SOCIAL DEVELOPMENT IN PAKISTAN

ANNUAL REVIEW
2002-03

The State of Education







SPdC

SOCIAL POLICY AND DEVELOPMENT CENTRE

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FOREWORD

The world has entered the age of the knowledge-based economy. Technological changes and globalization of markets has ushered in an unprecedented process of transformation of the economies of the world from the traditional 'resource' to a 'knowledge' basis. Knowledge is now the engine of growth and it is the production of ideas rather than the production of goods that provides comparative advantage and the impetus for economic development. The most important components of a knowledge-based economy are human and institutional capital. A knowledge-based economy necessarily requires a higher average standard of education. However, such an economy does not merely need a skilled workforce. It necessitates a populace with a more multi-disciplinary and holistic body of institutionalized knowledge to be economically productive and to ensure culturally enriched life-styles.

The historic change that is under way presupposes certain sociopolitical conditions. Throughout history, the changes in production relations as a consequence of the transformation of world economies from one phase to another has also seen a corresponding adaptation and change in social and political institutions of governance at societal and state levels. Thus, while the pastoral/agricultural age saw the dominance of the tribal/feudal systems, the advent of the Industrial Revolution saw its replacement by the capitalist order. The place of education has changed accordingly. Education, which was more of a 'consumption good' in the feudal/tribal age became a 'production good' in the industrial age and is now the basis on which the knowledge-based economy can be built.

Pakistan appears to have failed to develop its human resources over the last half a century and presents a rather unfortunate picture with respect to the need for change to meet the requirements of time. However, the importance and urgency of a transformation of societal and state values and structures and the development of human resources cannot be ignored, given the challenges posed by the emerging knowledge-based economies in the world and in the region itself.

SPDC's Annual Review of Social Development for 2002-03 focuses on certain fundamental questions of educational development in Pakistan. Chapter 1 documents the state of education in its various dimensions. Chapter 2 highlights the relationships between education and human resources, on one hand, and growth and development, on the other. Chapter 3 outlines the structural and policy factors that have tended to inhibit the advancement of education. Chapter 4 examines the problems in primary education beyond the much-discussed issue of enrolment rates. Chapter 5 analyzes the state of science education and the problems therein. And chapter 6 underlines the effect that multiple streams of education have had on national cohesion and identity.

The theme of the Annual Review for 2002-03 is State of Education. It is an attempt to present an independent and objective assessment of the problems of education in Pakistan and is intended to open a debate on this critical prerequisite of social and economic development. It is hoped that the publication will be of interest and value to policy makers parliamentarians, academics, development practitioners, civil society activists, and people at large in the country and abroad, who share a concern for human and social development in the country.

Moeen Qureshi
Chairman

Kaiser Bengali
Acting Managing Director

TEAM FOR THE PREPARATION OF THE REPORT

The SPDC Team

Kaiser Bengali
Haroon Jamal
Qazi Masood Ahmed
Muhammad Asif Iqbal
Abu Nasar
Sehar Rizvi
Zehra Aftab
Zehra Fatima Haider
Muhammad Sabir
Imran Ashraf Toor
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Amir Jahan Khan
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Tabinda Areeb
Surkhab Javaid
Saima Ismail
Naushaba Khatoon
Naeema Kazmi
Iffat Ara

Editing Team

Linda O'Neil
Sehar Rizvi
Rafea Anis

Design and Layout

Rizwanullah Khan
Kamran Shaikh
Zakir Hussain
Hamid Ali

Consultants

Tariq Rahman
Zia Niazi
Saiqa Khan
S. Khurshid Hasnain
Abdul Hamid Toor
Atiya Kaleem
Farzana Latif Ansari
Rumana Qureshi

THE SOCIAL POLICY AND DEVELOPMENT CENTRE

Established in 1995, the Social Policy and Development Centre (SPDC) is a private sector research organization that serves as a focal point for policy-relevant research on social sector development. Using a multidisciplinary approach, the Centre assists both public and private sector institutions and non-governmental organizations to plan, design, finance, execute and manage social sector programmes in a cost-effective manner. The results of its research are made available to policy makers, interested groups and the general public to promote informed discussion and action on vital social sector issues.

SPDC is independent and non-partisan and cooperates with a wide range of organizations working in related areas, within Pakistan and internationally. It determines its own pace-setting research agenda within the parameters of its mandate and objectives, and maintains autonomy, flexibility and balance between responsive and proactive social sector research. Key activities include research and policy analysis; social sector government database support; pilot project monitoring and evaluation; training of government, private sector and non-governmental organizations; and information dissemination through publications, conferences, seminars and workshops.

SPDC receives core funding from the Canadian International Development Agency (CIDA). The Canadian Advisory Agency (CAA) provides advisory services and support to strengthen SPDC and help it achieve its mandate. In addition, SPDC undertakes a significant component of self-financing.

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Shahnaz Wazir Ali

Social Policy and Development Centre
15-Maqbool Co-operative Housing Society
Block 7 & 8, Karachi 75350, Pakistan
Tel: (92-21) 111-113-113
Fax: (92-21) 4534285
Website: http://www.spdc-pak.com
E-mail: spdc@cyber.net.pk

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SELECTED SOCIAL DEVELOPMENT INDICATORS

BOXES

T A B L E S

C H A R T S

ACRONYMS

ADB	Asian Development Bank
BHU	Basic Health Unit
CRCP	Consumer Rights Commission of Pakistan
CV	Coefficient of Variation
DEI	District Education Index
DDI	District Development Index
DOTS	Directly Observed Short Course
EFA	Education For All
EMIS	Education Management Information System
ESR	Education Sector Reforms
ESRA	Education Sector Reforms Assistance
FATA	Federally Administered Tribal Areas
ESRAP	Education Sector Reforms Action Plan
FY	Fiscal Year (FY)
GC	Gini coefficient
GCSE	General Certificate of School Education
GPER	Gross Primary Enrolment Rates
GST	General Sales Tax
GNI	Gross National Income
HDI	Human Development Index
HRCP	Human Rights Commission of Pakistan
ICT	Islamabad Capital Territory
IDB	Islamic Development Bank
IFI	International Financial Institution
IMF	International Monetary Fund
I-PRSP	Interim Poverty Reduction Strategy Paper
ISPM	Integrated Social Policy & Macroeconomic (model)
JICA	Japan International Cooperation Agency
KEI	Knowledge Economy Index (KEI)
KPP	Kushal Pakistan Programme
MCQ	Multiple Choice Question
MMR	Maximum to Minimum ratio
NCO	Net Credit to Others
NEMIS	National Education Management Information System
NFA	Net Foreign Assets
NFC	National Finance Commission
NGC	Net Credit to the Government Sector
NISTE	National Institute of Science and Technical Education
NPER	Net Primary Enrolment Rate
NPO	Non Profit Organizations
NSS	National Saving Scheme
OPP	Orangi Pilot Project
OCT	Orangi Charitable Trust
PIHS	Pakistan Integrated Household Survey
PPAF	Pakistan Poverty Alleviation Fund
PPP	Purchasing Power Parity
PRGF	Poverty Reduction Growth Facility
PSBR	Public Sector Borrowing Requirement
PSDP	Public Sector Development Programme

RCC/RBC	Roofing with reinforced concrete/bricks with cement bonding
R&D	Research and Development
RHC	Rural Health Centre
Rs.	Rupees
TAI	Technology Achievement Index
TB	Tuberculosis
SAP	Social Action Programme
SBP	State Bank of Pakistan
SEMIS	Sindh Education Management Information System
SLE	School Life Expectancy
SDO	Social Development Organization
SPDC	Social Policy and Development Centre
SSC	Secondary School Certificate
STI	Sexually Transmitted Infections
UNDP	United Nations Development Program
UNFPA	United Nations Fund for Population Activities
VAD	Vitamin A Deficiency
WHO	World Health Organization

NON ENGLISH TERMS

Aqai'd	Beliefs
Chaudhry	Lord
Fiqah	Islamic jurispruidence
Hadith	Sayings of the Prophet (PBUH)
Hadr	Rapid recitation of the Qur'an
Haj	Holy pilgrimage
Haveli	House
Hifz	Memorization of the Qur'an
Jirga	Tribal court
Hisaab	Arithmetic
Ibadaats	Acts of worship
Ilm-ul-Arud	Prosody
Ilm al Balaghah	Rhetoric
Ilm al-Faraid	Science of inheritance
Ilm-e-Hindsa	Geometry
Ilm-e-Hae'at	Astronomy
Ilm-ul-Jadi	Debate
Ilm-ul-Kalam	Philosophy of religion;scholastics
Ilm-e-Tabiaat	Physical sciences
Ilm-e-Tajweed	The science of Qur'anic phonetics
Islamiat	Teaching of the Qur'an and Hadith Islamic history and jurisprudence
Jehad	Religious struggle
Kutcha house	Housing made of wood, bamboo and other materials
Katchi Abadi	Squatter settlement
Khuda ki basti	A land and shelter project that imitates the way illegal squatters provide housing for themselves
Lughat	Dictionary
Madrassahs	Institutions of Islamic religious learning
Maktabs	Persian schools
Mantiq	Logic
Manqoolat	Revealed learning
Ma'aqoolat	Intellectual endeavour
Mausiqi	Music
Mu'amalat	Business practice, transactions
Munazaras	Theological debates
Nai Roshni Schools	Non-formal education scheme
Nahw	Syntax
Nazirah Quran Kareem	Recitation of Quran
Noorani Qa'idah	Beginners' textbook for Arabic language
Pucca house	Housing made of concrete roof and walls of baked bricks and blocks
Qirr'ah, Qirat	Phonetically modulated recitation of the Qur'an
Quran	Islamic holy book
Radd	Refutation
Sarf	Morphology
Shariah	Islamic law
Tafseer al-Qur'an	Exegesis of the Quran

Tajweed	Correct recitation of the Quran
Talukas	Towns
Tasawuf	Mysticism
Usul-e-Fiqah	Islamic jurisprudence and its principles
Zakat	Religiously-mandated poor tax

Views of a Leading Social Sector Personality

""Society should move towards the realization of a social order that is based on the democratic equality of all citizens, participatory governance, and justice for all."

– I.A. Rehman

I.A. Rehman stands as the standard bearer of a long and uncompromising struggle for social and political rights of the people. He has espoused an enlightened worldview in matters ranging from education to religion; the causes he has campaigned for range from freedom of the press to the rights of workers, women, children, minorities and smaller provinces, from the rule of law and democracy to regional peace. He considers social development, including education and health, to be part of the basic human rights of the people.

I.A. Rahman is currently the Director of the Human Rights Commission of Pakistan (HRCP), which he joined in 1990. He commenced his career in 1950 as a journalist with the English language daily *Pakistan Times* and rose from the position of cinema/art critic to Editor-in-Chief. He was dismissed for his support to trade union and democratic causes in 1970. He then spent nearly two decades in editorial/management positions of the Urdu daily *Azad* and the English language *Cinema the World Over* and weekly *Viewpoint*. Besides hundreds of articles and papers in national and foreign publications, he has three books to his credit: *Jinnah as a Parliamentarian* (1977), *Arts and Crafts of Pakistan* (1983) and *Pakistan Under Siege* (1990). He has served as a member of the National Commission on History and Culture and the National Advisory Council on Environment and has chaired the Pakistan Chapter of the Pakistan-India Peoples' Forum for Peace and Democracy. He holds the Chair of the Kathmandu-based South Asia Forum for Human Rights, is an advisor to the Bangkok-based Forum-Asia, and is a member of the Bureau of South Asians for Human Rights. He is the recipient of the 2003 Nuremberg City International Human Rights Award.

SPDC spoke to Mr. Rahman and asked him to share his views on social development in Pakistan. Following is a paraphrased version of his observations.

Let me first apologize for being an old-fashioned idealist who still believes in democracy, rule of law, justice and secular ideals in today's Pakistan, and for placing social development higher than the state's prestige or the amount of foreign exchange with the State Bank of Pakistan.

I take a somewhat broad view of social development. My definition refers to improvement in social relationships between individuals and in relationships between the individual and the collective, meaning society and state. Society should move towards the realization of a social order that is based on the democratic equality of all citizens, participatory governance, and justice for all. Citizens should be able to achieve greater opportunities for higher standards of living through work that corresponds to their choice and ability. There has to be respect for human rights, including the right to educational and employment opportunities. Social development includes the enjoyment of and participation in literary and cultural activities. It translates into the greater realization of the community's aggregate intellectual and technological potential as manifested in scientific invention, academic research, and achievements in the areas of literature and culture. It means improvement in the behaviour of dominant sections of society towards the less advantaged and in the level of concern for the marginalized. And finally, social development necessitates freedom from intolerance, violence, prejudice, hate, and sectarianism.

In addition to broadening the definition of social development to facilitate progress towards it, one must also recognize that social development is a basic human right. Many of the elements constituting social development have been recognized in the Universal Declaration of Human Rights and the International Covenant on Economic, Social and Cultural Rights. Some of these are also recognized in the fundamental rights chapter of the Constitution of Pakistan. Many societies in the world also now recognize that the rights of communities are comparable to the rights of individuals.

During the last five decades, Pakistan has not been able to achieve the level of success in social development that it should have attained and its citizens have been deprived of this right. The problem is multifaceted and its rectification demands a broader analysis than is usually attempted.

When Pakistan came into being, it was assumed that a state had been created, whereas a new state had yet to be structured. There was the view that the colonial system inherited from the British was too good to be given up and was, thus, not abandoned and has not been abandoned to this day. This has meant the retention, to a large extent, of pre-independence political, economic and social relationships. The absence, at inception, of any meaningful exercise to define the ideals of society, failed to open the doors to social development. Since then, the continued determination of social and cultural norms almost entirely by traditional and conservative feudal, tribal and religious leaders has also been responsible for impeding social development. In a country where a majority of the population is still employed in the agriculture sector, the continuation of feudalism, its mores and norms, has made social development nearly impossible. The drift towards theocratization of the state has also had a divisive impact and disrupted the integration of a pluralistic society into a nation of equal citizens.

The result is that whereas fifty years ago we had considerable freedom to think, this is no longer the case. Over the years the space for the 'unthinkable' has expanded, while the space for the 'thinkable' has contracted. This is the main barrier to social development, which demands not only development on the basis of present day wisdom but also the formulation of new social values. In a socially dynamic collective, tradition is subject to evolution. Only that part of tradition that is of eternal value is worth retaining. Therefore, to achieve any degree of social development, the features of tradition acquired in periods of feudal and colonial domination have to be shed.

The problem of social and cultural domination has been aggravated in Pakistan due to the lack of participation by civil society. Since social development and democracy are interchangeable concepts, the persistent denial of democratic rights to Pakistanis has amounted to denial of social progress. The state has curtailed the space for civil society, particularly political parties, trade unions, academics, and the youth, all of whom could have contributed to social development. We need to accept the philosophy that Quaid-e-Azam bequeathed to us. There has to be commitment to democratic governance and acceptance that democratization is a process. One aspect of repudiation of democracy has been non-acceptance of federalism in its essence. The compromise of the rights of the federating units has suppressed social dynamics and stalled social development. We need to resurrect civil

society's right to regulate public affairs through recognized organs of the state – the legislature and the judiciary.

The state stands accused of keeping a majority of the population illiterate and in poor health, of failing to recognize the right to work, and of failing to end discrimination against women and minorities, thus undermining the accumulation of social capital. To attain social norms based on the ideals of equality and justice, the state has to treat individuals as citizens and not as subjects. A move towards the ideal of equality can begin by dismantling the provisions of laws that sanction inequality, particularly those that affect less populous provinces, women and minorities. All forms of discrimination must be erased, a system of equal entitlements enforced, and justice established for all. The colonial practice of establishing justice between subjects of the state and not between the state and its subjects must give way to a system in which there can be justice not only between citizens but also between the state and the individual. Justice has to be guaranteed to the poor and the socially vulnerable rather than a commodity that only the rich and the resourceful can hope to secure. This may require not only a change in laws, but also a change in the class character of the judiciary and, indeed, of the state itself.

The role of education is important in social development. Public schools and education contributed to social and economic development when the government enforced its compulsory education law in Punjab in the 1930s, when education could be afforded by the poorest. The poor could join elite institutions, share benches with the rich and the powerful, and the doors of colleges were not closed to anyone. Now, however, schools are closed shops of different income groups and there is little scope for intermingling.

Problems in the education sector can only retard efforts to achieve social development, and the current state of this sector is not satisfactory. Today, education in Pakistan is in the hands of bureaucrats and educators who have no role in its planning and administration. There are sharp variations between institutions in big cities and in the countryside. The curricula revision exercises are myopic and lopsided. Over the past decades, the objective of education has become oriented more and more towards careerism. The development of all-round personalities and consciousness of civic responsibilities appears to have been discarded. Education institutions are conceived as a tax-free means of accumulating wealth. Students are taught to think of their own interests and not about their fellow citizens. The decline of public sector education has given rise to a private sector that is largely inspired by the profit motive. Schools and other educational institutions can only become centers of change and development when no child is denied quality education for want of means and committed professionals replace bureaucratic cabals.

The contribution of education to broader social development must be seen in perspective. For example, the nexus between education and women's empowerment is generally exaggerated. There are more educated Pakistanis today than there were in 1947, but the process of empowerment, including that of women, has not kept pace with improving education statistics. It is impossible to deny the role education has played in the uplift of women, but their empowerment demands changes in the state system and laws, demolition of feudalism and its practices, relaxation of the rigours of dogma, and recognition of the right to

economic independence. Pakistan is supposed to be a modern republic and there is a lot of talk about attaining the heights of scientific knowledge. However, at the same time, the nation seems determined to live in the past and be governed by an age old dogma. The premises underlying these two assertions are irreconcilable and give rise to a situation where agreement on what constitutes social development becomes impossible.

Thus, reforms in education alone will not achieve social development. After all, the educated are not always free of feudal mindsets, which will not change until production relations change; until the monopoly of religious leaders on interpreting religion is done away with; until curbs on the freedom of thought and participation are done away with.

Similarly, universalizing literacy and education alone will not lead to the establishment of a democratic state in Pakistan. Most arguments along these lines are based less on the merits of education and more on a desire to justify deviations from democracy. Education plays a role in the democratic process, but it is not a decisive element. On the one hand, there are examples like France, England and the USA, which made progress in terms of democratization while a majority of their populations, had not attained high levels of literacy and education. On the other hand, there are examples of fascist states with high levels of education. Pakistan's own history shows that a largely illiterate electorate did not make wrong choices whenever free and fair elections were held.

The deliberate 'mistake' made by those who wish to defer democracy until education is universalized is to suppose that these two goals are sequential rather than concurrent. However, not only are both processes interdependent, but they also share common prerequisites. Thus, at present, Pakistan is at a stage where education is needed to supplement democratization by attacking impediments to the establishment of a legitimate democracy – problems of feudalism, 'beradari', social inequality, poverty, discrimination and sectarianism. Those who stand for democracy must also press to universalize education/literacy and those who campaign for education must have democracy on their agenda.

When a society is neither educated nor democratic, democratization is required to catalyze social development. In subsequent stages of democratization, education helps because a literate and educated citizenry can make better choices, which is the essence of democracy. Democratic progress should lead to better education, in terms of quantum and content, and better education should make higher forms of democracy possible. The equation does not permit an 'either/or' proposition.

Social development is an individual and collective right and the state must acknowledge it. If this is done, the direction of the collective endeavor will have a new dimension and efforts at defining national goals will acquire greater clarity and sharpness of focus. This will also provide us with a new measure to judge the country's progress. What I am suggesting is a broader indicator than what is available in present social action plans or even in human development indices. Social development can be recognized as a right by defining it as such in the constitution, with necessary changes in laws, policies and practices.

STATUS OF EDUCATION IN PAKISTAN

1

CHAPTER 1

"The Constitution of Pakistan has placed the responsibility for basic education on the State."

STATUS OF EDUCATION IN PAKISTAN

The Constitution of Pakistan has placed the responsibility for basic education on the State. This obligation is reflected in the principles of policy in Article 37, which declares:

"The State shall:
(a) Promote, with special care, the educational and economic interests of backward classes or areas.
(b) Remove illiteracy and provide free and compulsory secondary education within minimum possible period."

Various governments have, over the years, formulated an assortment of policies and plans to fulfill the constitutional commitment of providing education to the people and removing inequalities. Success has been limited, though, with the result that the current state of education in Pakistan is deplorable. Education in Pakistan has suffered from a myriad of issues, as reflected by various educational indicators including low levels of public spending, literacy and enrolments, high levels of dropout from the schooling system, acute regional and gender inequalities, and inequities in the distribution of budgetary allocations to education.

Both demand and supply factors explain this state of affairs. On the demand side, poverty and illiteracy appear to be significant factors adversely affecting household decisions to send children to school. On the supply side, high population growth rates and lack of sufficient financial commitment has caused illiteracy to rise. There have been commendable efforts in the private and non-government sectors, but the scale of these efforts has not been sufficient to make a difference to the aggregate situation. Clearly, there is no alternative to public education, which is the focus of this Review.

EDUCATION AND LITERACY: WHERE DOES PAKISTAN STAND?

Pakistan has been placed at the 144th position out of 175 countries in terms of the Human Development Index. In other words, Pakistan ranks among the bottom 30 countries of the world. With respect to the Education Index, Pakistan ranks among the bottom 15 countries. By comparing selected educational indicators, **table 1.1** presents a reflection of Pakistan's poor educational performance in relation to other countries in the region.

Comparative data reveals that Pakistan is at the bottom of the ranking of countries in the region, with an adult illiteracy rate of 56 per cent, well above the average of 37 per cent for Sub-Saharan Africa and 44 per cent for South Asia. Net primary enrolment rate in Pakistan is at 46 per cent, the lowest in South Asia. Similarly, the combined enrolment rate for primary, secondary and tertiary education is 36 per cent, which is

Net primary enrolment rate in Pakistan is at 46 per cent, the lowest in South Asia.

TABLE 1.1 WHERE DOES PAKISTAN STAND IN THE REGION?

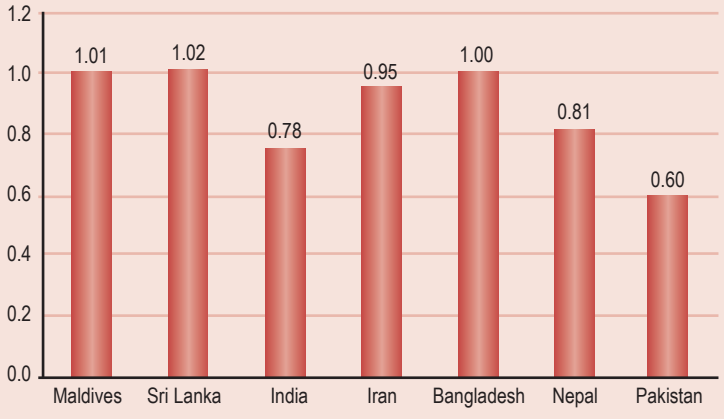
	Adult* Literacy Rate 2001	Primary Enrolment Rate (net) 1995-2001	Combined Enrolment Rate 2001	Public Expenditure on Education as % GDP 1990	GDP 1998-2000	Total Government Expenditure 1990	Total Government Expenditure 1998-2000
Bangladesh	41	79	54	1.5	2.5	10.3	15.7
Bhutan	47	53	33	N.A	5.2	N.A	12.9
India	58	89	56	3.9	4.1	12.2	12.7
Iran	77	97	64	4.1	4.4	22.4	20.4
Maldives	97	99	79	4.0	3.9	10.0	11.2
Nepal	43	66	64	2.0	3.7	8.5	14.1
Pakistan	44	46	36	2.6	1.8	7.4	7.8
Sri Lanka	92	97	63	2.6	3.1	8.1	N.A

Sources: UNDP, Human Development Report (2003)
UNDP, State of the World's Children (2003)
*15 years and above
NA. Not available.

again well below the regional average of 54 per cent. Even Bangladesh, Bhutan and Nepal fare better than Pakistan in almost all key educational indicators.

