development is compromised since a few will benefit much more than the many. Capability is distributed widely across social groups and between generations, all of whom can contribute to development. If inequalities grow, so too do the risks that social conflict will become more likely, capabilities will be underutilized, and individual benefit will squeeze out collective gains.

Developing societies use educational access and attainment as a mechanism to sort, select, and confirm subsequent generations

into different social and economic roles. However, almost invariably those with more education enjoy greater incomes and have higher levels of well-being, both at the individual level and across countries. Who goes to school, and, increasingly, in many developing countries, who goes to which secondary school, is a major determinant of who will be relatively rich and who will be relatively poor. Economic development may or may not be accelerated by greater equity in the short term. But there would seem to be much to gain and little to lose by developing long-term planning that seeks to raise the educational level of the next generation and distribute knowledge and skill related to productivity more widely.

Much has been achieved in increasing participation in basic education over the last two decades. Reflection on both the process and the outcomes leads us to make a number of observations. In summary, universal access to education is far from being achieved in many low-enrolment countries where fewer than half the school-age children complete primary and fewer than a quarter complete lower secondary successfully. Poverty remains the most common factor associated with exclusion. Gender, disability, HIV status, social group affiliation, location, and other exclusions interact with poverty and also need addressing. Out-of-school children are increasingly likely to be those who enrol but drop out, rather than those who never enrolled. Children who never attend school may have characteristic forms of exclusion that require special measures. Various kinds of silent exclusions are widespread where there are high levels of over-age entry to school, repetition, poor attendance, and low levels of achievement. Physical infrastructure widely falls far short of what is needed to provide a secure, healthy, and appropriate learning environment. Learning materials vary in availability and quality, but are critical to the achievement of learning outcomes. Teacher supply, deployment, and management are widely inefficient and compromise effective and equitable access to education.

Differences between high- and low-enrolment systems signpost more and less effective practices. These include: entry at the appropriate age; child tracking of attendance and achievement; adequate buildings and learning materials; appropriate pupil-teacher ratios and class sizes; motivated teachers; efficient cost structures; and evidence-based school management. Targets and indicators

are needed, linked to goals and objectives that are informed by data analysis that monitors participation and consistently tracks achievement, and which reflect a consensus of political will to attain agreed educational outcomes.

New national and international goals and targets for education will be set for the future through the development of the Sustainable Development Goals and other processes. These must be less like an uncoordinated wish-list, and more like a recipe of inter-related parts tailored to the starting points and realistic rates of progress of individual countries. They must link to national development strategies and likely flows of resources, as well as the capacity to implement plans for reform. It should remain the case that no country with a comprehensive and credible long-term plan will fail to achieve universal access and desired learning outcomes throughout the basic educational cycle because of lack of adequate resources. Effective long-term planning can map the pathways to this goal and encourage more consistent commitments of development partners to support national aspirations. External assistance should always be accompanied by clear vision of the conditions under which such assistance will cease to be necessary at some point in the foreseeable future.

It is a core challenge of any new architecture for education and development to learn from the last 25 years of Education for All and recognize that over-simple, undifferentiated, and poorly evidenced development strategies for education bear at least part of the responsibility for failure to meet the goals set in 1990 and 2000 by the international community. History will judge the architects of the next generation of education and development investment harshly if they fail to learn from past mistakes, underestimate the importance of demand as well as supply in planning, and do not honour their promises to the next generation of children. The Sustainable Development Goals create opportunities for new approaches to planning with more coherent goals, objectives, targets, and indicators tailored to circumstance. The risk is that their specification and implementation will fall short of that needed and not heed the many lessons of the past, including those from the experience reported in this monograph (Lewin, 2015*b*).

Most of what is needed in order to universalize educational access and achieve basic learning outcomes up to the age of 15 years is understood. The problem is to translate this knowledge into practices in schools, and into local and national systems of resource allocation and educational management. This can be done with robust diagnoses of the bottlenecks and systemic inhibitors of progress, and through understanding changing patterns of participation, mobilizing the resources and capacity needed, and engaging with the political economy of development. It is this that will determine how much longer it will take to make a reality of rights to basic education for all children and young adults.

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Universal access to learning through basic education lies at the heart of development. Despite consistent efforts over 25 years, more than 250 million children still fail to complete a full cycle of basic education successfully. The UN Sustainable Development Goals reaffirm commitment to the rights of all children to education. This book presents key concepts for planning basic education through to 2030, drawing attention to different zones of exclusion and inclusion. The author develops an expanded vision of access that includes learning, charts the dynamics of education system development, and identifies clusters of countries with different challenges. This book provides new frameworks for planning for those who wish to make the right to education a global reality.

About the Author

Keith Lewin is Emeritus Professor of International Development and Education at the University of Sussex. He directed the Centre for International Education for 17 years (1995–2011) and is the Founding Director of the International Master's programme, which opened in 1979. He holds degrees in Physics, Science Policy, and Development from Manchester and Sussex Universities, is a Fellow of the UK Academy of Social Sciences, and holds honorary Chairs in Beijing and Hangzhou. He has worked extensively on education and development for the major bilateral and multilateral aid agencies and for many national governments in Africa and Asia. Since 2005 he has directed the DFID Consortium for Research on Educational Access, Transitions and Equity (CREATE).

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