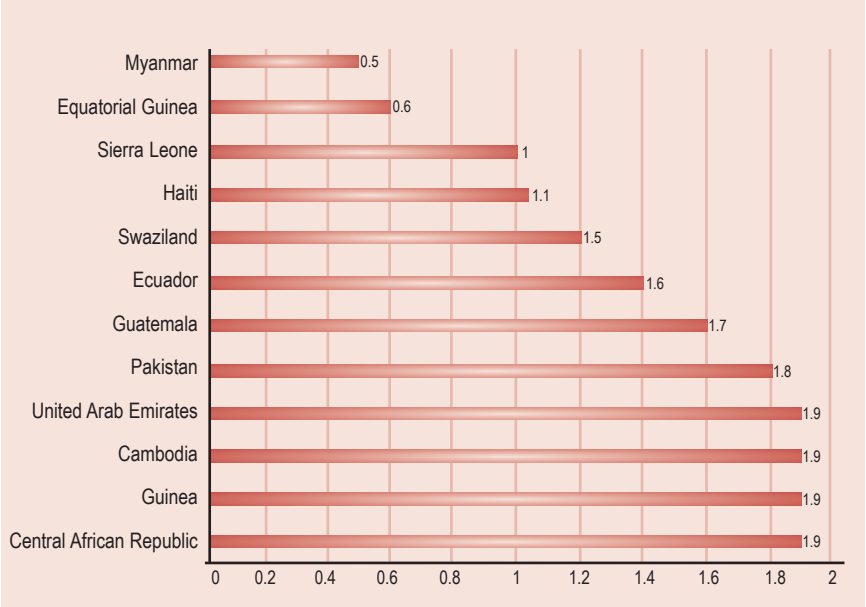
In addition to comparing unfavourably in terms of aggregate indicators, Pakistan also registers substantial gender disparities. A simple measure of gender disparity is the ratio of female to male enrolment, i.e., the number of females for every male enroled. As shown in **chart 1.1**, Pakistan has a ratio of 0.6, which is the lowest in the region and suggests a sizable bias in favour of males. In Nepal and India, the ratio is about 0.8, reflecting a relatively lower level of gender inequality. It is nearly 1.0 or higher in from Bangladesh, Sri Lanka and Maldives, indicating complete gender equality in these countries.

CHART 1.1 RATIO OF FEMALE TO MALE COMBINED ENROLMENT RATES



Source: UNDP, Human Development Report (2003)

CHART 1.2 **PERCENTAGES OF GDP SPENT ON EDUCATION**



Source: UNDP, Human Development Report (2003)

The level of public spending is an important indicator of a government's commitment to the cause of education. The education sector in Pakistan has suffered from persistent and severe under investment by the government throughout the last half-century. As shown in table 1.1, public spending on education in Pakistan as a percentage of GDP is 1.8, which is the lowest in the region and has actually declined from 2.6 per cent in 1990. According to the UNDP, there are 12 countries in the world that spend less than 2 per cent of GDP on education, of which Pakistan is one **(see chart 1.2)**. In terms of public expenditure on education as a percentage of total public spending, Pakistan ranks among the bottom five nations of the world. The share of public expenditure on education in Pakistan is posted at 7.8 per cent, placing the country just ahead of Greece, Jordan, Mongolia and Guinea-Bissau.

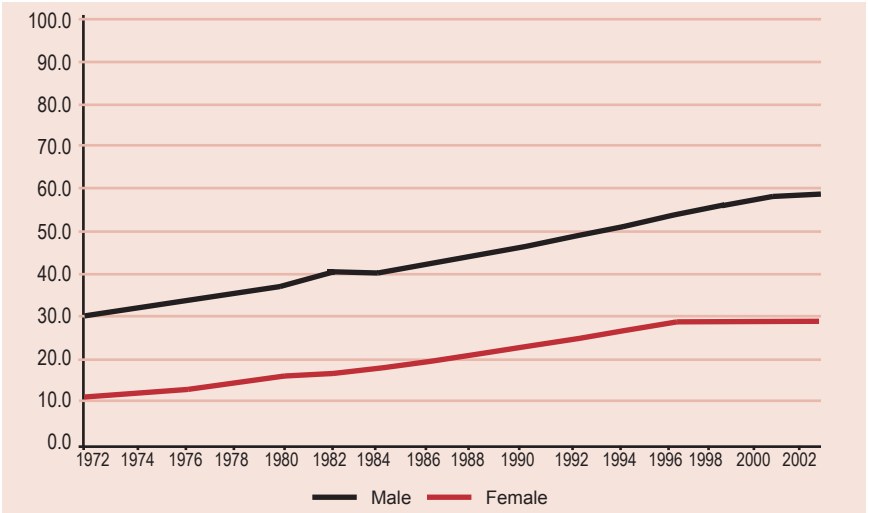
Although there is no evidence in the international literature of a strong and consistent correlation between public expenditure on education and enrolment rates, low public expenditure is a common feature of almost all low-enrolment countries. The negative impact of reducing public expenditure on access, equity and quality is however, well documented. For example, a common feature in newly industrializing countries is high public expenditure on education both as a proportion of GDP and of total public expenditure. It has also been suggested that government expenditure on education is strongly associated with indicators of entry into the first grade. It is therefore not surprising that Pakistan, with its declining public sector investment in education, should compare dismally with other countries in terms of its education and literacy indicators.

Public spending on education in Pakistan as a percentage of GDP is 1.8, which is the lowest in the region.

TRENDS IN LITERACY RATES

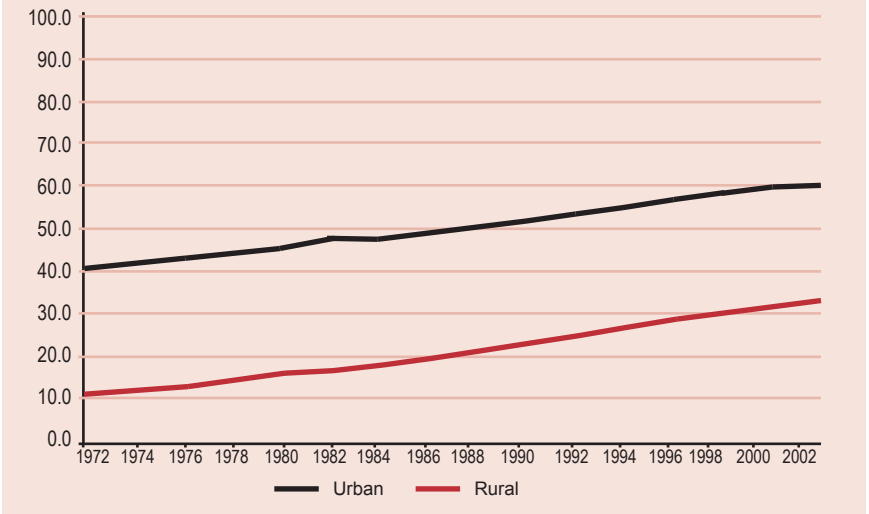
Adult literacy rates in Pakistan seem to be improving, but at a slow pace. During the last 30 years, the literacy rate has increased from 21 to 43 per cent – or less than 1 per cent per annum. Plotting the growth in literacy produces a rather flat curve for males and an even flatter curve for females **(see chart 1.3)**. The same is true for urban and rural literacy growth rates **(see chart 1.4)**. Substantial disparities exist between the

CHART 1.3 TRENDS IN MALE AND FEMALE LITERACY RATES



Sources: Population Census Reports (1972, 1981 and 1998)
Pakistan Integrated Household Survey (PIHS) (2002)

CHART 1.4 TRENDS IN URBAN AND RURAL LITERACY RATES



Sources: Population Census Reports (1972, 1981 and 1998)
PIHS (2002)

genders, both within regions on an urban-rural basis between and within the provinces. As indicated in **table 1.2**, literacy rates for males are almost twice as high as for females. According to estimates based on the primary data of the Pakistan Integrated Household Survey 2001-02, male and female literacy rates are 57 and 29 per cent, respectively.

TABLE 1.2 TRENDS IN ADULT LITERACY RATES

Year	Total	Male	Female	Urban	Rural
1972	21	30	11	41	14
1981	26	36	15	53	17
1998	41	53	29	61	31
2002	43	57	29	63	34

Sources: Pakistan Census Reports (1972, 1981 and 1998)
PIHS (2002)

Similar gaps also exist between urban and rural areas. While the urban literacy rate is 63 per cent, it is 34 per cent for rural areas. Between provinces, the literacy rate ranges from 32 per cent in Balochistan to 44 per cent in Punjab **(see table 1.3)**. The lowest literacy rate at 7 per cent prevails

Computer class in a girls' college.

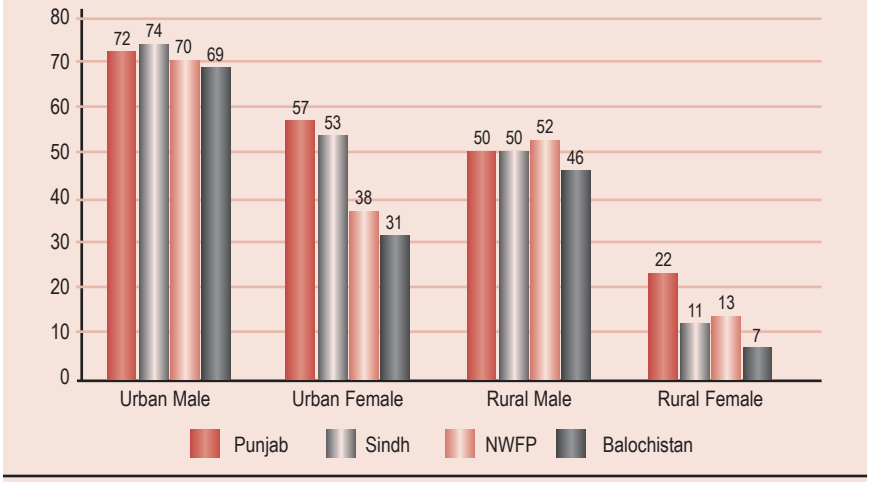
TABLE 1.3 ADULT LITERACY RATES, 2001-02

	Urban			Rural			Overall		
	Male	Female	Both	Male	Female	Both	Male	Female	Both
Pakistan	72	53	63	50	18	34	57	29	43
Punjab	72	57	64	50	22	35	57	32	44
Sindh	74	53	64	50	11	32	60	29	45
NWFP	70	38	54	52	13	31	55	17	35
Balochistan	69	31	51	46	7	28	50	12	32

Source: PIHS (2002)

among rural females in Balochistan, while the highest rate at 74 per cent is among urban males in Sindh. **Chart 1.5** presents the contrasts clearly.

CHART 1.5 DISPARITIES IN LITERACY RATES, 2001-02



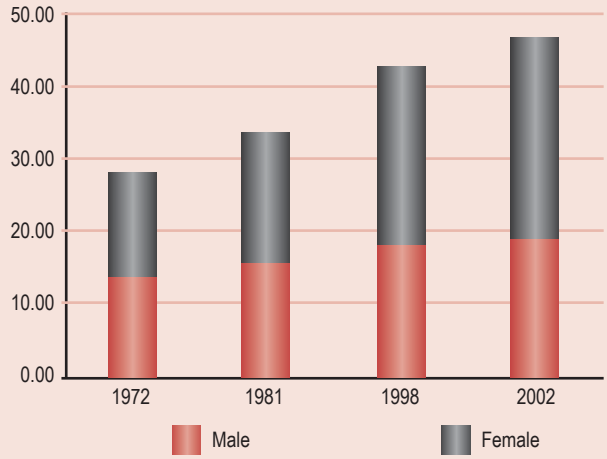
Source: PIHS (2002)

Given the fact that the literacy growth rate has been less than one-third the population growth rate, it is not surprising that the majority of Pakistan's population is illiterate. In fact, the number of illiterate people has increased from 28 million in 1972 to 46 million presently **(see chart 1.6)**. Women constitute more than 60 per cent of this population, which is up from 52 per cent in 1972. It is alarming to note that the share of female illiterate adults has been increasing over the years **(see chart 1.7)**.

The high incidence of illiteracy, especially among women, creates an adverse impact on the level of school enrolments and on the quality of human capital. This is on account of the fact that the education level of parents is known to influence the level of education attained by their children. Illiterate parents are less likely to send their children to school. Poverty also tends to be concentrated in households in which the head of the household is illiterate. Thus, children belonging to such households, trapped in illiteracy and poverty, tend to remain out of school and/or be pushed into child labour with all its attendant consequences.

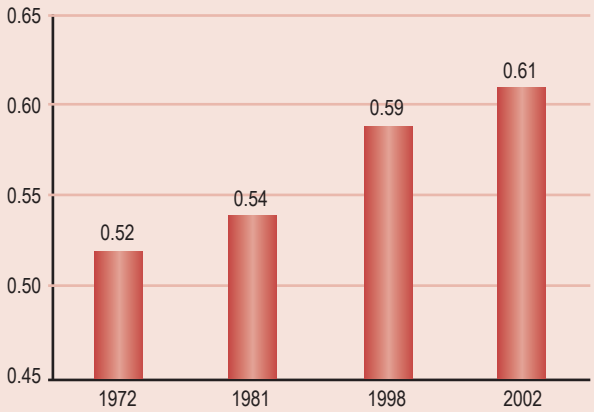
The number of illiterate people has increased from 28 million in 1972 to 46 million presently.

CHART 1.6 TRENDS IN STOCK OF ILLITERATE POPULATION



Sources: Population Census Reports (1972, 1981 and 1998)
PIHS (2002)

CHART 1.7 PROPORTION OF FEMALES IN ILLITERATE POPULATION

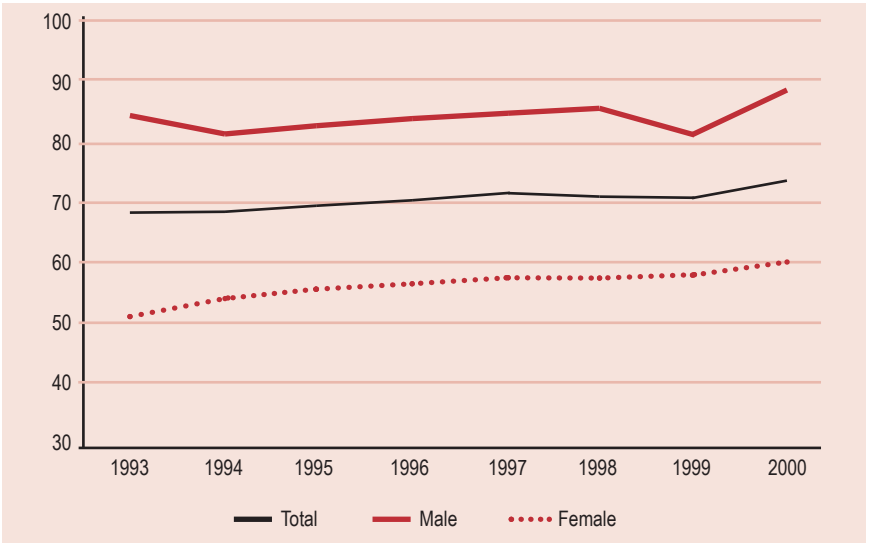


Sources: Population Census Reports (1972, 1981 and 1998)
PIHS (2002)

TRENDS IN ENROLMENT RATES

Growth in enrolment rates has also been stagnant, as reflected by the series of flat curves shown in **chart 1.8**. During the last decade, gross primary enrolment rates (GPER) have shown sluggish growth **(see table 1.4)**. GPER increased by 5 percentage points – at less than 1 per cent per annum – from 69 per cent in 1993 to 74 per cent in 2000. Growth in primary enrolments declined during the 1990s when compared to the 1980s.

CHART 1.8 GROSS PRIMARY ENROLMENT RATES



Sources: Provincial EMIS, NEMIS, Development Statistics and Education Statistics (various issues)
SPDC Estimates

TABLE 1.4 TRENDS IN GROSS PRIMARY ENROLMENT RATES (%)

	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-2000	2000-01
Total									
Pakistan	**69**	**69**	**70**	**71**	**72**	**72**	**71**	**74**	**74**
Punjab	73	71	72	73	75	76	74	80	79
Sindh	65	69	69	70	65	65	67	64	62
NWFP	66	68	70	72	76	78	69	78	81
Balochistan	50	48	50	50	57	55	58	58	58
Male									
Pakistan	**85**	**82**	**83**	**84**	**85**	**86**	**82**	**88**	**84**
Punjab	83	79	81	82	84	85	82	90	86
Sindh	84	87	87	88	82	81	82	78	73
NWFP	95	89	91	92	96	105	90	105	100
Balochistan	73	66	67	65	69	66	67	67	65
Female									
Pakistan	**52**	**55**	**56**	**57**	**58**	**58**	**58**	**60**	**63**
Punjab	62	63	63	64	66	67	67	69	71
Sindh	45	49	49	51	47	48	50	48	50
NWFP	35	45	47	51	54	48	45	48	61
Balochistan	22	26	29	32	42	42	46	47	48

Sources: Provincial EMIS, NEMIS, Development Statistics and Education Statistics (various issues)
SPDC Estimates

Growth in enrolment rates has also been stagnant.

As shown in **table 1.5** and graphically presented in **chart 1.9**, the 1980s witnessed an annual growth rate of 6.4 per cent in primary enrolment against 3.4 per cent during 1993-2000. Deterioration in enrolment growth is observed in all provinces and for both sexes, the only exception being female enrolment in Balochistan. In the year 2000, GPER ranged from 58 per cent in Balochistan to 80 per cent in Punjab. Over the decade of the 1990s, the performance of Sindh has been the poorest among all provinces. GPER in Sindh rose from 65 per cent in 1993 to 70 per cent in 1996 and then declined to 64 per cent in the year 2000.

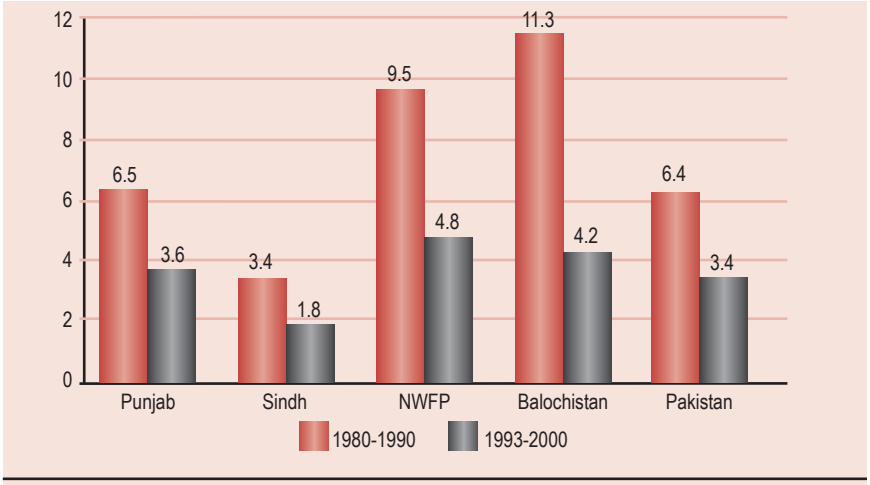
TABLE 1.5 GROWTH IN GROSS PRIMARY ENROLMENT

	1980-1990			1993-2000		
	Total	Male	Female	Total	Male	Female
Punjab	6.5	5.9	7.6	3.6	3.5	3.8
Sindh	3.4	3.4	3.4	1.8	1.2	2.9
NWFP	9.5	8.9	12.2	4.8	3.9	7.1
Balochistan	11.3	11.5	10.2	4.2	1.2	13.1
Pakistan	6.4	6.0	7.2	3.4	2.9	4.3

Note: Consistent data of primary enrolment is not readily available for the years 1991 and 1992

Sources: Provincial EMIS, NEMIS, Development Statistics and Education Statistics (various issues)
SPDC Estimates

CHART 1.9 TRENDS IN GROSS PRIMARY ENROLMENT

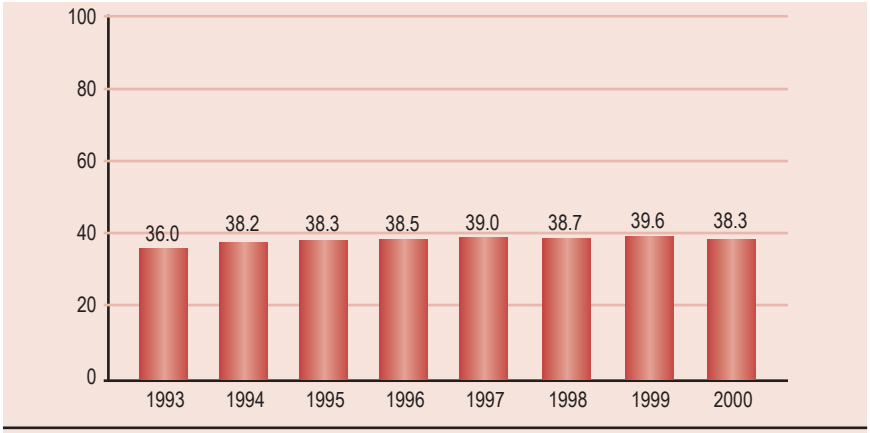


Sources: Provincial EMIS, NEMIS, Development Statistics and Education Statistics (various issues)
SPDC Estimates

Although the enrolment rate for girls has improved from 52 per cent in 1993 to 60 per cent in 2000, there appears to be no narrowing of the gender gap.

Sizeable gender disparities continue to exist despite official claims about emphasis on increasing girls' enrolment. Although the enrolment rate for girls has improved from 52 per cent in 1993 to 60 per cent in 2000, there appears to be no narrowing of the gender gap. **Chart 1.10** illustrates the trend in the share of girls in total enrolment, which has remained almost stagnant at around 39 per cent. With regard to the performance of provinces in terms of girls' enrolment, Balochistan has made significant progress: GPER for girls increased from 22 per cent in

CHART 1.10 TRENDS IN THE SHARE OF GIRLS' ENROLMENT (%)



Sources: Provincial EMIS, NEMIS, Development Statistics and Education Statistics (various issues)
SPDC Estimates

1993 to 47 per cent in 2002. NWFP also posted a sizeable increase from 35 per cent to 48 per cent during the same period. However, the gender gap still exists in all provinces, particularly in NWFP and Balochistan: in NWFP, for instance, there is a difference of 57 percentage points between the enrolment rates of boys and girls.

Net Primary Enrolment Rate (NPER) is a more refined indicator of enrolment level as it reflects enrolment of the children of a specific age group (5 to 9 years). Trends in national and provincial NPER are illustrated in **table 1.6**. The situation in terms of NPER is even worse than in terms of gross enrolment rates. Not only are the levels of net enrolment

TABLE 1.6 TRENDS IN NET PRIMARY ENROLMENT RATES (%)

	1991	1995	1997	1999	2002
Total					
Pakistan	**43**	**44**	**42**	**42**	**42**
Punjab	52	45	42	44	45
Sindh	38	45	45	41	40
NWFP	36	35	37	39	41
Balochistan	29	45	36	36	32
Male					
Pakistan	**49**	**49**	**46**	**47**	**46**
Punjab	56	50	45	47	47
Sindh	43	50	51	47	46
NWFP	46	42	42	47	48
Balochistan	39	51	43	44	39
Female					
Pakistan	**37**	**38**	**37**	**37**	**38**
Punjab	48	39	39	40	43
Sindh	33	39	39	35	34
NWFP	26	28	32	30	33
Balochistan	20	39	27	28	24

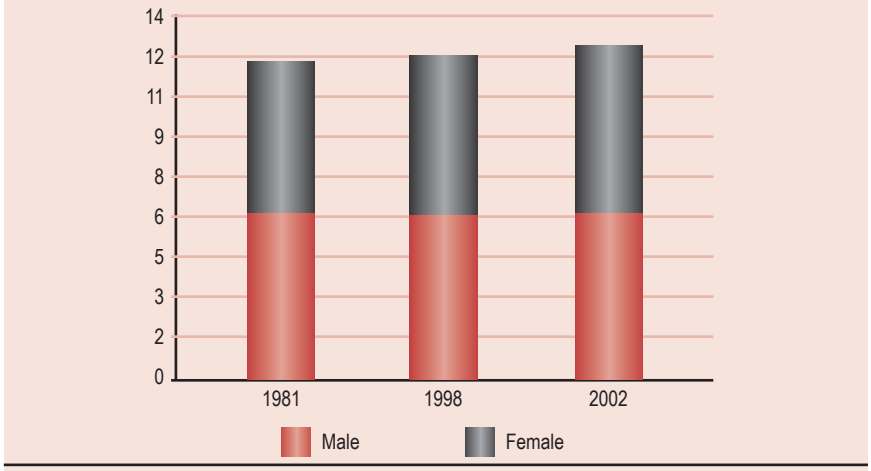
Source: PIHS (various issues)

Schoolboys playing truant?

rates low but they also exhibit a declining trend over the years. National NPER declined from 44 per cent in 1995 to 42 per cent in 1997 and then remained stagnant until 2002. The current rate of NPER is even lower than it was in 1991. It is important to note that a substantial decline has taken place in Punjab, where NPER has dropped from 52 per cent to 45 per cent. Trends in gender-wise rates are no different. National NPER for boys has declined from 49 per cent in 1991 to 46 per cent in 2002, while that for girls has remained almost stagnant, varying between 37 and 38 per cent during this period.

Persistently low levels of primary enrolment have led to an increase in the population of out of school children in the 5-9 age group **(see chart 1.11)**. According to estimates based on PIHS (2002) data, there are 13 million out of school children out of about 50 million children in this age group, over half of whom are girls. The share of girls in the total number

CHART 1.11 NUMBER OF OUT OF SCHOOL CHILDREN AGED 5-9 (Million)



Sources: Population Census Reports (1981 and 1998)
PIHS (2002)

There are 13 million out of school children out of about 50 million children in this age group, over half of whom are girls.

of school children has increased during the last two decades, rising from 49.4 per cent in 1981 to 50.9 per cent in 1998.

Gross and net secondary enrolment rates based on PIHS data are given in **table 1.7**, presenting a story similar to that of primary education. Overall, the net secondary enrolment rate in Pakistan is as low as 10 per cent. Gender disparity is observed at the net and gross enrolment levels as well. For instance, the female net secondary enrolment rate stands at 7 per cent, while that for males is 13 per cent. The same pattern is observed in gross enrolment rates. One reason for the pronounced difference in gross and net enrolment rates is the number of over aged children enroled in secondary classes.

TABLE 1.7 SECONDARY ENROLMENT RATE, 2002

	Male	Female	Total
Net Secondary Enrolment Rate			
Pakistan	**13**	**7**	**10**
Punjab	12	8	10
Sindh	12	7	10
NWFP	17	5	11
Balochistan	17	5	12
Gross Secondary Enrolment Rate			
Pakistan	**48**	**33**	**41**
Punjab	48	39	44
Sindh	44	29	37
NWFP	54	22	39
Balochistan	44	16	32

Source: PIHS (2002)

TRENDS IN DROPOUT RATES

Another serious problem in education in Pakistan is the very high percentage of students who drop out before completing a particular cycle, e.g., primary or secondary. The dropout rate is defined as the percentage of students who drop out from school before reaching grade 5. High rates of dropouts not only result in reduced enrolments but also lead to internal inefficiency in the education system by increasing the unit cost of producing school graduates.

Table 1.8 presents recent trends in dropout rates within public primary schools. The analysis reveals that dropout rates are not only alarmingly high, but have been increasing over time. At the national level, the overall dropout rate has increased steadily from 40 per cent in 1996-97 to 54 per cent in 1999-2000. Dropout rates are generally higher among girls and are increasing at a higher pace relative to boys. Currently, 51 per cent of boys and 59 per cent of girls leave school before reaching grade 5. The trend of increasing dropout rates is observed in all the provinces and for both sexes, with the only exception of Balochistan, where there has been a decline in male dropout rates from 52 per cent to 49 per cent.

Dropout rates are generally higher among girls and are increasing at a higher pace relative to boys.

TABLE 1.8 TRENDS IN DROPOUT RATES WITHIN PUBLIC PRIMARY SCHOOLS

	Punjab	Sindh	NWFP	Balochistan	Pakistan
Total					
1996-97	40	45	27	48	40
1997-98	46	47	31	45	44
1998-99	54	45	31	45	48
1999-00	58	51	42	47	54
Male					
1996-97	41	46	26	52	41
1997-98	44	48	29	49	43
1998-99	53	47	28	50	48
1999-00	53	53	39	49	51
Female					
1996-97	38	42	29	30	38
1997-98	48	45	35	34	46
1998-99	54	41	37	27	49
1999-00	64	47	49	41	59

Sources: Provincial EMIS, NEMIS, Development Statistics and Education Statistics (various issues) SPDC Estimates

The dropout rate within public primary schooling clearly indicates inefficiency and the inability of public schools to retain children within the system. By comparison, private schools have performed better.

AVAILABILITY OF PUBLIC SCHOOLS AND TEACHERS

The availability of schools and teachers plays a vital role in the education system. **Table 1.9** reveals that at the national level, availability of public schools has worsened during the last decade. According to estimates, in 1992-93 one public school was available for 248 children in the 5-14 age group. This increased to 264 children in 1999-2000, indicating a relative decline in the availability of schools.

In addition to availability, access to schools is an important dimension of the quality of the education system. In rural areas, access has always been an issue, particularly for girls whose families generally do not allow them to attend school unless it is situated within or very near their village. According to PIHS (2002), only 66 per cent of villages had a school for girls within one kilometer of the village centre. Considerable variation exists among the provinces: rural areas of NWFP and Punjab register better accessibility rates of 84 and 80 per cent respectively, while Sindh and Balochistan suffer in comparison, with rates of 45 and 34 per cent. In other words, over half the girls in rural Sindh and two-thirds in

In 1992-93 one public school was available for 248 children in the 5-14 age group. This increased to 264 children in 1999-2000, indicating a relative decline in the availability of schools.

TABLE 1.9 AVAILABILITY OF PUBLIC SCHOOLS AND TEACHERS

	Population (5-14) per School		Population (5-14) per Teacher		Female Population (5-14) per Female Teacher		Ratio of Female to Male teachers	
	1992-93	1999-00	1992-93	1999-00	1992-93	1999-00	1992-93	1999-00
Punjab	270	334	74	65	158	161	0.71	0.75
Sindh	217	202	61	59	156	147	0.32	0.37
NWFP	241	225	64	78	186	182	0.34	0.34
Balochistan	211	184	106	83	638	363	0.12	0.58
Pakistan	248	264	70	66	168	165	0.47	0.53

Source: NEMIS (various issues)

rural Balochistan do not have a school facility within one kilometer of their village center.

The student population to teacher ratio, including the female student population to female teacher ratio, declined between 1993 and 2000; indicating a slight improvement. The role of female teachers in primary education is widely acknowledged and gains more importance owing to sociocultural factors in countries like Pakistan. However, the student-teacher ratio is substantially worse for female students and teachers as can be seen from the fact that the ratio of female to male teachers in public schools is quite low at 53 per cent. Further, while the student population to teacher ratio is 66, female student population to female teacher ratio is 165. However, there has been some improvement in all three ratios.

Will they go to school?

BOX 1.1 PHYSICAL CONDITION OF PUBLIC SCHOOLS

A review of the physical conditions of public schools shows that 16 per cent of them are without a building, 55 per cent without a boundary wall, 79 per cent without electricity, 44 per cent without water and 60 per cent without a latrine. There is, however, considerable variation between the provinces, between urban and rural areas and between boys' and girls' schools.

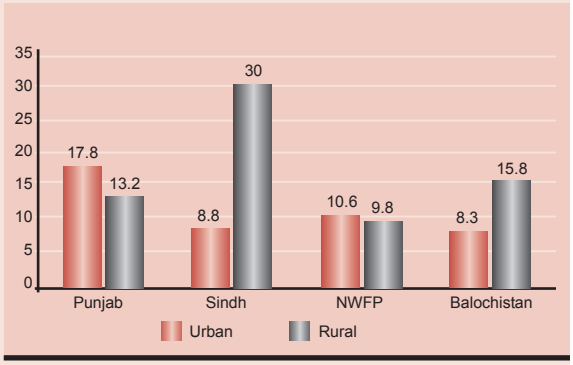
Province-wise, the most dismal situation appears to exist in Balochistan. Except for Sindh, where the percentage of schools without buildings is the highest at 27 per cent, Balochistan presents the worse case scenario in all other respects: 74 per cent of schools are without a boundary wall, 93 per cent are without electricity, 78 per cent are without water, and 83 per cent are without a latrine. The implication is that over three-fourths of schools in Balochistan are bereft of the most basic physical facilities and a meager 7 per cent have electricity. Balochistan is, however, relatively better endowed in the matter of school buildings.

Urban Punjab also does not manage very well in some respects. The largest percentage of schools in urban areas that are without a building, without a boundary wall and without electricity are in Punjab, with the respective percentages being 18, 54 and 84. It, however, fares well with respect to availability of water. On the whole, rural Punjab fares well in all respects, except availability of a latrine, compared to other provinces.

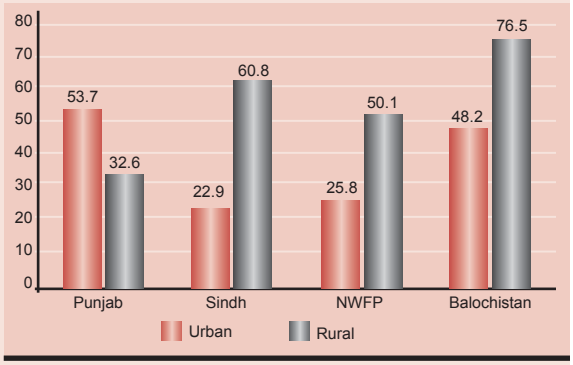
Urban Sindh fares particularly well in schools without a building, with the percentage being as low as 9 per cent. The percentages for schools without boundary walls, without electricity, and without a latrine are also the lowest for urban Sindh. Rural Sindh does not perform as well. About 30 per cent of schools are without a building, the highest in rural Pakistan. Rural Sindh only fares worse than Balochistan with respect to schools without a boundary wall, without electricity and without water.

NWFP presents the best state of affairs in the country. With respect to schools without buildings, with only about 10 per cent of schools are bereft of a building. The percentages are more or less the same in urban and rural areas. The situation in urban NWFP is more or less similar to urban Sindh with regard to schools without electricity and water. Rural NWFP's worst statistic

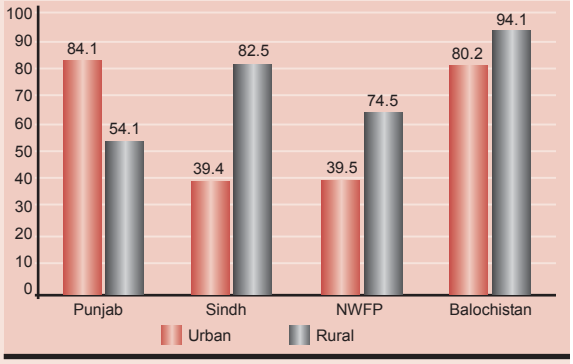
PUBLIC SCHOOLS WITHOUT A BUILDING



PUBLIC SCHOOLS WITHOUT A BOUNDARY WALL



PUBLIC SCHOOLS WITHOUT ELECTRICITY

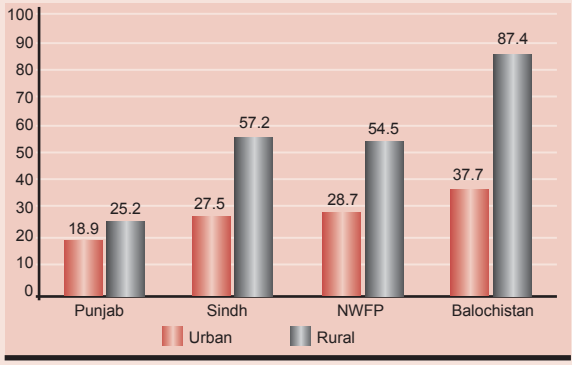


BOX 1.1 *(Contd.)* PHYSICAL CONDITION OF PUBLIC SCHOOLS

relates to about 75 per cent of schools being without electricity.

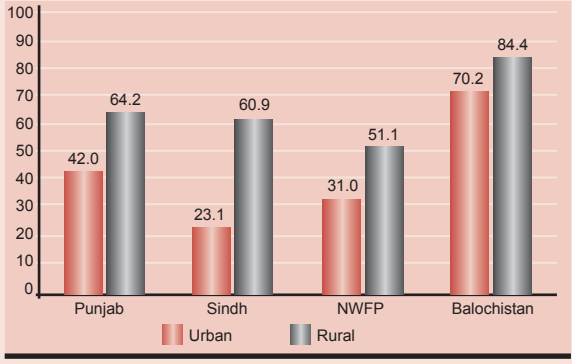
Gender-wise, the physical condition of girls' schools appears to be significantly better than that of boys' schools, barring a few exceptions: schools without a boundary wall in urban Balochistan and schools without electricity in urban Punjab and urban NWFP. The best statistic relates to NWFP, where less than 2 per cent of rural girls' schools and less than 3 per cent of urban girls' schools are without a building. The three worst statistics relate to Balochistan, where 91 per cent of rural girls' schools and 79 per cent of urban girls schools are without electricity, and to Punjab, where 87 per cent of urban girls schools are without electricity. A somewhat disturbing situation is that between one-fifth and one-quarter of girls' schools in urban areas are without water or a latrine. The situation is worse in rural areas, where about 40 per cent of girls' schools are bereft of these two basic facilities.

PUBLIC SCHOOLS WITHOUT WATER



Source: NEMIS (2001)

PUBLIC SCHOOLS WITHOUT A LATRINE



The previous discussion suggests that the educational performance of Pakistan is far from being satisfactory. In terms of education indicators, Pakistan does not compare favourably with other countries of the region, and even with many countries that have relatively low levels of human development. Low levels of public spending, lack of access to education facilities, low levels of literacy and enrolment, and high dropout rates characterize the education sector in Pakistan. Substantial disparities exist among the provinces, regions (both urban and rural) and genders. Furthermore, the physical condition of schools in the public sector adds to the already dismal qualitative situation of education in the country **(see box 1.1)**. As mentioned earlier, governments have, over the years, formulated various policies and plans, which have so far not been successful in achieving the desired objectives.

EDUCATION INEQUALITIES

2

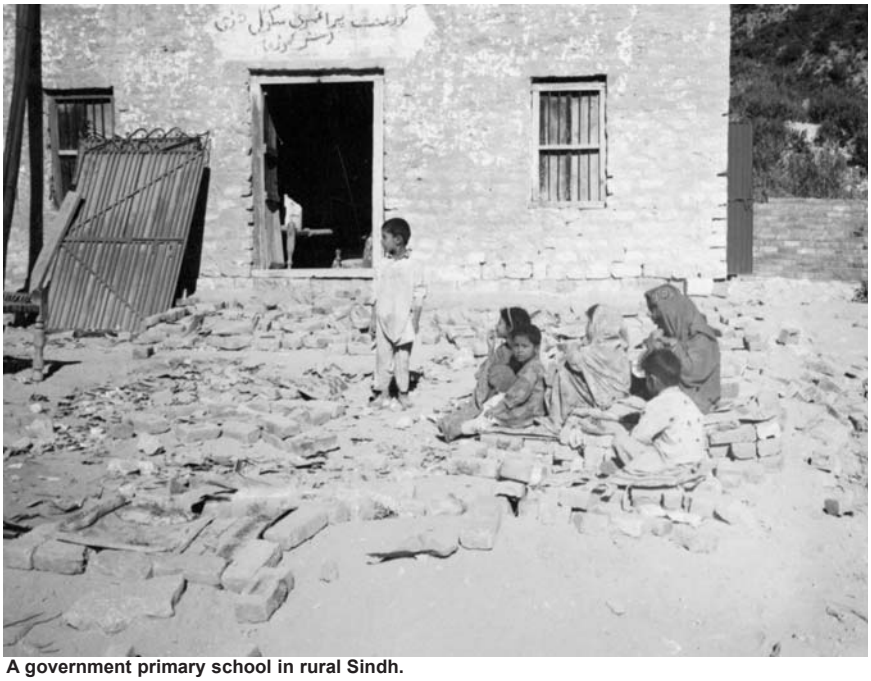
"Inequalities in educational levels are high, indicating that some sections of the population are significantly worse off."

EDUCATION INEQUALITIES

Inequality and poverty are typically perceived in terms of income and wealth. Differences in levels of income and wealth matter, however, not only because they determine opportunities for eliminating or reducing poverty, but also because they influence educational opportunities. Empirical evidence suggests that there is a high correlation between income and education levels as well as between education inequalities and income inequalities.

Given that education enhances income-earning capacity, the relationship between equity in education and in income is explained by the returns associated with education. In the current global scenario, the nature of technological change is manifested by a rapidly rising relative demand for technically skilled workers. If the demand for skilled labour expands at a higher rate than that for unskilled labour, wage inequalities are likely to increase. Further, if there are disparities in education between upper and lower income groups, upper income households are enabled to capture a disproportionately large share of the benefits of growth in national income. As a result, educational inequalities are likely to exacerbate income inequalities and vice versa.

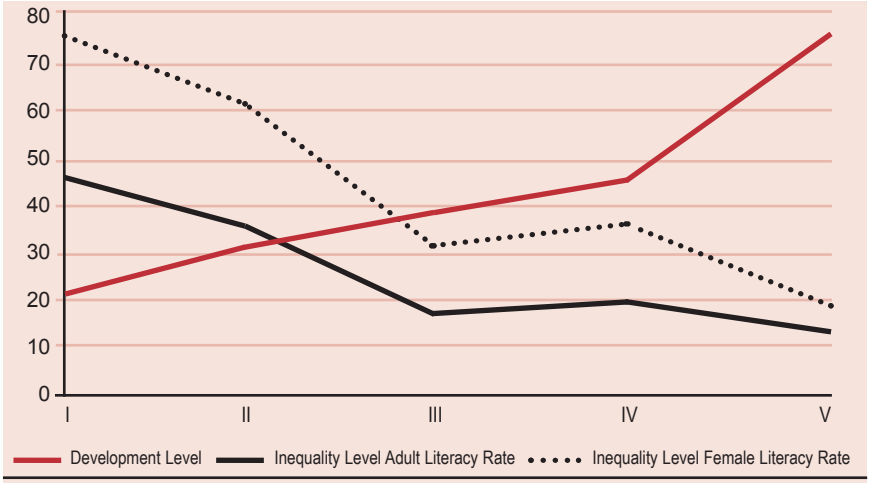
Education levels – in terms of enrolment as well as literacy – has already been documented in **chapter 1.** Even at such low levels, however, inequalities in educational levels are high, indicating that some sections of the population are significantly worse off.



A government primary school in rural Sindh.

Educational inequalities are likely to exacerbate income inequalities and vice versa.

CHART 2.1 DEVELOPMENT LEVEL AND INEQUALITY IN ADULT LITERACY RATE



Source: SPDC estimates based on Population and Housing Census (1998)

DISTRICT PROFILE OF INEQUALITY

A district level analysis, undertaken to measure educational disparities, confirms the relationship between inequality in education and developmental levels in Pakistan. It is evident that disparities in literacy rates are correlated with the level of development. As seen in **chart 2.1**, as the coefficient of variation between adult literacy rate and female literacy rate is decreasing, development levels are rising, implying that as the inequality level in the literacy rate falls, development levels rise.

The first step in the analysis is the construction of two indices: the District Education Index (DEI) and the District Development Index (DDI). DEI is designed to measure educational status, as reflected in enrolment and literacy levels. DDI measures the status of developmental variables other than those relating to education. Components of DEI include adult literacy rate and enrolment in the 5-9, 10-14, and 15-24 age cohorts and total student population. The age distributions are stated to be broad representatives of primary, secondary and tertiary levels, and are only largely indicative because the three levels do not correlate exactly with the given age brackets. For example, cases of children older than nine years of age enroled in the primary section are common. The last age bracket is split into those enroled in general and in professional disciplines. Components of DDI include extent of mechanization and modernization of agriculture, housing quality, access to basic residential services, and development of transport and communications. The construction of the DEI and DDI is explained in **boxes 2.1 and 2.2** respectively.

The degree of inequality in DEI is assessed through three measures: (1) Maximum to Minimum Ratio (MMR), (2) Coefficient of Variation (CV), and (3) Gini Index (GI). The measures have been estimated for each quintile to determine the extent of spatial inequality in education. The higher the value of MMR, CV or Gini, the greater the inequality. The definitions and methodology of computing the indices and inequality measures and issues relating to data are shown in **box 2.3**.

BOX 2.1 HOW IS THE DISTRICT EDUCATION INDEX CONSTRUCTED?

The construction of the DEI is based on indicators related to education data available in the Population and Housing Census of 1998. No other published or unpublished information is used in the analysis to render the exercise less disputable or debatable as far as the data source is concerned. While this approach makes the analysis somewhat restrictive, it is preferred in order to avoid any reservations regarding the quality of data.

Five indicators are derived from the Census data:

- Student population and enrolment in age cohort 5-9 years
- Student population and enrolment in age cohort 10-14 years
- Student population and enrolment in general disciplines in age cohort 15-24 years
- Student population and enrolment in professional disciplines in age cohort 15-24 years, and
- Adult literacy rate.

The three age cohorts – 5-9, 10-14 and 15-24 years roughly represent primary, secondary and tertiary grades. At the tertiary level, the general disciplines include enrolment in arts or science subjects, while the technical disciplines include engineering, medicine, public health, commerce and business administration, teaching, agriculture, and law programmes. Adult literacy rate is defined as the ratio of literate persons (who can read a newspaper and write a simple letter in any language) to the population aged 10 years and older.

The above five indicators are simple rates and can be combined by assigning them equal weight. This would, however, not take account of the relative (statistical) importance of the different indicators. As such, the Principal Component Technique of Factor Analysis is used to generate weights. This statistical procedure assigns the highest weight to those variables that have the greatest variance (or dispersion) while indicators with a lower level of variation are assigned lower weights. After assigning these weights to selected indictors, DEI is computed separately for males and females, for urban and rural areas and for provinces.

BOX 2.2 HOW IS THE DISTRICT DEVELOPMENT INDEX CONSTRUCTED?

Various attributes or indicators have been employed to represent the development level of a district. These attributes relate to:

- Income and wealth
- Modernization of agriculture
- Housing quality and services, and
- Transport and communications.

The District development score is obtained by applying the statistical technique of Factor Analysis to the selected indicators. This score is then used to construct the District Development Index (DDI). A brief description of the development indicators follows.

Income and Wealth

Direct income data at the district level are not available. As such, various proxies are used to estimate the income and wealth position of a district. For the rural economy, the cash value of agricultural produce per rural person and livestock per rural person are used. All 43 major and minor crops, including fruits and vegetables, are considered to estimate a district's cash value from agriculture. For the urban economy, per capita value added in large-scale manufacturing is used to proxy the level of urban income. On the assumption that there may be a direct link between the number of bank branches in a district and the volume of bank deposits, bank branches per capita are used as a crude measure of a district's wealth. Per capita car ownership is also used to proxy the district's income and wealth in the urban areas.

Modernization of Agriculture

Modernization of agriculture is another area of development which has direct and indirect effects on the prosperity and standard of living of rural populations. Three measures are used here: tractors per 1000 acres of cropped area as a measure of mechanization, consumption of fertilizer per 1000 acres of cropped area as a measure of the extent of fertilizer use, and irrigated area per 1000 acres of cropped area as a measure of access to canal irrigation systems and tube wells.

Housing Quality and Housing Services

Shelter is one of the basic needs, and housing conditions are one of the key determinants of the quality of life. Three measures are used here: proportion of houses with RCC/RBC roofing and cemented outer walls as a measure of the quality of housing stock, rooms per person as a measure of adequacy of housing, and proportion of households with inside piped water, and with electricity and gas as a measure of availability of housing services.

Transport and Communications

Roads and the transportation network have a significant impact on socialization and modernization. Three indicators have been included to portray the level of development of the transport and communication sector in a district: metalled road mileage per 100 square kilometers of geographical area of a district, passenger load carrying capacity as a measure of availability of transport vehicles; and number of fixed telephone connections per 1000 persons.

Note: Diverse sources are used to gather data for the above indicators. Major sources include: District Census Reports, 1998; Provincial Census Reports, 1998; Agriculture Statistics of Pakistan, 1998-99; Provincial Development Statistics, Crop Area Production 1997-98; Census of Manufacturing Industries, 1995-96 etc. To fulfill the missing gaps or for updating various information, unpublished data are also obtained from the provincial Bureaus of Statistics, State Bank of Pakistan and the Ministry of Agriculture.

BOX 2.3 MEASURES OF INEQUALITY

The measurement of disparities is an arduous task and no single statistical measure is able to capture its myriad dimensions. Recognizing these challenges, various measures are used to highlight the diverse dimensions of inequality. Four measures – Maximum-to-Minimum Ratio, Coefficient of Variation the Gini Index, and the Concentration Curve – are widely used and are described here.

Maximum to Minimum Ratio

The MMR is derived simply by dividing the maximum value by the minimum value. If MMR is equal to 1, it would imply a situation of perfect equality. In reality, the MMR is usually greater than 1. The highest to lowest ratio of DEI provides a measure of the range of national or provincial educational disparities. If this ratio is small (close to 1), it would mean that the districts have a relatively equal level of education. The greater than 1 this ratio is, the higher the degree of inequality in the level of education.

Coefficient of Variation

The CV is a measure of distance from the average or dispersion around the mean. This dispersion can be calculated in several different ways. The simple coefficient of variation is an un-weighted measure as given below:

$$CV_u \equiv \frac{1}{\bar{I}}\left[\sum_{i=1}^{n}(I_i - \bar{I})^2\right]^{1/2}$$

where,

CV is coefficient of variation

u implies un-weighted

I_i is the value of DEI

$\bar{I}$ is the mean value of DEI

and n is the number of districts.

CV_u varies from zero for perfect equality to $\sqrt{n-1}$ for perfect inequality.

Although this measure can be used for comparisons of regional disparities across time, it is problematic for comparisons between provinces because the inequality value is sensitive to the number of districts in the province. Therefore, a 'weighted coefficient of variation' is used, thus:

$$CV_w \equiv \frac{1}{\bar{I}}\left[\sum_{i=1}^{n}(I_i - \bar{I})^2 \frac{p_i}{P}\right]^{1/2}$$

where $\left(\frac{p_i}{P}\right)$ is the regional weight or share in the national or provincial population. This is better than the un-weighted CV_u for provincial comparison, as the measure of inequality depends not on the number of districts, but on the population proportion.

Gini Index

The Gini Index provides a measure of resource inequality within a population. It summarizes the extent to which actual distribution of resources differs from a hypothetical distribution of each person/unit receiving an identical share. The Gini is a dimensionless index scaled to vary from a minimum of zero to a maximum of 1: zero representing no inequality and 1 representing the maximum possible degree of inequality. The Gini is computed as follows:

$$\text{Gini} \equiv \left(\frac{1}{2\bar{I}}\right)\left(\frac{1}{n(n-1)}\right)\left[\sum_{i=1}^{n}\sum_{j=1}^{m}|I_i - I_j|\right]$$

To compute the Gini for land inequality, group data from Agricultural Census 2000 is used. The standard formula for computing the Giini for grouped data is furnished below.

$$\text{Gini} = \left|1 - \sum_{i=1}^{N}(\sigma Y_{i-1} + \sigma Y_i)(\sigma X_{i-1} - \sigma X_i)\right|$$

where,

N is the number of farm size categories (less than 1 acre, 1-2.5 acres ….. more than 150 acres)

σ represents the cumulative distribution of values

Y is the proportion of farms owned

and X is the proportion of land area owned.

Table 2.1 shows the overall status of each of the DEI components. The average school enrolment rates for children aged 5-9 and 10-14 are rather low at 34 and 44 per cent respectively. The enrolment in general disciplines for the population aged 15-24 is even lower at 18 per cent, and that for technical disciplines is almost negligible at 0.3 per cent. **Table 2.2** provides an indication of the extent of disparity. Disparities between districts are also substantial. The enrolment rate for the population aged 5-9 ranges from less than 4 per cent in Jhal Magsi, Balochistan to 75 per cent in Gujrat,

The three districts with the lowest enrolment and literacy rates are all in Balochistan.

TABLE 2.1 AVERAGE VALUE OF COMPONENTS OF DEI

	Mean	Minimum	Maximum
Enrolment 5-9 years [Primary]	33.56	3.74	74.78
Enrolment 10-14 years [Secondary]	43.93	6.81	84.61
Enrolment 15-24 years [Tertiary General]	17.53	2.14	44.18
Enrolment 15-24 years [Tertiary Professional]	0.34	0.00	3.28
Adult Literacy Rate	34.90	10.37	70.45

Source: SPDC estimates based on Population and Housing Census (1998)

TABLE 2.2 ESTIMATES OF DISPERSION IN COMPONENTS OF DEI

	Maximum to Minimum Ratio	Coefficient of Variation (%)	Gini Index (%)
Enrolment 5-9 years [Primary]	20	62.58	29.79
Enrolment 10-14 years [Secondary]	12	43.75	23.43
Enrolment 15-24 years [Tertiary-General]	21	47.46	22.85
Enrolment 15-24 years [Tertiary-Professional]	3	166.63	43.13
Adult Literacy Rate	7	51.46	23.34

Source: SPDC estimates based on Population and Housing Census (1998)

Punjab. In the case of the population aged 10-14, it varies from 7 per cent in Kohlu, Balochistan to 85 per cent in Rawalpindi, Punjab. For the population aged 15-24 enroled in general disciplines, it varies from 2 per cent in Jhal Magsi to 44 per cent in Peshawar, NWFP. And for the same age bracket enroled in professional disciplines, it varies from zero in Kila Saifullah, Balochistan, to 3 per cent in Peshawar. The literacy rate ranges from 10 per cent in Musa Khel, Balochistan, to 70 per cent in Rawalpindi. It is noteworthy that the three districts with the lowest enrolment and literacy rates are all in Balochistan and the three districts with the highest levels of enrolment and literacy are in the northern provinces of Punjab and NWFP.

Table 2.3 shows the DEI status and disparity with respect to gender and urban-rural areas. The DEI score for any district can range from 1 to 100. The closer the value of the DEI is to 100, the better endowed it is with respect to education variables. Thus, the population weighted average DEI value of 36 for Pakistan implies that the country is 64 points behind the 'ideal' value of 100. Males are relatively better off, with an average DEI of 44 and lower levels of disparity, as reflected by an MMR of 8. Females are relatively worse off, with an average DEI of 30 and an MMR of 29.

Rural areas are relatively worse off on all counts. Rural males register an average DEI of 41, with an MMR of 11, while rural females report an average DEI of 23 and an MMR of 48. Urban areas are relatively better off: the average DEI for urban males is 56, with an MMR of just 3, while the average DEI for urban females is 44, with an MMR of 21. It appears, therefore, that urban males rank highest in terms of educational endowment while rural females rank the lowest.

TABLE 2.3 DISTRICT EDUCATION INDEX: NATIONAL SCENARIO

	Average	Minimum → Maximum	Maximum Minimum Ratio	Coefficient of Variation (%)	Gini Index (%)
All Areas					
Combined	**36**	**6 → 61**	**10**	**49**	**24**
Male	44	8 → 67	8	35	20
Female	30	2 → 57	29	79	34
Rural Areas					
Combined	**32**	**4 → 57**	**14**	**50**	**26**
Male	41	6 → 66	11	37	23
Female	23	1 → 48	48	83	38
Urban Areas					
Combined	**51**	**14 → 70**	**5**	**21**	**13**
Male	56	25 → 73	3	14	10
Female	44	3 → 64	21	33	19

Note: Figures are rounded.
Source: SPDC estimates based on Population and Housing Census (1998)

The inter-provincial and urban-rural situation with respect to DEI is presented in **tables 2.4 to 2.6**. It can be seen that Punjab commands the highest DEI average of 40 and Balochistan the lowest average of 23.

TABLE 2.4 DISTRICT EDUCATION INDEX: PROVINCIAL SCENARIO [*ALL AREAS*]

	Average	Minimum → Maximum	Maximum Minimum Ratio	Coefficient of Variation (%)	Gini Index (%)
Overall					
Punjab	40	20 → 61	3	29	16
Sindh	34	13 → 52	4	57	19
NWFP	31	7 → 48	7	34	20
Balochistan	23	6 → 51	9	65	29
Male					
Punjab	47	26 → 67	3	22	13
Sindh	40	18 → 55	3	39	16
NWFP	42	12 → 58	5	25	26
Balochistan	29	9 → 58	6	53	34
Female					
Punjab	35	14 → 57	4	41	21
Sindh	29	7 → 50	7	92	25
NWFP	20	2 → 39	20	60	34
Balochistan	15	3 → 45	15	100	38

Note: Figures are rounded.
Source: SPDC estimates based on Population and Housing Census (1998)

TABLE 2.5 DISTRICT EDUCATION INDEX: PROVINCIAL SCENARIO [*RURAL AREAS*]

	Average	Minimum → Maximum	Maximum Minimum Ratio	Coefficient of Variation (%)	Gini Index (%)
Overall					
Punjab	37	16 → 57	4	31	18
Sindh	27	12 → 40	3	53	19
NWFP	28	8 → 47	6	31	20
Balochistan	19	4 → 41	10	65	32
Male					
Punjab	45	23 → 66	3	24	14
Sindh	35	18 → 47	3	38	16
NWFP	41	12 → 59	5	24	16
Balochistan	25	6 → 52	9	54	29
Female					
Punjab	28	8 → 48	6	45	25
Sindh	18	5 → 32	6	94	26
NWFP	15	2 → 35	17	56	35
Balochistan	11	1 → 31	31	103	44

Note: Figures are rounded.
Source: SPDC estimates based on Population and Housing Census (1998)

TABLE 2.6 DISTRICT EDUCATION INDEX: PROVINCIAL SCENARIO [*URBAN AREAS*]

	Average	Minimum → Maximum	Maximum Minimum Ratio	Coefficient of Variation (%)	Gini Index (%)
Overall					
Punjab	54	42 → 70	2	12	7
Sindh	48	36 → 55	2	14	6
NWFP	48	27 → 65	2	25	14
Balochistan	39	14 → 58	4	32	17
Male					
Punjab	58	48 → 73	2	10	6
Sindh	54	41 → 58	1	9	5
NWFP	56	35 → 69	2	17	10
Balochistan	48	25 → 64	3	25	14
Female					
Punjab	49	34 → 63	2	15	9
Sindh	40	29 → 50	2	24	8
NWFP	39	19 → 58	3	38	21
Balochistan	28	3 → 49	16	47	24

Note: Figures are rounded.
Source: SPDC estimates based on Population and Housing Census (1998)

Out of school children engaged in child labour.

Or, in other words, Punjab is 60 points behind the 'ideal' DEI value of 100 and Balochistan is 77 points behind. A comparison of MMRs shows that inequality is lowest in Punjab and highest in Balochistan. Sindh has a higher DEI average (34) than NWFP (31) and inequality is also higher in NWFP than in Sindh. Inequality, as shown by all three indicators, MMR, CV and Gini Coefficient, is the highest in Balochistan for both males and females, with the sole exception being the case of NWFP females, who have the highest MMR of 20.

The DEI averages for males are higher than for females across all provinces, confirming lower levels of educational attainment among women. For the male population, Punjab and Balochistan maintain their top and bottom rankings, respectively, as in the case of the aggregate DEI averages presented in **tables 1.13 to 1.15**. However, Sindh and NWFP rankings are reversed, with NWFP registering an average DEI of 42 compared to 40 in Sindh. However, inequality in NWFP continues to be higher than in Sindh. For the female population, again, Punjab and Balochistan maintain their rankings at the top and bottom. Sindh, however, leads NWFP by a wide margin of 9 points. In fact, the analysis exposes the vastly inferior position of NWFP females, with their DEI average of 20 being less than half that of NWFP males (42). Inequality in female DEI is the highest in NWFP as well, with an MMR of 20. However, the Coefficient of Variation and Gini Coefficient are higher for Balochistan than for NWFP, implying that inequality in Balochistan is higher than in NWFP.

The rural situation is more or less the same, though inequalities are sharper. In rural Punjab, males have the highest DEI average of 45 while in rural Balochistan, females have the lowest DEI average of 11. In other words, rural Punjab males are 55 points and rural Balochistan females are 89 points behind the 'ideal' DEI value of 100. The DEI averages for rural Sindh and Balochistan females are about half those of their male counterparts. The situation of rural NWFP females is worse, with their DEI average being almost one-third of their male counterparts'. Inequality with

The situation of rural NWFP females is worse, with their DEI average being almost one-third of their male counterparts'.

with respect to rural DEI is also greater, particularly for females. The Coefficients of Variation for rural females in Sindh and Balochistan are 94 and 103, respectively, while the Gini Coefficient for Balochistan is the highest at 44. The DEI averages for urban areas are uniformly higher for males than for females. Male-female differentials are also not as sharp as for rural areas and inter-district inequality is also relatively lower.

Table 2.7 provides a province-wise list of the districts in the top and bottom quintiles. Jhal Magsi and Kohlu in Balochistan, and Kohistan in NWFP rank as the districts with the lowest DEI averages for males as well as for females, while Rawalpindi and Sialkot in Punjab rank as the districts with the highest DEI averages. Province-wise and for rural areas, Rajanpur in Punjab, Tharparkar in Sindh, Kohistan in NWFP, and Kohlu in Balochistan rank as the districts with the lowest DEI average for males

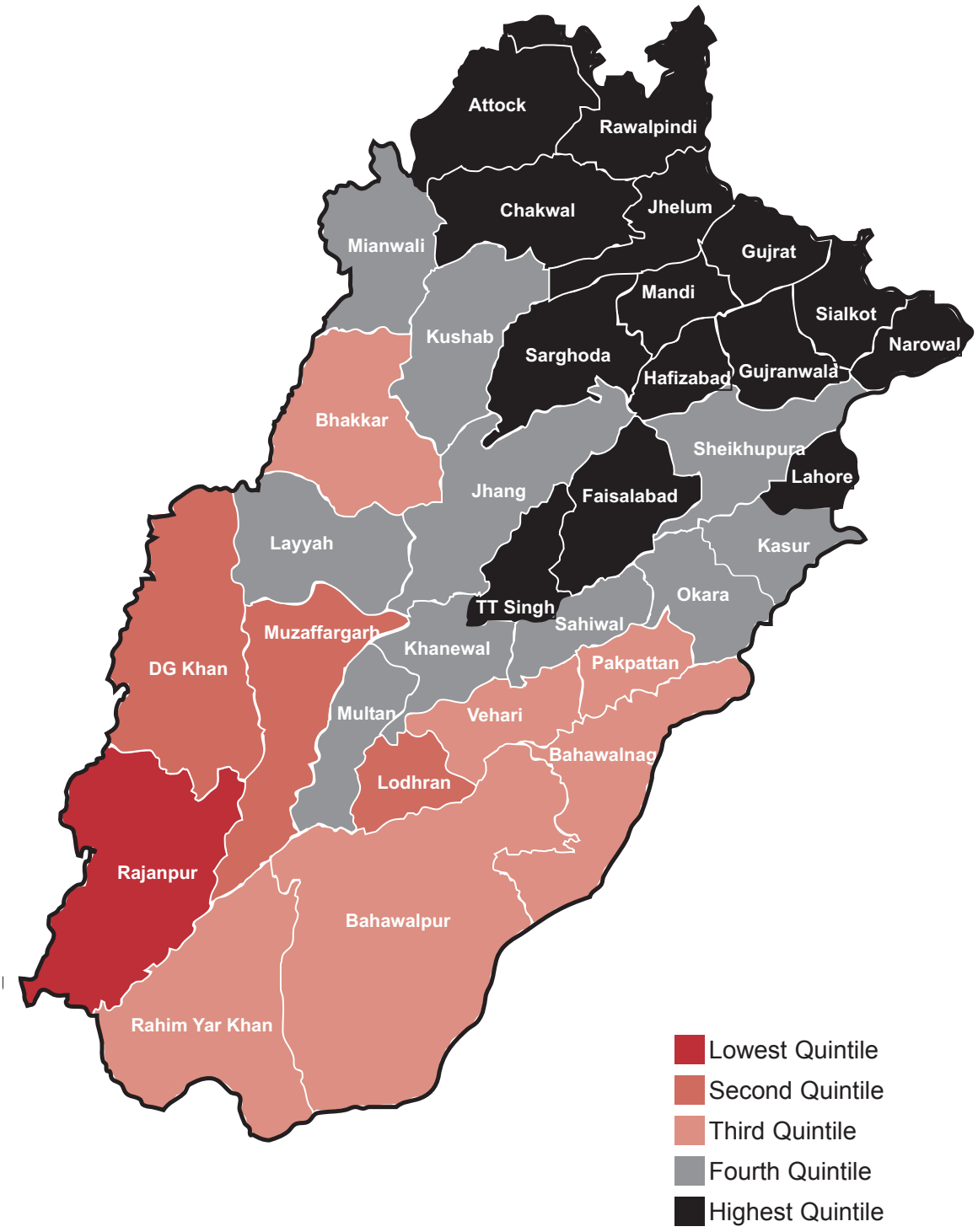
TABLE 2.7 DISTRIBUTION OF DISTRICTS BY DEI BY TOP AND BOTTOM QUINTILES

Province	Highest Quintile	Lowest Quintiles
PUNJAB	Gujranwala Chakwal Lahore Sialkot Gujrat Jehlum Rawalpindi Hafizabad Sargodha Attock M.B. Din T.T. Singh Narowal Faisalabad	Rajanpur
SINDH	Karachi	Thatta Tharparkar
NWFP	Abbotabad Peshawar Haripur	Batagram Kohistan Shangla
BALOCHISTAN	Quetta	Zhob Killa Abdullah Kalat Bolan Khuzdar Barkhan Jafarabad Loralai Jhal Magsi Kohlu Dera Bugti Nasirabad Musa Khel Awaran Kharan

Note: There are 26, 24, 16 and 34 districts in Balochistan, NWFP, Sindh and Punjab provinces, respectively.
Source: SPDC estimates based on Population and Housing Census (1998)

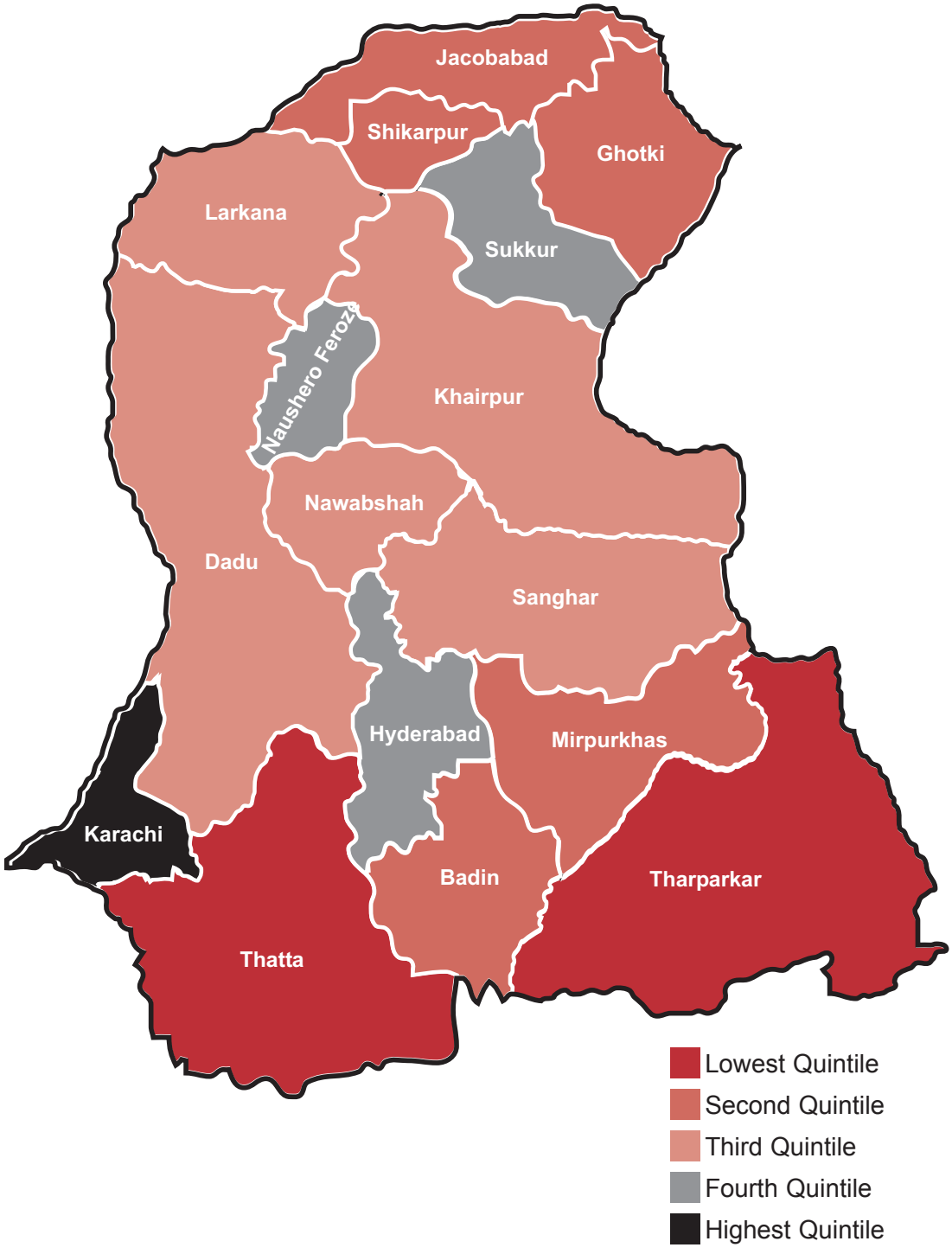
CLASSIFICATION OF DISTRICTS BY DEPRIVATION LEVEL

PUNJAB PROVINCE



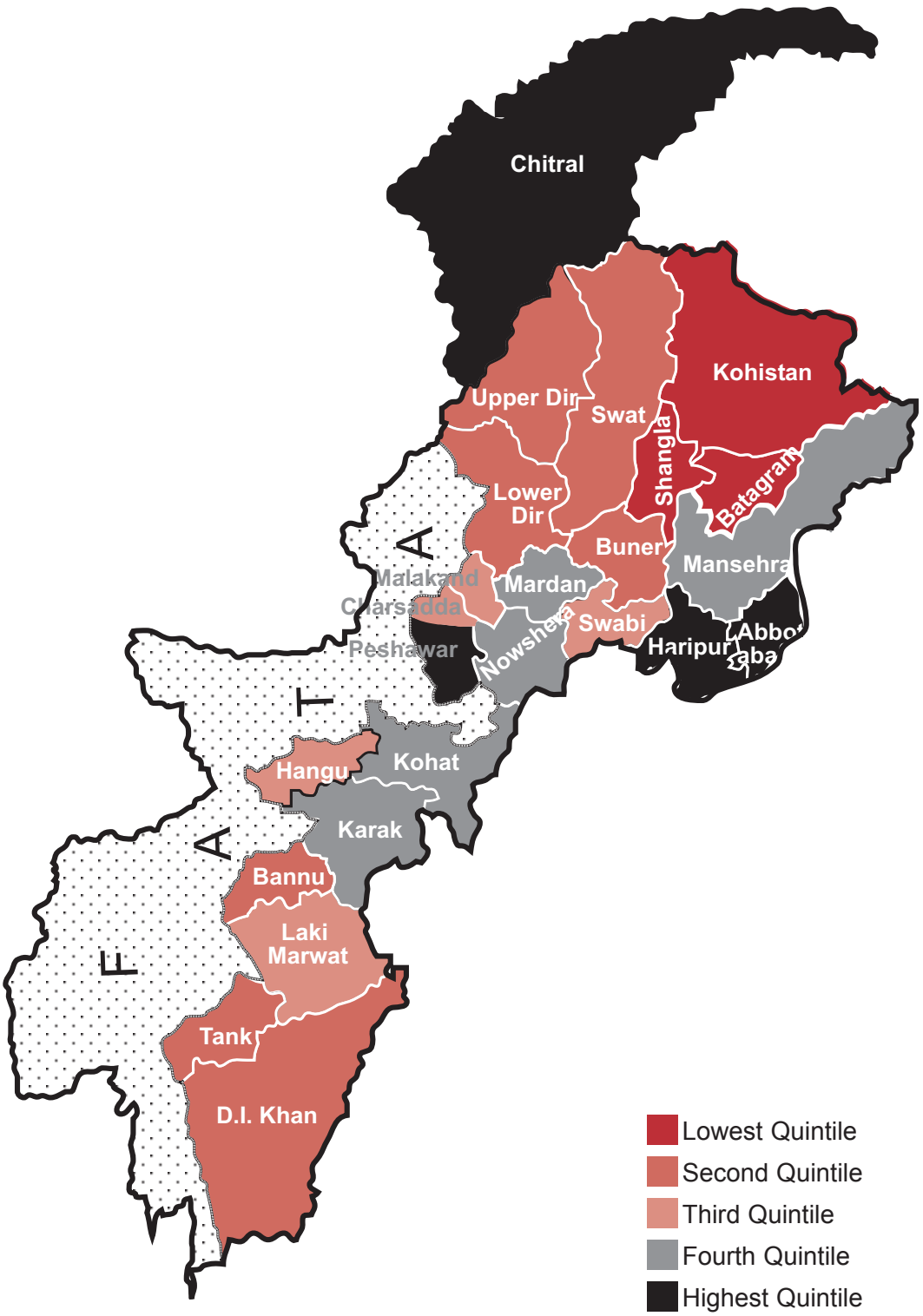
CLASSIFICATION OF DISTRICTS BY DEPRIVATION LEVEL

SINDH PROVINCE



CLASSIFICATION OF DISTRICTS BY DEPRIVATION LEVEL

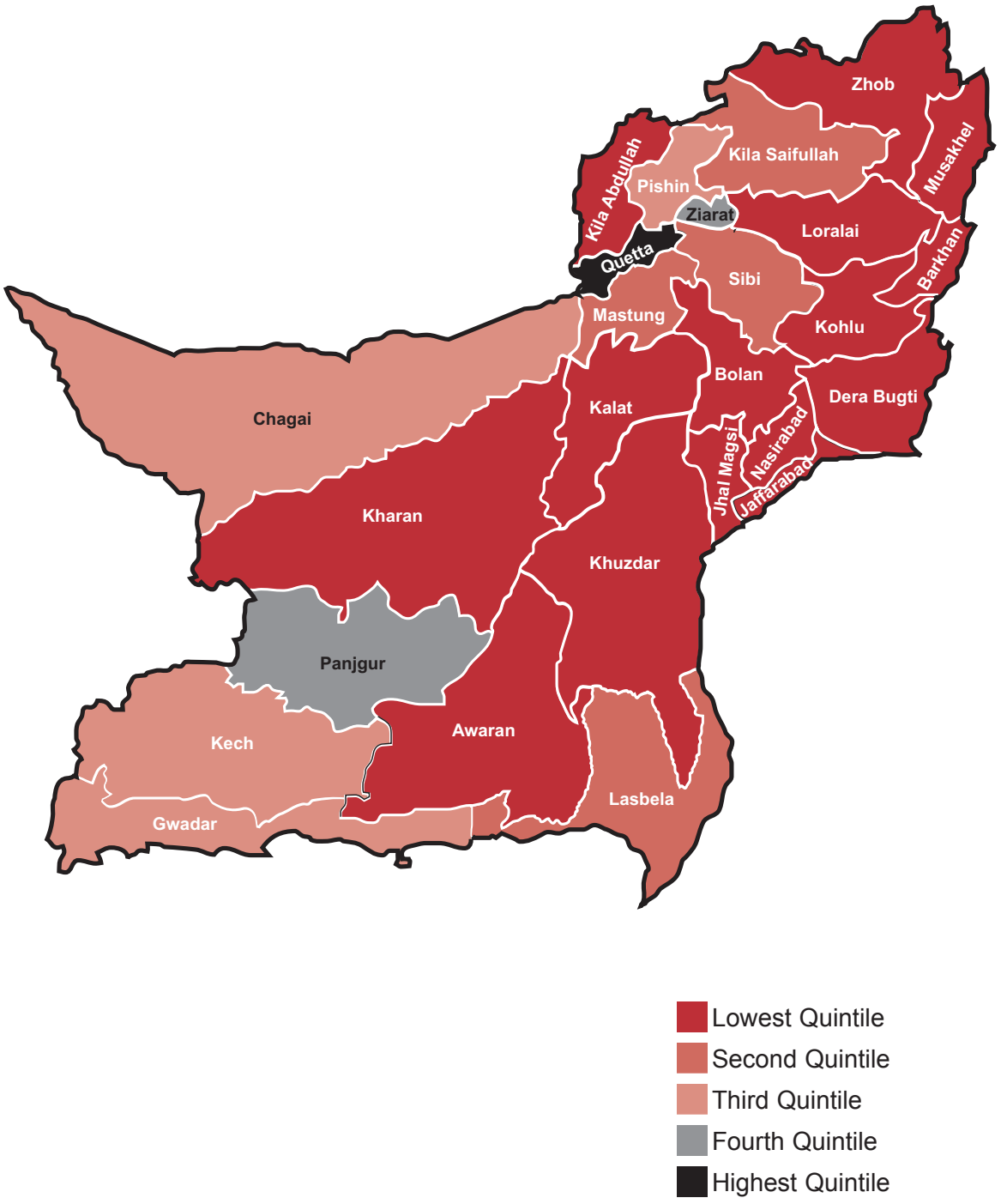
NWFP PROVINCE

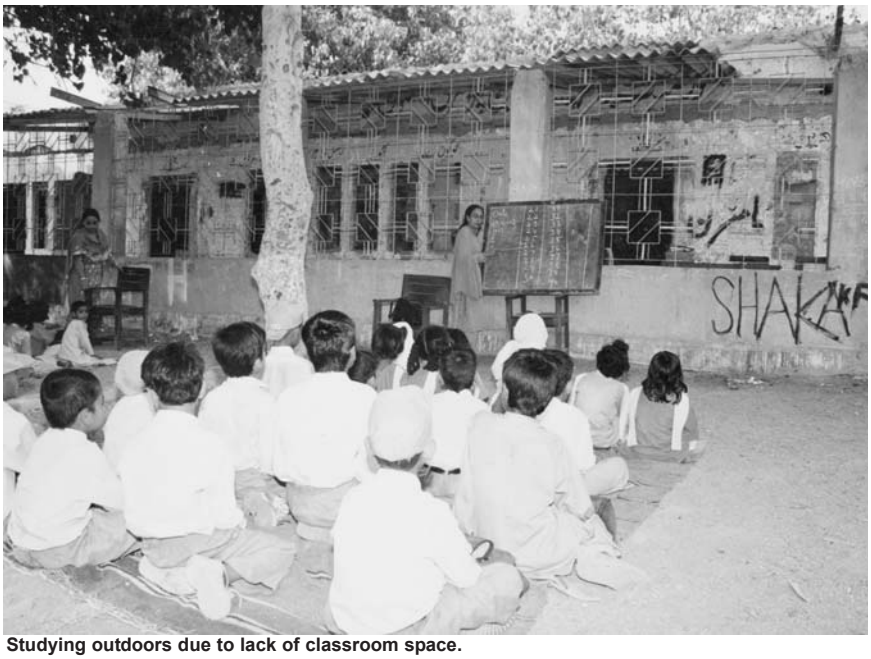


Note: Federally Administered Tribal Areas (FATA) are not included in the analysis due to non-availability of data.

CLASSIFICATION OF DISTRICTS BY DEPRIVATION LEVEL

BALOCHISTAN PROVINCE





Studying outdoors due to lack of classroom space.

as well for females. Correspondingly, Rawalpindi, Karachi and Abbotabad rank as the districts with the highest DEI averages. In Balochistan, Ziarat and Quetta rank as the districts with the highest DEI averages for males and females, respectively. In the case of urban areas, Lodhran in Punjab, Thatta in Sindh, Malakand in NWFP and Jhal Magsi in Balochistan rank as the districts with the lowest DEI average for both males and females. Correspondingly, Rawalpindi in Punjab, Karachi in Sindh, Peshawar in NWFP and Quetta in Balochistan rank have the highest DEI averages.

On the whole, 14 out of 34 districts of Punjab, three out of 24 districts of NWFP, one out of 16 districts of Sindh, and one out of 26 districts in Balochistan fall in the top quintile. On the other hand, 15 districts in Balochistan, three in NWFP, two in Sindh, and one in Punjab fall in the bottom quintile.

The Punjab districts in the top quintile include northern and central districts of Rawalpindi, Jehlum, Chakwal, Attock, Gujrat, Sialkot, Lahore, Gujranwala, Faisalabad, Narowal, Toba Tek Singh, Mandi Bahauddin, Sargodha, and Hafizabad. The districts in the top quintile in other provinces include Karachi in Sindh, Abbotabad, Peshawar, and Haripur in NWFP and Quetta in Balochistan.

The Balochistan districts in the bottom quintile include Jhal Magsi, Kohlu, Dera Bugti, Nasirabad, Musa Khel, Awaran, Kharan, Zhob, Loralai, Killa Abdullah, Kalat, Bolan, Khuzdar, Barkhan and Jafarabad. The districts in the bottom quintile in other provinces include Kohistan, Batagram and Shangla in NWFP, Tharparkar and Thatta in Sindh and Rajanpur in Punjab.

In terms of magnitude, almost half (49 per cent) of the provincial population of Punjab resides in districts falling in the top quintile, while the corresponding proportion for the bottom quintile is 1.5 percent. In Sindh, 32 and 7 per cent of the provincial population reside in the top and bottom quintile districts respectively. Excluding Karachi, the proportion of the Sindh provincial population residing in the top quintile drops to zero and

After school play.

the proportion in the bottom quintile rises to 10 per cent. In NWFP, the corresponding percentages for the top and bottom quintiles are 22 and 7 per cent. In Balochistan the corresponding percentages are 12 and 54 per cent, respectively.

The starkness of the pattern of regional inequality in educational endowments emerges from the analysis presented above. Punjab emerges as the only province in which nearly half the population is accounted for in the districts in the top quintile and less than 2 per cent of its population resides in the bottom quintile districts. Balochistan is the only province where the majority of the population falls in the bottom quintile. Sindh, excluding Karachi, emerges as the only province where no part of the population resides in the top quintile districts. The analysis establishes the case for a greater and more broad-based spread of educational opportunities in order to reduce the disparity between districts and raise their development levels.

BENEFIT INCIDENCE OF PUBLIC EDUCATION EXPENDITURE

The objective of public spending in education is to enhance the income earning capacity of the poor. This objective is not always realized and the benefits of public expenditure are often pre-empted by upper income groups, defeating the very purpose of redistributing income, promoting equity and reducing poverty. Benefit incidence analysis is a means of quantifying the distribution of benefits of public expenditure among different groups, classified by income, region, gender, etc.

The benefit incidence analysis of public expenditure in education in the four provinces of Pakistan shows a mixed pattern of distribution of benefits. The analysis is carried out in terms of the distribution of unit subsidy in education, defined as the recurring cost to the government of a student studying at a particular level in a public institution minus the corresponding revenue accrued. Given that expenditure exceeds revenue, the net result is a subsidy. Unit subsidy, therefore, implies annual per student net cost to the public sector of providing education.

Households are divided into quintiles according to their income level. All households are first ranked in descending order of income i.e., the household with the highest income is ranked first and the household with the lowest income is ranked last. The households are then divided into five equal groups, or quintiles. The top quintile, i.e., quintile 1, represents the richest 20 per cent of households and the bottom quintile, i.e., quintile 5, represents the poorest 20 per cent of households.

The analysis reveals considerable variations in unit subsidy between levels of education and between provinces. As shown in **table 2.8**, unit subsidy is generally low at between Rs. 1,366 to Rs. 3,098 at primary and secondary levels and significantly high at between Rs. 11,587 to Rs. 33,627 at the tertiary-professional level. There are significant differences between provinces as well. Unit subsidy at the primary level ranges from Rs. 1,555 in Balochistan to Rs. 3,098 in Sindh, while at the tertiary professional level, it ranges from Rs. 11,587 in Sindh to Rs. 33,627 in Balochistan. This distribution is also presented graphically in **chart 2.2**.

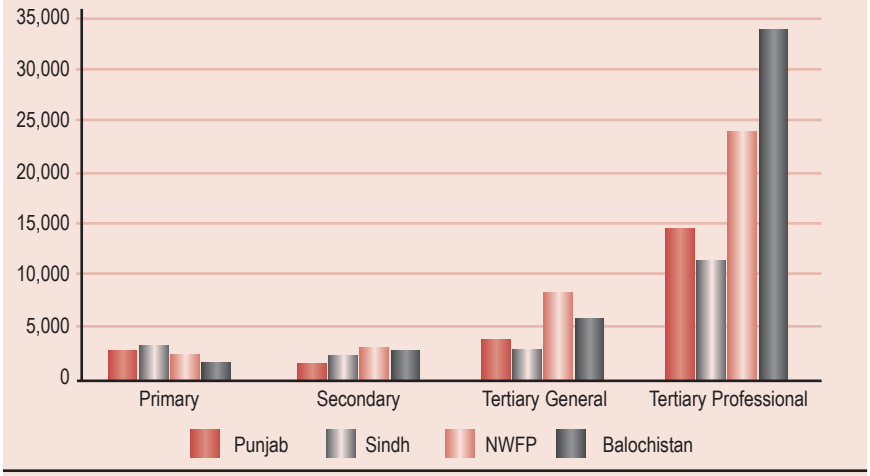
It is important to note that higher levels of unit subsidy do not necessarily imply higher spending. Unit subsidy can be higher on account of a lower level of enrolment. Furthermore, the presence of inequalities in

TABLE 2.8 UNIT SUBSIDIES ON EDUCATION (1988-99)
(Rs. / per student / annum)

Province	Primary	Secondary	Tertiary General	Tertiary Professional
Punjab	2,565	1,266	4,334	14,828
Sindh	3,098	2,029	2,772	11,587
NWFP	2,201	2,843	7,900	23,909
Balochistan	1,555	2,603	6,020	33,627

Source: Provincial and Federal Budgets (1999-2000)
PIHS (1998-99)

CHART 2.2 UNIT SUBSIDIES IN EDUCATION, 1998-99
(Rs. / per student / annum)



Source: Provincial and Federal Budgets (1999-2000)
PIHS (1998-99)

The presence of inequalities in education subsidy does not necessarily imply that public expenditures are poorly targeted.

education subsidy does not necessarily imply that public expenditures are poorly targeted. Mainly, it reflects the possibility that, due to income or other constraints, the poor tend not to use education facilities and are thus deprived of benefiting from public spending on education.

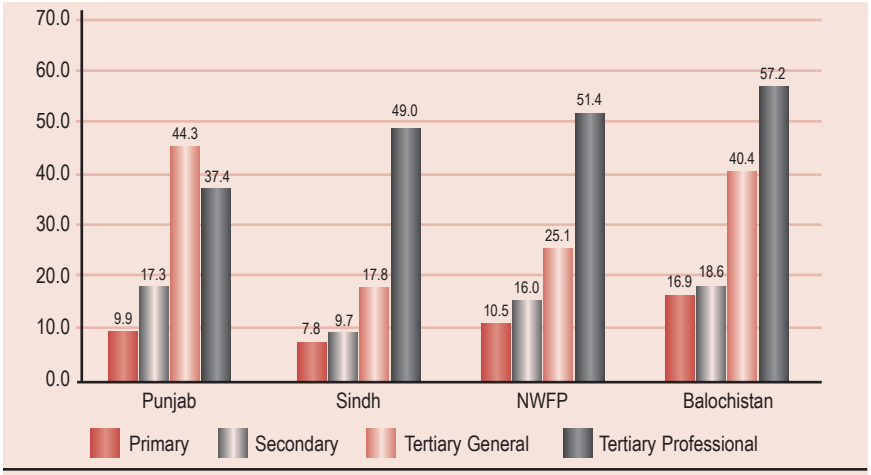
The estimates of the benefit incidence on education by income groups are shown in **table 2.9**. A graphical representation is also provided as indicated in **charts 2.3 and 2.4**. It appears that the incidence of public education expenditure in Punjab is by and large neutral, with the top 20 per cent of households utilizing 16 per cent of the subsidy and the bottom 20 per cent utilizing 23 per cent. The corresponding incidence is relatively more progressive in Sindh, where the share of the bottom quintile is twice as high as that of the top quintile. In NWFP, the major beneficiaries appear to be the second, third and fourth quintiles. It appears that the rich do not access public education and the poor, perhaps, cannot do so. In Balochistan, the incidence appears to be regressive. The first and third quintiles accrue more than their proportionate share of benefits, while the poorest 20 per cent of households accrue the least and less than their proportionate share.

TABLE 2.9 DISTRIBUTION OF BENEFIT INCIDENCE OF PUBLIC SUBSIDY ON EDUCATION (1998-99) (%)

Income Group	Primary	Secondary	Tertiary General	Tertiary Professional	Aggregate
PUNJAB					
Quintile - 1	9.9	17.3	44.3	37.4	16.1
Quintile - 2	14.7	21.4	25.9	42.9	18.4
Quintile - 3	19.6	22.6	16.1	13.1	19.6
Quintile - 4	27.6	21.1	7.2	2.4	23.1
Quintile - 5	28.2	17.7	6.5	4.2	22.8
All Groups	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
SINDH					
Quintile - 1	7.8	9.7	17.8	49.0	12.0
Quintile - 2	14.9	19.0	28.5	22.1	18.0
Quintile - 3	22.8	23.6	21.5	10.9	22.1
Quintile - 4	26.4	23.5	18.8	10.1	23.8
Quintile - 5	28.1	24.2	13.4	7.9	24.1
All Groups	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
NWFP					
Quintile - 1	10.5	16.0	38.4	51.4	18.2
Quintile - 2	17.8	22.6	28.1	23.9	20.9
Quintile - 3	23.9	24.7	19.1	10.5	22.7
Quintile - 4	26.4	19.7	6.7	7.5	20.7
Quintile - 5	21.5	17.1	7.7	6.7	17.5
All Groups	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
BALOCHISTAN					
Quintile - 1	16.9	18.6	41.5	57.2	23.0
Quintile - 2	14.9	18.1	21.7	8.1	16.7
Quintile - 3	25.4	28.2	21.7	25.7	25.8
Quintile - 4	24.7	18.3	8.3	0.0	18.8
Quintile - 5	18.2	16.8	6.8	9.0	15.6
All Groups	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

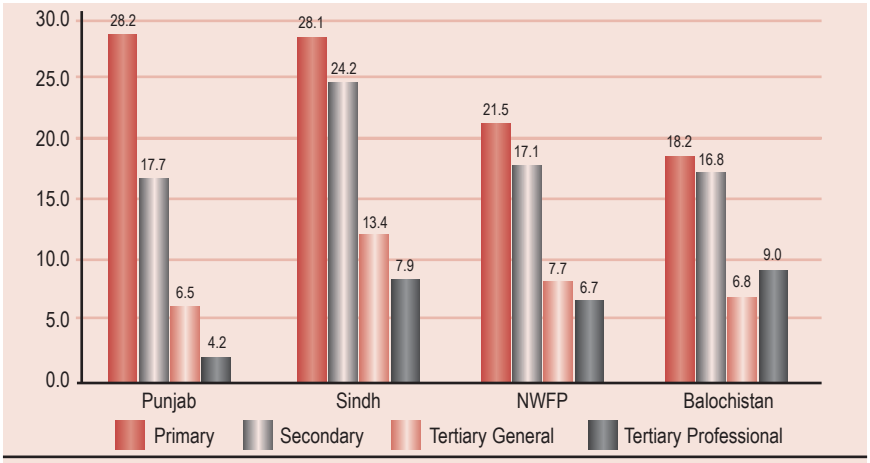
Source: SPDC estimates based on PIHS (1998-99) and Provincial Demand for Grants (1999-2000)

CHART 2.3 SHARE OF HIGHEST QUINTILE IN PUBLIC EDUCATION SUBSIDY (%)



Source: Provincial and Federal Budgets (1999-2000)
PIHS (1998-99)

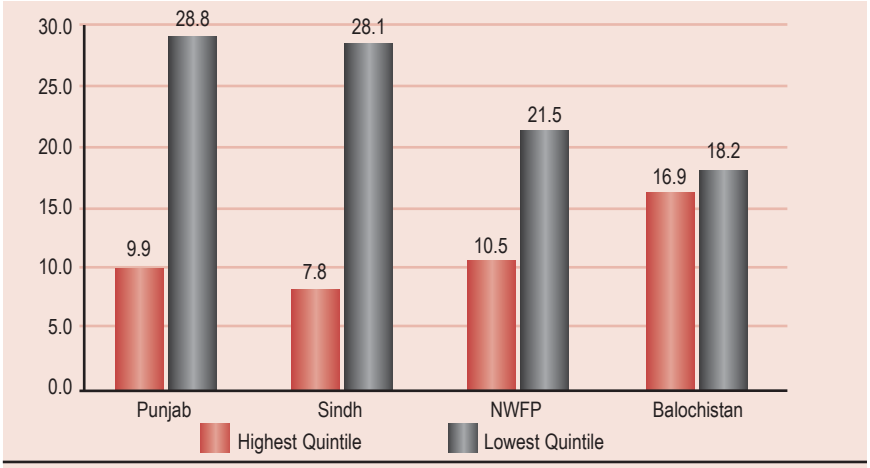
CHART 2.4 SHARE OF LOWEST QUINTILE IN PUBLIC EDUCATION SUBSIDY (%)



Source: Provincial and Federal Budgets (1999-2000)
PIHS (1998-99)

The incidence of public spending in the case of primary education favours the bottom two quintiles. This is particularly true in Punjab and Sindh, where the bottom two quintiles, accounting for 40 per cent of the households, utilize more than half the share of benefits. By contrast, the top two quintiles in both the provinces, accounting for 40 per cent of the households, utilize less than 25 per cent of the benefits. In NWFP and Balochistan, the benefit incidence is somewhat less progressive, given that the third and fourth quintiles utilize a higher share of benefits than the fifth quintile. However, the benefit share of the top two quintiles is less than their share in terms of percentage of households. The shares of the highest and lowest quintiles in the primary education subsidy are presented graphically in **chart 2.5**.

CHART 2.5 SHARE OF HIGHEST AND LOWEST QUINTILE IN PUBLIC SUBSIDY ON PRIMARY EDUCATION (%)

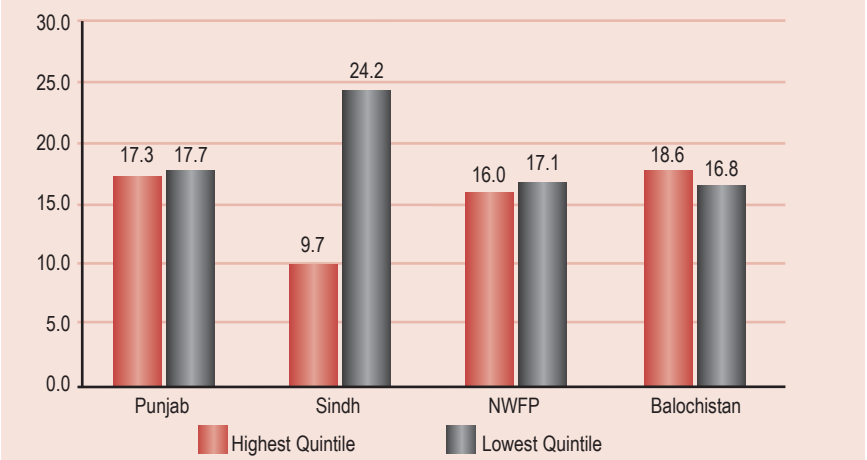


Source: Provincial and Federal Budgets (various issues)
PIHS (1998-99)

The incidence of benefits with respect to secondary education is somewhat neutral in Punjab, with the share of benefits for any one quintile ranging within a narrow band of 17 to 23 per cent **(see chart 2.6 and table 2.9)**. In NWFP and Balochistan, the middle quintiles appear to be the principal beneficiaries at the expense of the top and bottom quintiles. By contrast, the benefit incidence is the most progressive in Sindh, with the least benefit accruing to the top quintile and the maximum benefit accruing to the bottom quintile.

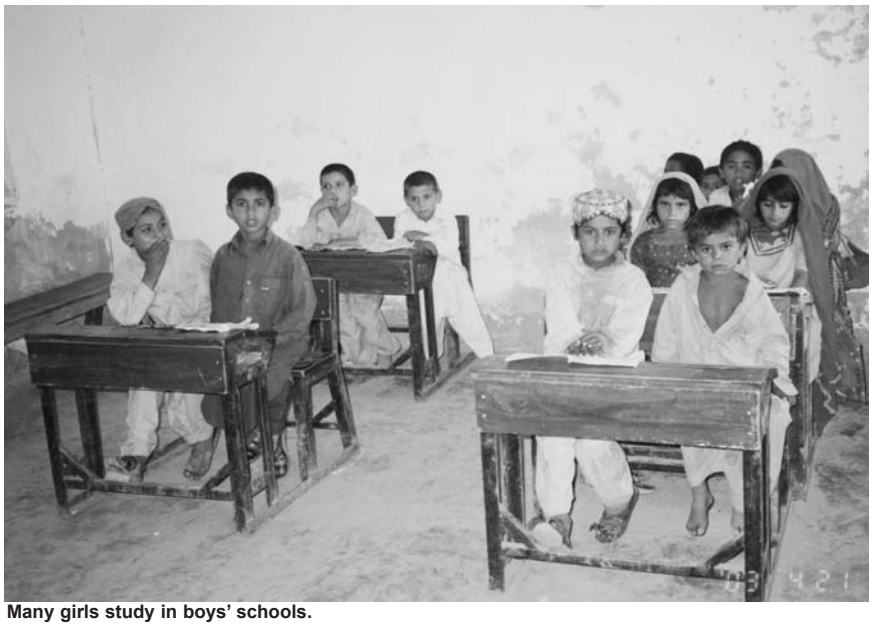
The benefit incidence turns regressive in the case of tertiary education, particularly with respect to professional education, where the disparity is sharper. As indicated in **chart 2.7**, the benefits of public

CHART 2.6 SHARE OF HIGHEST AND LOWEST QUINTILE IN PUBLIC SUBSIDY ON SECONDARY EDUCATION (%)



Source: Provincial and Federal Budgets (1999-2000)
PIHS (1998-99)

The benefit incidence turns regressive in the case of tertiary education, particularly with respect to professional education, where the disparity is sharper.

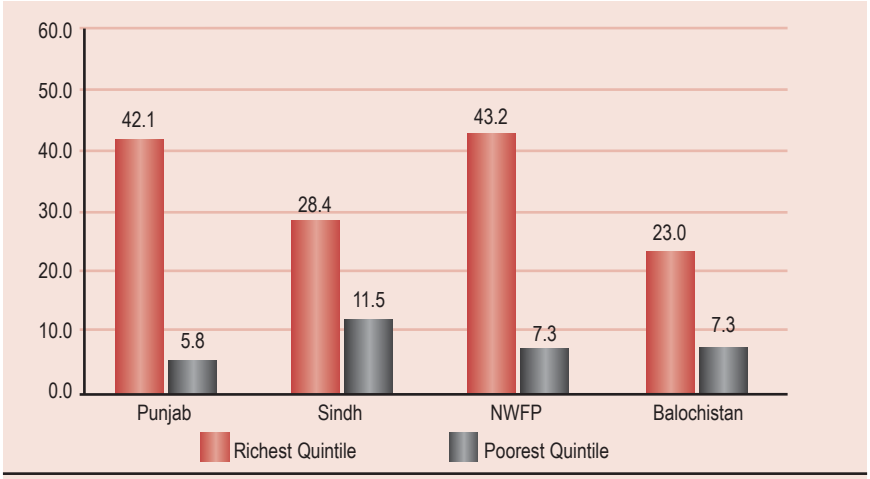


Many girls study in boys' schools.

expenditure in this sphere appear to be pre-empted by the upper income households. For example, the top 20 per cent of households in all the provinces utilize a significantly greater proportion of benefits: 37, 49, 51 and 57 per cent in Punjab, Sindh, NWFP and Balochistan, respectively. The situation is similar in the case of general education, although not as stark as for professional education. The shares of the highest and lowest quintiles in tertiary education subsidy are presented graphically in **chart 2.7**.

The analysis presented above is based on aggregated shares of various income groups and does not take the population size of relevant groups into account. Disparities among the income groups become more

CHART 2.7 SHARE OF HIGHEST AND LOWEST QUINTILE IN PUBLIC SUBSIDY ON TERTIARY EDUCATION (%)



Source: Provincial and Federal Budgets (1999-2000)
PIHS (1998-99)

obvious if subsidies are compared on a unit, or per student, basis, as shown in **table 2.10**. While the share of the lowest quintile in the total amount of public subsidy at the primary level is greater than that of the highest quintile, the unit subsidy is lower. This is because poorer households have a larger family size and there are a greater number of children. In fact, the number of children in the 5-9 age cohort is about four times higher in the quintile compared to the highest quintile.

The ratio of unit subsidy of the 'lowest to the highest' quintile provides a measure of inequality **(see chart 2.8)**. It is significant that all ratios across the board are less than one, indicating that benefits

TABLE 2.10 DISTRIBUTION OF BENEFIT INCIDENCE OF PUBLIC SUBSIDY ON EDUCATION, 1998-99
(Rs. per student)

Income Group	Primary	Secondary	Tertiary*	Aggregate
PUNJAB				
Quintile - 1	1,265	782	715	886
Quintile - 2	1,435	756	422	797
Quintile - 3	1,459	663	195	726
Quintile - 4	1,524	512	78	751
Quintile - 5	1,169	346	82	627
All Groups	**1,356**	**566**	**282**	**739**
SINDH				
Quintile - 1	1,324	938	736	930
Quintile - 2	1,298	1,020	489	862
Quintile - 3	1,462	942	303	858
Quintile - 4	1,267	842	268	806
Quintile - 5	994	644	188	660
All Groups	**1,218**	**837**	**368**	**797**
NWFP				
Quintile - 1	1,276	1,506	979	1,197
Quintile - 2	1,336	1,520	682	1,134
Quintile - 3	1,378	1,383	319	1,021
Quintile - 4	1,369	1,015	183	893
Quintile - 5	922	757	429	734
All Groups	**1,228**	**1,173**	**503**	**963**
BALOCHISTAN				
Quintile - 1	1,189	1,398	1,188	1,242
Quintile - 2	758	1,407	528	796
Quintile - 3	874	1,264	263	775
Quintile - 4	864	827	144	651
Quintile - 5	674	798	282	591
All Groups	**844**	**1,091**	**459**	**778**

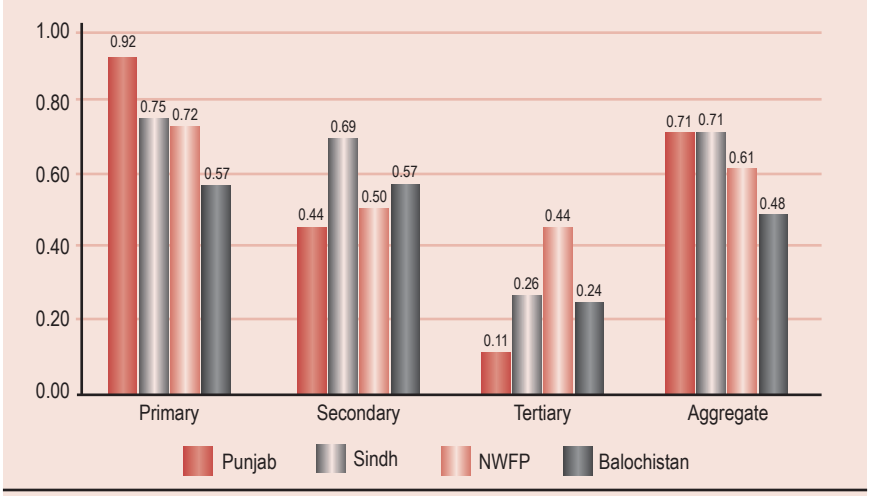
*Includes General and Professional
Source: Provincial and Federal Budgets (1999-2000)
PIHS (1998-99)

All ratios across the board are less than one, indicating that benefits accruing to the highest quintile exceed those accruing to the lowest.

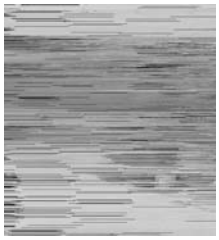
Primary class in NWFP.

accruing to the highest quintile exceed those accruing to the lowest. The ratio for all education levels ranges from 0.48 for Balochistan to 0.71 for Punjab and Sindh, implying that for every rupee of subsidy devoted in Balochistan to the top quintile, 48 paisas is devoted to the bottom quintile, and for every rupee of subsidy in Punjab and Sindh devoted to the top quintile, 71 paisas is devoted to the bottom quintile. The disparity is sharpest with respect to tertiary education, where the ratio ranges from 0.11 in Punjab to 0.44 in NWFP. In other words, for every rupee of subsidy on tertiary education in Punjab devoted to the top quintile, 11 paisas is devoted to the bottom quintile, and for every rupee of subsidy on tertiary education in NWFP devoted to the top quintile, 44 paisas is devoted to the bottom quintile.

CHART 2.8 RATIO OF UNIT SUBSIDY OF THE LOWEST TO THE HIGHEST QUINTILE



Source: Provincial and Federal Budgets (1999-2000)
PIHS (1998-99)



Picking up students after school.

Gender disparities also tend to coexist with regional disparities. A gender-segregated analysis of benefit incidence of educational expenditure, shown in **table 2.11** and presented graphically in **chart 2.9**, corroborates the presence of this phenomenon. It can be seen that the share of education subsidy for females enroled is lower than that of males

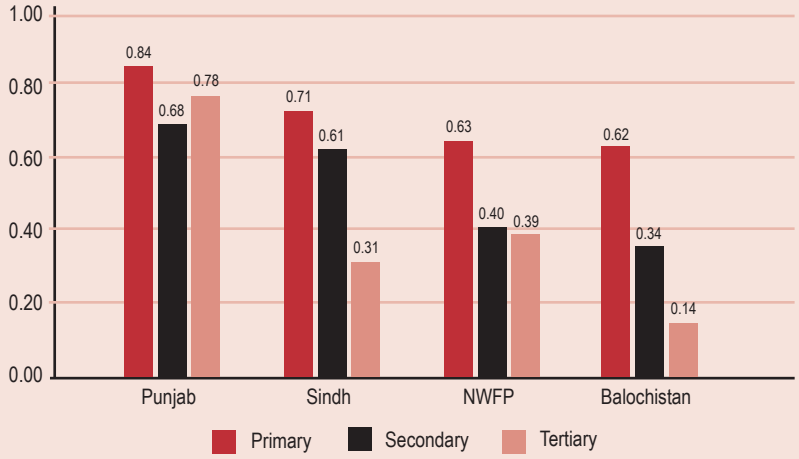
The share of education subsidy for females enroled is lower than that of males enroled for all levels of education and in all provinces.

TABLE 2.11 DISTRIBUTION OF GENDER SEGREGATED BENEFIT INCIDENCE OF SUBSIDY ON EDUCATION

	Per Capita Subsidy		Percentage Share	
	Male	Female	Male	Female
PUNJAB				
Primary	1,475	1,233	55	45
Secondary	670	455	61	39
Tertiary	229	179	55	45
SINDH				
Primary	1,422	1,011	59	41
Secondary	1,034	626	64	36
Tertiary	371	115	79	21
NWFP				
Primary	1,492	945	63	37
Secondary	1,694	679	70	30
Tertiary	536	209	71	29
BALOCHISTAN				
Primary	1,019	636	66	34
Secondary	1,563	539	77	23
Tertiary	631	87	89	11

Source: Provincial and Federal Budgets (1999-2000)
PIHS (1998-99)

CHART 2.9 **RATIO OF FEMALE TO MALE PER CAPITA SUBSIDY**



Source: Provincial and Federal Budgets (1999-2000)
PIHS (1998-99)

enroled for all levels of education and in all provinces. This disparity is more pronounced in tertiary education than in other levels in all provinces except Punjab. The gender gap is the widest in the case of tertiary education in Balochistan, where for every rupee of subsidy devoted to males, only 13 paisas is devoted to females.

EDUCATION AND DEVELOPMENT

3

"It is not the production of goods, but the production of ideas that now provides the impetus for economic development."

EDUCATION AND DEVELOPMENT

The establishment of a centrally planned economy in Russia in 1917 placed economic growth and development at the centre stage of the modern state's functions. Analysts and researchers began to search for the factors that determined growth. One influential set of theories put forward scarcity of capital as the principal bottleneck to growth, leading to the creation of a whole edifice of foreign economic assistance with the purpose of injecting capital into poor countries to help them build infrastructure and economic assets. The impulse for growth was largely exogenous. Another set of theories focused more on endogenous factors, particularly the technological endowments that combine capital and labour to produce goods and services. Endogenous growth models emphasized the key role of human capital, particularly the externalities factors related to the accumulation of knowledge in engendering growth and development.

Education has a wide range of advantages and benefits: economic, social and political. The positive relationship between economic development and education levels and the impact of investment in education on economic growth are well established. The transition of the world towards a knowledge-based economy is adding to the importance of human resources in general, and of education in particular. Human resources are poised to command an increasingly important role in the balance of world economics and, hence, political power. In addition to economic and political impacts, and also because of them, education leads to social spill-overs as well.

This chapter documents the case for investment in education on grounds of economic gains as well as social benefits. It investigates the relationship between education and development levels on the basis of a district level analysis and examines the emerging role of the knowledge economy. It also quantifies the gains in terms of higher economic growth from a shift of expenditure towards education and examines the benefits of education that accrue to private individuals as well as to society as a whole.

THE EDUCATION-DEVELOPMENT RELATIONSHIP

The role of education and of research and development (R&D) in production is now fairly well established. The average level of education in society is shown to extend benefits (i.e., externalities) across firms to raise their overall level of productivity. Education is stated to be a key factor in enhancing total factor productivity and inducing technical change towards higher economic growth. Skill development through education has also been identified as a key determinant of comparative advantage and manufacturing export performance. Economies that have been relatively more successful have been shown to owe much of their

An English-medium private school.

achievements to their human capital in general, and to their educational levels in particular.

A wide range of international studies has established that, by and large, human resource development impacts economic development positively. Of course, higher levels of economic development enable higher allocations of resources to attain higher levels of human resource development. However, human resource development remains the basic step to economic development.

Within Pakistan, the examination of this link between education variables, represented by the District Education Index (DEI), and development variables, represented by the District Development Index (DDI), reveals that districts with a higher literacy level have a higher level of development. The hypothesis tested is as follows: development level is positively associated with education variables, i.e., literacy and enrolment levels. The association between education variables and the development level has been determined by first ranking the 100 districts in ascending order of their DDI and then clustering them into five equal groups, or quintiles, of 20 districts each. The average value of the DDI has then been derived for each quintile. Corresponding quintile averages have also been obtained for the education variables.

The value of the correlation coefficient between DEI and DDI emerges as high as 0.871, implying that districts which rank high in terms of education variables also rank high in terms of development variables. **Table 3.1** further explains the nature of this relationship. It can be seen that lower levels of literacy are associated with lower levels of development and that development levels go up as male and female literacy levels rise. This relationship is also presented graphically in **chart 3.1.**

Human resource development remains the basic step to economic development.

TABLE 3.1 LITERACY AND DEVELOPMENT BY QUINTILES

Quintile	Development Score	Literacy (%)	
		Male	Female
1	21.34	43.84	17.03
2	32.13	52.95	25.16
3	38.06	49.14	25.26
4	46.01	59.21	36.49
5	76.21	67.26	55.96

Source: SPDC estimates based on Population and Housing Census (1998)

CHART 3.1 LITERACY AND DEVELOPMENT TRENDS BY QUINTILES

Source: SPDC estimates based on Population and Housing Census (1998)

THE CHALLENGE OF KNOWLEDGE-BASED ECONOMICS

The world economy has progressed through different phases – from hunting to pastoral to agricultural to industrial to post-industrial. A common denominator of all these phases was that they were primarily resource-based. While the first two phases were based on natural resources, the latter two were based largely on capital. There have been a few cases of successful economies that are not resource-based. Japan, Cyprus and Dubai, for example, are resource poor economies that have exploited enterprising ideas to develop into high income societies. Japan relied on skills and technology to develop an industrial base. Cyprus used its natural features and investor friendly politicolegal system to promote tourism, banking and other service sectors. Dubai capitalized on innovative ideas to develop a range of economic activities to cater to the international traveller and consumer. However, the concept of the knowledge-based economy transcends these cases.

Technological changes and globalization of markets are setting an unprecedented process of transformation of the economies of the world from the traditional 'resource' to a 'knowledge' basis. Knowledge is now a decisive factor for development and long-term growth, and for economic leaders of the world, the balance between resources and knowledge has tipped towards the latter. The most important components of a knowledge-based economy are human and institutional capital as opposed to physical and financial capital in the resource-based economy. Three essential pillars of a knowledge-based economy are data as facts, knowledge as a stock of facts, and information as the way knowledge can be employed to create wealth.

The transition has sociopolitical implications, which are discussed in **box 3.1**. On the economic front, the shift from resource to knowledge-based economies has required a rethinking of standard economic models rooted in the traditional realm of land, labour and capital as prime factors of production. Comparative advantage is no longer contingent on these tangible inputs, but on the intangible factor of 'what people know'. It is not the production of goods, but the production of ideas that now provides the impetus for economic development. The momentum for rapid growth is provided by the fact that knowledge – the engine of growth – can be replicated, once produced, at very low transaction costs. Furthermore, new knowledge leading to new techniques and processes of production offsets diminishing returns – the concept that marginal benefits decrease as the activity rate increases – and allows firms to continue to benefit from economies of scale.

BOX 3.1 A HISTORIC IMPERATIVE FOR CHANGE

The changes in production relations as a consequence of the transformation of world economies from one phase to another has also seen a corresponding adaptation and change in social and political institutions of governance. For example, the pastoral/agricultural era saw the dominance of the tribal/feudal systems, which found themselves replaced by the capitalist order upon the onset of the Industrial Revolution. Europe led the process of change, which enabled it to colonize parts of the world where traditional modes of production and governance structures continued to prevail. Societies, states, kingdoms and empires that failed to adapt accordingly found themselves overwhelmed by superior forces.

In the tribal/feudal age, education was generally a 'consumption good', accessed largely by the elite. The Industrial Revolution generated the need for a skilled labour force and served to expand the educational base, leading to mass literacy. Correspondingly, the aristocratic power structure of society and state gave way to a more democratic dispensation and the populace emerged as participants in economic as well as political decision-making. The emergence of knowledge-based economies has elevated the human resource factor to a central position in economic, social and political domains. Institutions of governance are also undergoing rapid change towards international collectivism in areas ranging from trade and environment to human rights and security.

Pakistan presents a rather unfortunate picture with respect to the need for change to meet the imperatives of time. Except for the western educated elite in the large urban centers, society and state appear to have been frozen in the tribal/feudal age, reflecting the value placed on human resources by that age. That Pakistan has abjectly failed to develop its human resources over the last half century can, perhaps, be seen in this context. Having failed to even make a broad-based transition to the industrial age, it finds itself face to face with a world that is two stages ahead. Thus, the urgency and imperative of a transformation of societal and state values and structures and the development of human resources cannot be ignored, given the challenges posed by the emerging knowledge-based economies in the world and in the region itself.

The most important components of a knowledge-based economy are human and institutional capital as opposed to physical and financial capital in the resource-based economy.

One of the characteristics of knowledge is that it frequently makes previous knowledge or goods obsolete. Knowledge-based growth continues to shorten product life cycles, compresses development cycles, drives product prices downward, and increases competition for technical standards. Thus, disequilibrating factors are a crucial component of the development process. Rapid advance of knowledge has set in a process of *creative destruction* and *creative accumulation*. The former involves entrepreneurs entering niches in the market and challenging existing firms. The latter harnesses the products of the first approach and accumulates knowledge in specific technological areas and markets.

A knowledge-based society necessarily requires a higher average standard of education and a greater proportion of its work force as knowledge workers. This society is characterized by an increase in structured knowledge in the form of digital expertise and integrated artificial intelligence. However, the concept of knowledge-based economics should not be confused with that of information and communications technology. Technology is only a subset of the content of knowledge that encompasses a knowledge-based society. The new type of knowledge, unlike the knowledge-based work the industrial society relied on, goes beyond the skills of professionals such as scientists, engineers, technicians, architects, lawyers, doctors, economists, etc. It is a more multi-disciplinary and holistic body of knowledge and requires institutionalization to be productive. **Table 3.2** provides the essential characteristics of the old resource-based and the new knowledge-based economies.

MEASURING THE KNOWLEDGE-BASED ECONOMY

Efforts have been made to develop a measure of a knowledge-based economy. Needless to say, the task is not easy, given that terms like knowledge, ideas, innovation, skills, technology, learning and the like are far too complex to be quantified and captured comprehensively through statistical measures. Moreover, it is impossible to reflect the full range of knowledge that is generated in an economy. Knowledge and technological innovations that are created informally and through indigenous knowledge systems generally go unrecorded and cannot be quantified. However, subject to these limitations, efforts have been made to measure where an economy stands relative to other economies with regard to knowledge and technological achievement. Two indices have been developed for this purpose: the Technology Achievement Index and the Knowledge Economy Index

Knowledge and technological innovations that are created informally and through indigenous knowledge systems generally go unrecorded and cannot be quantified.

The Technology Achievement Index (TAI) measures the level of technological achievement of an economy. It is based upon four components, each comprising two variables **(see table 3.3)**. The first component, Technology Creation, includes (i) the number of patents granted to residents per million residents, and (ii) receipts of royalties and license fees in US$ per 1,000 persons. The second component, Diffusion of Old Innovations, includes (i) the number of mainline and cellular telephones per 1,000 persons, and (ii) per capita kilowatt-hour of electricity consumption. The third component, Diffusion of New Innovations, includes (i) the number of Internet hosts per 1,000 persons, and (ii) high and medium technology exports as a percentage of total

TABLE 3.2 KEYS TO THE OLD AND NEW ECONOMIES

Issues	Old Economy	New Economy
Economy-Wide Characteristics		
Markets	Stable	Dynamic
Scope of Competition	National	Global
Organizational Form	Hierarchical, Bureaucratic	Networked
Industry		
Organization of Production	Mass Production	Flexible Production
Key Drivers of Growth	Capital Labour	Innovation Knowledge
Key Technology Driver	Mechanization	Digitization
Source of Competitive Advantage	Lowering Cost Through Economies of Scale	Innovation, Quality, Time-to-Market, and Cost
Importance of Research/Innovation	Low-Moderate	High
Relations with Other Firms	Go it Alone	Alliances and Collaboration
Workforce		
Policy Goal	Full Employment	Higher Real Wages and Incomes
Skills	Job-Specific Skills	Broad Skills and Cross-Training
Requisite Education	A Skill or Degree	Lifelong Learning
Labour-Management Relations	Adversarial	Collaborative
Nature of Employment	Stable	Market by Risk and Opportunity
Government		
Business-Government Relations	Import Requirements	Economic Growth Opportunities
Regulation	Command and Control	Market Tools, Flexibility

Source: New Economy Indexes, Progressive Policy Institute, 2000-02

TABLE 3.3 COMPONENTS OF THE TECHNOLOGY ACHIEVEMENT INDEX

Technology Creation

- Patents granted to citizens (per million people)
- Receipts of Royalties and License Fees (US$ per 1000 people)

Diffusion of Old Innovations

- Telephones (mainline and cellular per 1000 people)
- Electricity Consumption (kilowatt-hour per capita)

Diffusion of Recent Innovations

- Internet Hosts (per 1000 people)
- High and Medium Technology Exports (as % of total goods exported)

Human Skills

- Mean Years of Schooling (15 years and above)
- Cross Tertiary Science Enrolment Ratio (%)

Source: UNDP, Human Development Report (2001)

goods exports. The fourth component, Human Skills, includes (i) average years of schooling for the population aged 15 years and above, and (ii) the gross tertiary science enrolment ratio.

The Knowledge Economy Index (KEI) measures how effectively an economy creates, diffuses and uses knowledge for its economic and social development. The KEI is a more comprehensive index and comprises 76 structural and qualitative variables. Across the 76 variables, four components have been identified as critical to the development of a knowledge-based economy. These include: (i) the economic incentive regime, (ii) information infrastructure, (iii) innovation, and (iv) education. Each of these components constitutes a set of three variables used as proxies for knowledge creation and promotion **(see table 3.4)**. The GDP growth rate and the Human Development Index are also included as measures of socioeconomic performance.

TABLE 3.4 COMPONENTS OF THE KNOWLEDGE ECONOMY INDEX

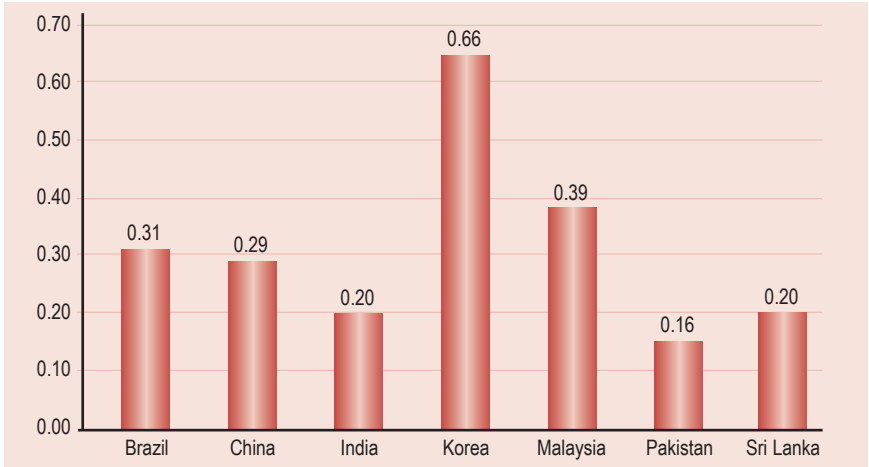
Economic Incentive Regime
• Tariff and Non-Tariff Barriers
• Property Rights
• Regulations
Information Infrastructure
• Telephone Lines (per 100 people)
• Computers (per 1000 people)
• Internet Hosts (per 10,000 people)
Innovation
• Researchers in R&D
• Manufacturing Trade (as % of GDP)
• Scientific and Technical Publications (per million people)
Education and Human Resources
• Adult Literacy Rate (age 15 and above)
• Secondary Enrolment Rate
• Tertiary Enrolment Rate

Source: The World Bank Group, 2002

Pakistan's standing, with respect to the Technology Achievement Index **(see chart 3.2)** and the Knowledge Economy Index, in comparison with a few arbitrarily selected emerging world leaders, presents a disappointing situation. The countries selected for this purpose are Brazil, China, India, Korea, and Malaysia. Sri Lanka has also been included, given that it is the only South Asian country with a first world human development ranking.

The Human Development Report 2001 divides world economies, on the basis of their TAI value, into leaders, potential leaders, dynamic adopters, marginalized and others. A study of **table 3.5** shows that Korea, with a TAI of 0.666, ranks among the leaders. Malaysia, with a TAI of 0.396, ranks among the potential leaders. Brazil, China, Sri Lanka and India – with TAIs of 0.311, 0.299, 0.203, and 0.201, respectively – rank

CHART 3.2 TECHNOLOGY ACHIEVEMENT INDEX (TAI)



Source: Human Development Report (2001)

TABLE 3.5 TECHNOLOGY ACHIEVEMENT INDEX: COUNTRY RANKING

	Brazil	China	India	Korea	Malaysia	Pakistan	Sri Lanka
Technology Creation							
Technology Achievement Index (TAI)	0.31	0.29	0.20	0.66	0.39	0.16	0.20
Patents Granted to Residents (per million people, 1998)	2	1	1	779	-	-	-
Receipts of Royalties and License Fees (US$ per 1000 people, 1999)	0.8	0.1	-	9.8	0.0	-	-
Diffusion of Old Innovations							
Telephones (mainline & cellular, per 1000 people, 1999)	238	120	28	938	340	24	49
Electricity Consumption (kilowatt-hours per capita, 1998)	1,793	746	384	4,497	2,554	337	244
Diffusion of Recent innovations							
Internet Hosts (per 1000 people, 2000)	7.2	0.1	0.1	4.8	2.4	0.1	0.2
High and Medium Technology Exports (as % of total goods exported, 1999)	32.9	39.0	16.6	66.7	67.4	7.9	5.2
Human Skills							
Mean Years of Schooling (age 15 and above, 2000)	4.9	6.4	5.1	10.8	6.8	3.9	6.9
Gross Tertiary Science Enrolment Ratio (%, 1995-97)	3.4	3.2	1.7	23.2	3.3	1.4	1.4
Technology Achievement Index (TAI)	**0.31**	**0.29**	**0.20**	**0.66**	**0.39**	**0.16**	**0.20**

Source: Human Development Report (2001)

among the dynamic adopters. And Pakistan, with a TAI of 0.167, ranks among the marginalized economies. Pakistan also ranks behind India in all but one variable of the TAI. The value for 'Internet Hosts per 1000 persons' is equal at 0.1 for both Pakistan and India.

Table 3.6 presents the KEI of the seven countries and its components. Korea, with a KEI of 5.73 ranks highest among the seven countries, followed by Malaysia at 4.72 and Brazil at 4.11. Sri Lanka at 3.36 ranks higher than China at 3.11 and India at 2.07. Pakistan stands significantly below at 1.36. Once again, Pakistan lags behind India in nine out of 14 variables, is equal in two and ahead in three. The relative position of the countries with respect to KEI is presented graphically in **chart 2.3**.

TABLE 3.6 KNOWLEDGE ECONOMY INDEX: COUNTRY RANKING

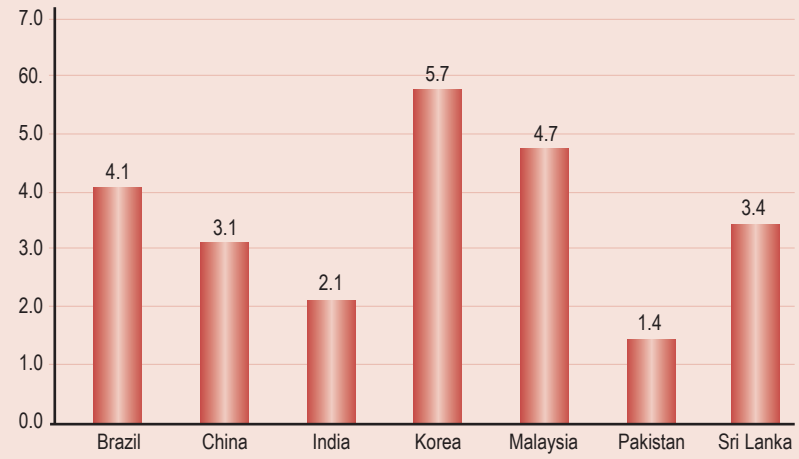
	Brazil	China	India	Korea	Malaysia	Pakistan	Sri Lanka
Economic Incentive Regime	**4.16**	**1.66**	**2.5**	**4.16**	**4.16**	**1.66**	**5**
Property Rights	5	2.5	5	2.5	5	2.5	5
T/NT Barriers	2.5	0	0	5	2.5	0	5
Regulation	5	2.5	2.5	5	5	2.5	5
Information Infrastructure	**6.05**	**3.80**	**2.14**	**7.93**	**6.38**	**2.09**	**2.90**
Telephones	7.44	6.41	3.71	9.44	7.88	3.1	4.73
Computers	5.99	4.34	2.35	8.43	6.96	2.75	3.16
Internet Hosts	4.74	0.67	0.36	5.93	4.3	0.44	0.83
Innovation	**1.56**	**3.13**	**1.44**	**3.15**	**3.35**	**0.49**	**1.11**
Manufacturing Trade	0.12	1.11	0.08	1.95	6.57	0.48	1.73
Researchers	0.28	5.68	1.42	1.03	0.02	0.09	0.03
Technical Papers	4.29	2.62	2.84	6.47	3.46	0.91	1.59
Education	**4.68**	**3.85**	**2.20**	**7.67**	**5.00**	**1.18**	**4.43**
Adult Literacy	7.61	7.39	3.06	9.65	7.95	1.22	8.65
Tertiary Enrolment	1.46	0.56	0.79	7.3	1.12	0.34	0.45
Secondary Enrolment	4.97	3.61	2.77	6.06	5.94	2	4.19
Socioeconomic Performance	**6.67**	**8.21**	**5.92**	**8.31**	**7.87**	**4.82**	**7.09**
GDP Growth	6.4	10	7.8	7.66	8.41	6.78	7.48
Human Development Index	6.94	6.42	4.05	8.96	7.33	2.86	6.7
Knowledge Economy Index	**4.11**	**3.11**	**2.07**	**5.73**	**4.72**	**1.36**	**3.36**

Source: Estimated from data from The World Bank Group, 2002

Pakistan's low ranking in the emerging new knowledge-based world economic order should be a cause for concern.

Pakistan's low ranking in the emerging new knowledge-based world economic order should be a cause for concern. Education is a necessary condition for building a knowledge base. And, as presented in chapter 2, Pakistan's education base is woeful and worsening. This is true not only of higher education, where performance is dismal, but of basic education as well. Urgent remedial measures are required.

CHART 3.3 KNOWLEDGE ECONOMY INDEX (KEI)



Source: Estimated from data from The World Bank Group, 2002

IMPACT OF EXPENDITURE SHIFT

The positive relationship between literacy and development level and the imperatives of the emerging knowledge-based world economy establish the case for investment in education. Empirical evidence is also available to show that greater investment in education is likely to accelerate economic growth. Simulations for Pakistan, using SPDC's 116-equation macro-econometric module of the 263-equation Integrated Social Policy and Macroeconomic (ISPM) Model **(see appendix A.3)**, show that switching public expenditure to education accelerates GDP growth in the medium term. Thus, an absolute increase in resources for the whole economy is not a necessary condition – reallocation of existing resources can also achieve substantial results.

The simulation exercise was carried out for the combined provincial development expenditures, as specified in the four provincial Annual Development Plans during the 1991-2001 period. Provincial development expenditure is allocated to the following categories: economic sectors, education, health, public health, grants to local governments, and 'other' sectors[1]. During the 1991-2001 period, economic sectors received about half of the development allocations, ranging from 40 to 55 per cent. Education received about one-sixth of the allocations, ranging from 11 to 18 per cent over the same period. 'Other' sectors' expenditure varied widely, but has been about 13 per cent in recent years **(see table 3.7)**.

[1]Other Sectors include Forestry, Wildlife, Culture, Tourism, Social Welfare, Manpower, Law and Order, Regional Planning, Rural Development, Statistical Research, Science and Technology, Women's Welfare, Transport and Communications, Environment, etc.

TABLE 3.7 PROVINCIAL DEVELOPMENT EXPENDITURES (*Rs. Million*)

Years	Education	Health	Public Health	Economic Sector	Grants to Local Governments	Other Sectors	Total
1991-92	3,562	2,053	5,172	13,647	1,033	2,515	27,982
	(12.73)	(7.34)	(18.48)	(48.77)	(3.69)	(8.99)	(100.00)
1992-93	3,318	2,354	5,844	12,552	1,224	2,119	27,411
	(12.10)	(8.59)	(21.32)	(45.79)	(4.47)	(7.73)	(100.00)
1993-94	4,369	2,278	4,706	10,364	1,103	1,009	23,830
	(18.33)	(9.56)	(19.75)	(43.49)	(4.63)	(4.24)	(100.00)
1994-95	6,377	3,052	6,030	21,428	1,140	918	38,947
	(16.37)	(7.84)	(15.48)	(55.02)	(2.93)	(2.36)	(100.00)
1995-96	6,743	3,002	7,459	23,637	1,232	967	43,039
	(15.67)	(6.98)	(17.33)	(54.92)	(2.86)	(2.25)	(100.00)
1996-97	6,186	2,202	6,336	12,790	1,330	2,304	31,147
	(19.86)	(7.07)	(20.34)	(41.06)	(4.27)	(7.40)	(100.00)
1997-98	6,033	2,484	7,579	13,304	1,436	2,937	33,774
	(17.86)	(7.36)	(22.44)	(39.39)	(4.25)	(8.70)	(100.00)
1998-99	5,764	2,253	9,457	13,365	1,489	4,422	36,751
	(15.68)	(6.13)	(25.73)	(36.37)	(4.05)	(12.03)	(100.00)
1999-00	6,079	2,027	9,531	13,515	1,546	4,860	37,557
	(16.18)	(5.40)	(25.38)	(35.99)	(4.12)	(12.94)	(100.00)
2000-01	4,748	1,739	7,790	19,248	1,669	5,674	40,868
	(11.62)	(4.25)	(19.06)	(47.10)	(4.08)	(13.88)	(100.00)

Note: Figures in parentheses are percentage shares

Source: Provincial Budgets (various issues)

The simulation carried out a 'laboratory-like' exercise in which all components of the federal and provincial current and development expenditures, except for education and other sectors, were kept constant. A three step exercise was carried out, during which Rs. 1, Rs. 2 and Rs. 3 billion were transferred, respectively, from other sectors to education and their respective impacts on GDP were measured **(see table 2.8)**.

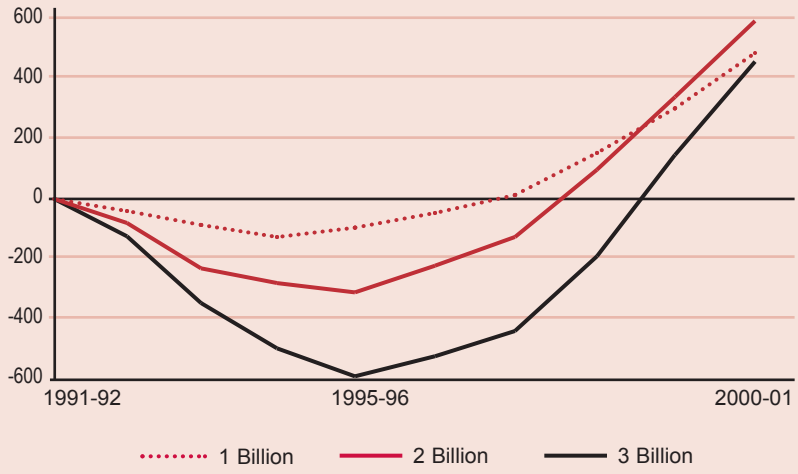
TABLE 3.8 IMPACT OF SHIFT FROM 'OTHER EXPENDITURES' TO EDUCATION

Years	Estimated GDP				Change in GDP		
	Base	At 1 Billion Shift	At 2 Billion Shift	At 3 Billion Shift	At 1 Billion Shift	At 2 Billion Shift	At 3 Billion Shift
1991-92	542,613	542,622	542,629	542,632	10	16	19
1992-93	546,226	546,195	546,152	546,098	-31	-74	-128
1993-94	572,579	572,479	572,357	572,212	-100	-222	-367
1994-95	598,372	598,255	598,088	597,873	-117	-284	-499
1995-96	618,508	618,397	618,202	617,924	-110	-305	-583
1996-97	631,833	631,780	631,608	631,320	-52	-225	-512
1997-98	631,381	636,387	636,236	635,936	6	-145	-445
1998-99	652,609	652,750	652,681	652,418	140	72	-192
1999-00	690,114	690,421	690,458	690,245	307	344	131
2000-01	702,820	703,295	703,434	703,262	475	614	443

Source: SPDC estimates

The simulations show that a transfer of Rs. 1 billion per year from other sectors to education leads to a short-term decline in GDP, but there is acceleration in the medium-term **(see chart 3.4)**. A similar transfer of Rs. 2 billion leads to a sharper short-term decline in GDP, but causes a sharper acceleration in the medium term. However, while a transfer of Rs. 3 billion causes the sharpest short-term decline in GDP, the medium-term acceleration is quite modest.

CHART 3.4 IMPACT OF SHIFT IN EXPENDITURES



Source: SPDC estimates

While the limitations of this kind of exercise are obvious, the results provide a powerful conclusion: *a shift of expenditure to education does enhance economic growth*. The fact that growth slows down at the transfer of Rs. 3 billion implies, logically, that transfers of funds are likely to impact positively up to a point, after which other complementary adjustments, including current expenditure for enhanced salary, non-salary inputs and qualitative improvements, become necessary.

Having further established the case for investment in education, an attempt has been made to estimate the differential impact on the economy of different levels of education, i.e., primary, secondary and tertiary. In this respect, the enrolment rate has been used to determine the impact, given that enrolment rates measure the quantitative additions in the form of years of schooling to the stock of human capital. The results of the analysis, using the Autoregressive Distributed Lag modeling technique over a 28-year time series data set from 1973 to 2001, shows that a 1 per cent growth in development expenditure raises GDP by 0.36 per cent. By contrast, a 1 per cent growth in tertiary enrolment raises GDP by 0.47 per cent. The impact of growth in secondary enrolment is modest and in primary enrolment, insignificant **(see table 3.9)**. Higher education has also been identified as a key contributor to the growth of the export-led economies of East Asia.

A shift of expenditure to education does enhance economic growth.

TABLE 3.9 IMPACT OF DEVELOPMENT AND EDUCATION VARIABLES ON GROWTH

1 per cent change in:	Percentage Impact
Development Expenditure	0.38
Gross Primary Enrolment	-0.43*
Gross Secondary Enrolment	0.06
Gross Tertiary Enrolment	0.47

*Statistically insignificant at 10% level of significance
Source: SPDC estimates

The results do not tend to conform entirely to the prevailing conventional wisdom in development circles. To date, there has been an almost exclusive preoccupation with primary education. The results being presented here do not in any way suggest a shift of focus away from primary education. After all, primary education is the basis upon which any additional tiers of education can be built. Primary education is also the basis of creating an educated, informed and enlightened society and, as such, commands a value beyond mere economic returns. The results do, however, highlight that the objective of generating accelerated economic growth requires investment beyond primary education, i.e., in secondary and higher education.

RETURNS TO EDUCATION

Education is a public good whose manifold benefits accrue not only to the individual attending school, but to society as a whole. These benefits may be categorized in many ways: monetary and non-monetary, private and social, etc. Private monetary benefits are denoted by the impact of a person's schooling on her/his wage and income, usually termed as private returns to education. Social monetary benefits are reflected by the impact of education on socioeconomic development of a country through human capital formation. Private non-monetary benefits may include a more refined sense of aesthetics and culture in outlook and personal mannerisms, a greater awareness of sociopolitical events and issues, and a greater consciousness of the higher values of life. Social non-monetary benefits are marked by relationships between education and various social indicators pertaining to population, health, fertility, democratization, law and order, environment, etc.

Education is a public good whose manifold benefits accrue not only to the individual attending school, but to society as a whole.

Private Returns to Education

Households evaluate schooling decisions in terms of future income benefits. Returns to education influence private choices with respect to acquiring education, and thus determine enrolment and continuation rates. Low returns can be a major factor in depressing the demand for education, while higher rates of return are likely to contribute to a greater demand for education. Persistently very high rates of return present their own problems and are briefly discussed in **box 3.2**.

BOX 3.2 WHAT COULD PERSISTENTLY HIGH RATES OF RETURN MEAN?

Long-term persistence of high rates of return for any level of education can be an indication of constrained supply, caused either by restrictions on entry or barriers to entry. The former may take the form of high entry requirements for certain types of education, e.g., in medical education. The latter may take the form of inability of the poor to access certain types of education, e.g., higher level professional qualifications. The inability of the poor to acquire basic education also excludes them from accessing higher education. In Pakistan, for example, a situation of educational apartheid exists, in which the upper income groups send their wards to English-medium schools and the lower income groups send their wards, if at all, to Urdu-medium schools or to religious *madrassahs*. Given that proficiency in English is necessary for entry into most professional schools and for education abroad, the latter groups stand effectively 'debarred' from access to higher education.

International studies on private returns to education report positive effects of education to individual wages and income. Some studies have indicated that the average rate of return in terms of income to an additional year of schooling is as high as 10 per cent. The highest returns are recorded for low and middle-income countries and private returns to higher education are shown to be increasing. Studies in Pakistan have shown the rate of return to an additional year of schooling to be 7 per cent. Higher earnings are also associated with higher levels of education. A detailed analysis of data for Pakistan confirms the above findings.

A review of the education-specific profile of the labour force shows that more than 50 per cent of the labour force has no formal schooling, 4 per cent has obtained higher secondary, and 5 per cent has obtained tertiary-general education, while only 0.6 per cent of workers possess tertiary-professional education. In the case of wage earners (salaried employees), the proportion of each category of educational attainment is higher than that of the overall labour force. The percentage of wage earners with no schooling drops to 40 per cent, while the percentage of wage earners with higher secondary and tertiary-general education qualifications rises to 6 and 9 per cent, respectively. The percentage of wage earners with tertiary-professional almost doubles to 1.1 per cent **(see table 3.10)**.

TABLE 3.10 LABOUR FORCE COMPOSITION BY EDUCATIONAL ATTAINMENT (%)

Education Level	Overall Labour Force	Wage Earners
No Schooling	53	40.3
Primary	14.4	16.9
Secondary	23	27
Higher Secondary	5	5.9
Tertiary-General	4	8.8
Tertiary-Professional	0.6	1.1

Source: Pakistan Integrated Household Survey (PIHS) (2001-02)

The education-specific profile of the labour force shows that more than 50 per cent of the labour force has no formal schooling.

Computer literacy is a growing phenomenon.

As shown in **table 3.11** the structure of the wage earning population with respect to educational attainment has changed slightly over time. Over the 1991-2002 decade, the share of wage earners with no education, with primary education, and with secondary education, has declined by about 2, 3 and 1 per cent, respectively. The share of those with higher secondary education increased by about 1 per cent, but the major gain of 4.5 per cent has been in the share of tertiary education. Although marginal, there appears to be some improvement in the educational quality of the wage earning proportion of the labour force.

TABLE 3.11 CHANGE IN STRUCTURE OF EDUCATIONAL ATTAINMENT OF WAGE EARNERS (%)

Education Level	1990-91	2001-02	Change
No Schooling	42	40.3	-1.7
Primary	20	16.9	-3.1
Secondary	28	27	-1
Higher Secondary	4.6	5.9	1.3
Tertiary*	5.4	9.9	4.5

*Due to definitional changes, it was not possible to classify tertiary level into general and technical categories for both years.

Source: PIHS (2001-02)

Province-wise analysis of the composition of the labour force and wage earners according to educational attainment reveals wide variations **(see table 3.12)**. Educational attainment of wage earners is relatively better than that of the overall labour force for all levels of education in all the provinces. However, the educational levels of the labour force and of

TABLE 3.12 COMPOSITION OF LABOUR FORCE AND WAGE EARNERS: PROVINCIAL SCENARIO (%)

Education Level	Labour Force				Wage Earners			
	Punjab	Sindh	NWFP	Balochistan	Punjab	Sindh	NWFP	Balochistan
No Schooling	49	52	60	67	41	39	36	52
Primary	16	15	10	8	17	18	15	10
Secondary	25	19	21	18	29	23	30	24
Higher Secondary	5	6	4	3	5	7	7	5
Tertiary-General	3	6	3	3	7	11	9	8
Tertiary-Technical	1	1	1	0	1	2	1	0

Source: PIHS (2001-02)

wage earners are comparatively better in Punjab, relative to other provinces, up to secondary education. The situation is mixed at the post-secondary levels, with Sindh reporting twice as high a share of the labour force with tertiary-general education and of the share of wage earners with tertiary-professional education. This can be attributed to Karachi, which is the hub of commercial and industrial activities in the country. All the other provinces also report a higher share than Punjab with respect to wage earners with tertiary-general education.

Sectoral composition of wage earners and average wages shows a relatively higher percentage of educated wage earners in the services sector, with 20 per cent possessing post-secondary qualifications. The corresponding percentage for the manufacturing sector is 9 per cent, and for the agriculture sector, 2 per cent. The high share of the services sector and the low share of the agriculture sector are understandable. In fact, the share of the services sector is likely to increase significantly if estimated separately for the formal sector component of services. However, the low share of the manufacturing sector is inexplicable, given the high rate of capital intensification of this sector in recent years and the concomitant replacement of unskilled labour with skilled labour **(see table 3.13)**.

TABLE 3.13 SECTORAL COMPOSITION OF WAGE EARNERS

Education Level	Overall	Sectors (%)		
		Agriculture	Manufacture	Services
No Schooling	40	73	42	32
Primary	17	14	20	17
Secondary	27	10	29	30
Higher Secondary	6	1	4	8
Tertiary-General	9	1	4	11
Tertiary-Professional	1	0	1	1

Source: PIHS (2001-02)

Table 3.14 presents a sectoral summary of average wages, categorized according to levels of education, for wage earners. The level of average wages of workers conforms to the notion that education plays an important role in an individual's earning. Overall, an improvement in the level of education of wage earners is associated with a considerable increase in average wages. For example, the average wage of workers with primary education is 23 per cent higher than that of workers with no education. Individuals with secondary education earn 32 per cent more than those with primary education. The wage differential between tertiary-general and higher secondary is 54 per cent. Wages of workers with tertiary-professional education are 42 per cent higher than those of workers with tertiary-general education and five times higher than of workers with no education.

TABLE 3.14 AVERAGE WAGES BY EDUCATION LEVEL AND SECTOR

Education Level	Overall	Average Wages (Rs. Per month)							
		(%) Increment	Agriculture	(%) Increment	Manufacture	(%) Increment	Services	(%) Increment
No Schooling	1738	-	1160	-	1653	-	2089	-
Primary	2135	22.8	1585	36.6	1928	16.6	2321	11.1
Secondary	2809	31.6	1729	9.1	2693	39.7	2930	26.2
Higher Secondary	3829	36.3	2320	34.2	4321	60.5	3823	30.5
Tertiary-General	5893	53.9	4574	97.1	6842	58.3	5804	51.8
Tertiary-Professional	8358	41.8	-	-	10740	57.0	8012	38.0

Source: PIHS (2001-02)

Sectorally, the comparative wage differential between different levels of education provides interesting insights. In agriculture, the average wage of workers with primary education is 37 per cent higher than that of workers with no education. However, individuals with secondary education earn only 9 per cent more than those with primary education. Thus, there is not much of a premium for secondary education. Those with higher secondary education, though, command 34 per cent higher wages than workers with lower secondary education. Earnings for those with tertiary-general education are almost twice as high as for those with higher secondary qualifications.

In manufacturing, the average wage of workers with primary education is 17 per cent higher than workers with no education. Individuals with secondary education earn 40 per cent more than those with primary education. The implication is that the premium for primary education is significantly lower in manufacturing than in agriculture, but the reverse is true with respect to secondary education. The wage differential between higher secondary, tertiary-general and tertiary-professional is progressively higher by about 60 per cent at every stage. Wages of workers with tertiary-professional education are 6.5 times higher than for workers with no education.

In services, wage differentials between different levels of education are more modest, perhaps on account of the fact that the data for the sector includes a large proportion of informal workers. Thus, the average wage of workers with primary education is only 11 per cent higher than that of workers with no education. It appears that the formal services sector does not view those with primary education to be in possession of significantly superior skills compared to those with no education. At the same time, the informal services sector views primary education to be unnecessary to its needs. The average wage increments at subsequently higher levels of education are also relatively moderate, reaching a maximum of 52 per cent for those with tertiary-general education over those with higher secondary qualifications. There is a four-fold wage differential between those with tertiary-professional education and those without education.

Determinants to Private Returns to Education

The level of education is the most important, but not the only variable determining wages or private returns to education. Some of the other variables comprise quality of education, experience, gender, sector, and province of work. The results of the regression analysis in estimating the contribution of each of the factors are summarized in **table 3.15**. The methodology and detailed regression results are provided in **box 3.3**. The results confirm the positive role of education in determining payoffs in the labour market.

TABLE 3.15 ESTIMATES OF PRIVATE ANNUAL RATE OF RETURNS TO EDUCATION (%)

Province	Primary	Secondary	Higher Secondary	Tertiary General	Tertiary Professional
Overall Average	**3**	**4**	**16**	**11**	**13**
Inter-Provincial					
Punjab	3	5	18	13	10
Sindh	2	3	15	9	13
NWFP	2	1	17	13	13
Balochistan	3	4	9	9	18
Inter-Sectoral					
Agriculture	2	3	7	7	7
Manufacturing	1	4	14	9	13
Services	2	4	15	10	12
Inter-Regional					
Urban	2	4	18	11	13
Rural	3	4	14	8	5

Source: PIHS (2001-02)

There is a four-fold wage differential between those with tertiary-professional education and those without education.

BOX 3.3 A MODEL OF PRIVATE RETURNS TO EDUCATION

Mincer's (1974) human capital earnings function is estimated to quantify the private rate of returns to education, duly extended to control for a number of other variables that relate to location of living, quality of education and labour market status. A semi logarithmic framework is applied of the following form:

$$lnW_i = f(S_i, X_i, Z_i) + \mu_i \ldots \ldots \ldots (1)$$

where,

lnW_i is the log of the labour market earnings, defined as monthly gross wages of workers between the age of 15 and 65 years.

S_i stands for completed years of schooling.

X_i is a matrix of personal characteristics other than schooling, namely, labour market experience, experience squared, gender and quality of education.

Z_i represents a matrix of provincial dummies and other labour market characteristics, e.g., sectors.

μ_i is a random disturbance term that captures unobserved characteristics.

Labour market experience is constructed as a function of age and schooling year (age 5 being the entrance age to primary education). Experience is defined as the age less the entrance age less the years of education completed. However, minimum age is taken as 15 to exclude child labour.

Two proxies are used to account for quality of education. It is hypothesized, although yet to be proved, that private schools provide better education than public institutions. Further, it is also believed that the labour market is more responsive, in term of wages, to workers who graduate from institutions where the medium of instruction is English. Therefore, dummy variables to reflect private schooling and English as a medium of instruction are used in the return to education regressions.

A spline form of years of schooling is preferred to quantify returns of schooling to one additional level. Therefore, S_i is replaced (equation 2) with the dummy variables for various levels of education, i.e., *p* (primary, 1-5 years), *s* (secondary, 6-10 years), *hs* (higher secondary, 11-12 years), *tg* (tertiary general, 13-16 years of schooling with general subjects of Arts and Science) and *tt* (tertiary technical, 13-18 years of schooling with technical education). Tertiary technical education refers to degrees in engineering, medicine, agriculture, law, M.Phil and Ph.D. No schooling is treated as a reference category.

$$\ln W_i = \beta_o + \beta_p S_p + \beta_s S_s + \beta_{hs} S_{hs} + \beta_{tg} S_{tg} + \beta_{tt} S_{tt} + X_i\beta_x + Z_i\beta_z + \mu_i \ldots \ldots \ldots (2)$$

The sample is purged of self-employed persons and pensioners. The analysis is, therefore, confined to paid employees or wage earners aged 15 to 65 years with positive income. The estimates for the year 2001-02 appear below.

REGRESSION RESULT

Variables	Coefficient	t-statistic	Prob.
Primary Level	0.137	6.99	0.00
Secondary Level	0.336	19.96	0.00
Higher Secondary Level	0.661	25.38	0.00
Tertiary-General	1.077	43.89	0.00
Tertiary-Technical	1.157	19.27	0.00
Experience	0.066	32.02	0.00
Experience Squared	-0.001	-24.00	0.00
Medium of Instruction - English	0.338	7.33	0.00
Type of School - Private	0.181	3.56	0.00
Male Employee	1.316	45.04	0.00
Working in Manufacturing Sector	0.218	7.48	0.00
Working in Services Sector	0.402	18.60	0.00
Resident - Urban	0.221	15.70	0.00
Resident - Punjab	-0.436	-24.84	0.00
Resident - Sindh	-0.221	-14.06	0.00
Resident - NWFP	-0.464	-20.61	0.00
(Constant)	5.368	142.79	0.00
R-squared	0.52	F-statistic	869
Adjusted R-squared	0.52	D-W Statistics	1.58

Notes: Prob. reflects the level of significance
Data are obtained from PIHS (2001-02)
Total number of observations is 12638

The highest incremental return is associated with higher secondary education.

Morning assembly and prayers.

On average, private returns to education are estimated at 3 and 4 per cent for primary and secondary levels, respectively, and at 16, 11 and 13 per cent for higher secondary, tertiary-general and tertiary-professional levels, respectively. The highest incremental return is associated with higher secondary education. These findings are plausible given the educational attainment of wage earners.

Considerable variations exist in the returns to education among the provinces. The private annual rates of return to primary education are more or less the same at 2-3 per cent for all provinces. The return on secondary education is the highest in Punjab at 5 per cent and the lowest in NWFP at 1 per cent. Returns to higher secondary education range between 15 and 18 per cent in Punjab, Sindh and NWFP, but are relatively low at 9 per cent in Balochistan. Returns to tertiary-general education are estimated at 13 per cent for Punjab and NWFP, and at 9 percent for Sindh and Balochistan. Returns to tertiary-professional education are the lowest at 10 per cent in Punjab with the highest at 18 per cent in Balochistan. The pattern of returns reflects the level of economic and education development of the province and the availability of particular skills. Punjab and NWFP are clearly relatively more developed.

It appears that in all the provinces except Balochistan, returns to higher secondary education are significantly higher than returns to secondary education. The relatively lower returns to tertiary-general education in Sindh and Balochistan may reflect the high rate of graduate unemployment in the two provinces. With respect to tertiary-professional education, the relatively low return in Punjab and high return in Balochistan may reflect the relatively larger supply of professionals in the former and scarcity in the latter.

Sectorally, returns to primary and secondary education are more or less the same across sectors. The sectoral differential is highest with respect to higher secondary education, where returns in manufacturing and services are about twice as high as in agriculture. The corresponding differential is lower with respect to tertiary-general.

Furthermore, while returns to primary and secondary education are more or less the same in urban and rural areas, returns to post-secondary levels of education are uniformly higher in urban areas relative to rural areas and the differential increases with the level of education.

The quality of education is also presumed to impact rates of return. Ideally, the quality of education should be represented through some measure of achievement or ability score of individual workers. However, since the requisite data is not readily available, two variables have been selected as proxies for quality of education: English, as a medium of instruction, and private schooling. The results, presented in **table 3.16**, show that returns for wage earners with education up to higher secondary level are not significantly affected by the medium of instruction or by private schooling. However, at the tertiary levels, there is a 16 to 22 per cent increase in returns for those who have obtained their education in an English medium and/or in a private school.

TABLE 3.16 EFFECT OF EDUCATION QUALITY ON RETURNS TO EDUCATION (%)

	Quality Proxy	
	English as Medium of Instruction	Private Schooling
Primary	*	*
Secondary	*	*
Higher Secondary	*	45
Tertiary-General	20	16
Tertiary-Technical	22	19

Note: Effects on returns are estimated using interactive dummies (quality multiplied by level of education)
*Regression coefficient is statistically insignificant
Source: PIHS (2001-02)

Social Returns to Education

The non-monetary social benefits of education are characterized by relationships between education and various social indicators pertaining to population, fertility, health, democratization, law and order, environment, etc. Data constraints do not permit a comprehensive analysis of the social returns of education. Nevertheless, an attempt can be made to illustrate some of them. These include the relationship of education to fertility, child and maternal health, infant mortality, and early age marriage and motherhood. Most of these variables demonstrate the social benefits of women's education.

The position of women can be improved through education.

Impact on Fertility

High population growth has several adverse macro and micro level impacts on development indicators. One direct effect of high fertility rates is that, in the short run, it raises the dependency ratio. At the micro level, a high dependency ratio means that there is greater pressure on the earning members to cater to the needs of non-earning members of the household. This phenomenon inhibits efforts to reduce poverty. At the macro level, high fertility rates place increasing pressure on scarce state resources to provide education, health, housing, and employment-generating infrastructure equitably to a larger population.

Education has been recognized as a crucial factor influencing women's childbearing patterns. There is a two-fold impact of education on fertility. At the micro level, a number of studies have shown that education, even if only till the primary level, has a significant influence on the number of children a couple wishes to have. Where one or both of the partners have some degree of education, the number of children is invariably smaller. Although the husband's education status has a positive impact in most cases, given that the decision on family size is a joint one, the effect of the wife being educated is more significant.

At the macro level, the aggregate level of education also has an effect on individual fertility behaviour, above and beyond that of the wife's own and, perhaps, her husband's education. Uneducated women, living in societies where the average educational level is high, have been seen to have a lower fertility rate than that of uneducated women living in environments where a larger proportion of the population is uneducated. However, the reverse can also be true, in which case the impact of the education of individual women and, possibly, their husbands, is diluted.

There are several plausible reasons why women with some education display lower fertility rate patterns than uneducated women. The following summarizes very briefly, and without professing to produce an exhaustive list of mechanisms, why an individual woman's education is presumed to influence fertility desires: (i) high opportunity costs of childbearing could be involved in some types of work that may be offered

Where one or both the partners have some degree of education, the number of children is invariably smaller.

to the better-educated women; (ii) educated women are more likely to send their children to school, are more conscious of the quality of education, and are prepared to bear the cost of schooling; (iii) education induces the economic empowerment of women, which is likely to lead to a reduced need for children as old age security; and (iv) women's education is associated with lower infant and child mortality, reducing the desire to bear children for replacement.

One reason why education may operate through these channels is that schooling enables a woman to read and write, thus increasing her knowledge about the outside world and providing her with certain skills that enhance her productivity. In addition, a woman's position relative to a man's may also be improved by education. It is important to note, however, that the decision on family size is a joint one, even though in traditional societies the husband commands the major decision-making authority. Thus, the woman's 'decision-making autonomy' is likely to depend to a large extent on community norms and institutional structures. This factor is borne out by the aggregate level analysis of fertility behaviour.

An effort has been made to quantify the effect of the general level of education on fertility using district level data. The variables in the fertility model include the education level of married women in the district and school life expectancy of women and men in the district. School Life Expectancy (SLE) is defined as the number of years of schooling that a child can expect to receive in the future, assuming that the probability of his or her being enroled in school at any particular future age is equal to the current enrolment ratio for that age **(see box 3.4)**. SLE is used as a proxy for the education level of the district. Other variables are the district development index, female labour force participation rate, infant mortality rate, district health status, and proportion of the urban population. The

BOX 3.4 HOW IS SCHOOL LIFE EXPECTANCY COMPUTED?

School Life Expectancy (SLE) is defined as 'the number of years of schooling which a child can expect to receive in the future, assuming that the probability of his or her being enroled in school at any particular future age is equal to the current enrolment ratio for that age'. Taking the reference age range to be 5-24, SLE for ith district may be expressed as:

$$SLE_i = \sum_{i=5}^{24} E_{ij}$$

where E_{ij} is the enrolment rate at age j in district i. Thus, SLE expresses in a compact form the enrolment position for the district over the 19-year schooling cycle. Student population in different age cohorts is taken from the Population Census, 1998.

methodology and regression results are illustrated in **box 3.5.** The inverse relationship between fertility rate and the educational attainment of married women is evident from **chart 3.5:** the fertility rate declines as education level rises. An important observation emerges: although the attainment of primary education reduces fertility, a more pronounced impact is visible at secondary and tertiary levels. This is partly also because of the effect of delayed marriage.

Aggregate level analysis of the determinants of the fertility rate in Pakistan has been carried out at the district level using data from the Population Census of 1998. The analysis at hand uses two specifications to quantify the impact of women's schooling on the aggregate fertility rate.

BOX 3.5 MACRO FERTILITY RESPONSE MODEL

Economic theories of fertility assume that parents have the number of children they do because they desire approximately that number, given the costs of birth control. This demand for children is affected, at a household level, by many socioeconomic factors such as the level of human capital of family members, family income and assets, and the experience of child mortality. By extension, fertility rates at a macro level can be modelled as:

$$F = \alpha + \beta_i[SLE] + \gamma_i[MWE] + \delta_i[DC] + \kappa(IMR) + \lambda_i[PD] + \mu \ldots \ldots \ldots (1)$$

where,

F is the dependent variable and denotes the fertility rate, defined here as the average number of children per married women in the 15-45 age group in a particular district.

SLE, or School Life Expectancy, measures the aggregate-level effects of education on fertility. It is a flow variable, depicting the current enrolment situation in a district, and is preferred over adult literacy rate, which is a stock variable. The *SLEs* described in detail in **Box 2.4**, are computed separately for male and female populations.

MWE is a vector of various levels of educational attainments of married women.

DC denotes district characteristics, which is a matrix composed of three column vectors. (i) District Development Index (*DDI*) as a proxy of the level of income and development of a district. (ii) health status of the district, measured through first level health institutions (Rural Health Centre, Basic Health Unit, Sub-Health Centre, Mother Child Health Centre, Dispensaries, Reproductive Health Units, and Mobile Health and Family Planning Units) per 1000 population. It is postulated that these facilities would cause a decline in the fertility rate due to an increase in health and family planning consciousness. And (iii) female labour force participation rate, which is also hypothesized to have an inverse relationship with the fertility rate.

IMR is the Infant Mortality Rate, measured by the number of children that died before turning one year old out of 1000 children ever born alive. Micro-level studies on fertility behaviour indicate a direct relationship between fertility and infant mortality, with the latter inducing child bearing for replacement.

PD is a vector of provincial dummy variables to capture the differences and dissimilarities in provinces regarding non-measurable environmental and locational aspects.

VARIABLES USED IN MACRO FERTILITY RESPONSE MODEL

Variables	National	Punjab	Sindh	NWFP	Balochistan
Fertility Rate	4.49	4.66	3.94	4.83	4.32
School Life Expectancy Male (Years)	6.7	7.87	5.96	7.35	5.02
School Life Expectancy Female (Years)	4.02	5.9	3.62	3.33	2.46
Literate Married Women (%)	14	23	13	10	6
Married Women Below Secondary (%)	9	16	8	6	4
Married Women Secondary or Higher (%)	4	6	5	4	2
Index of Economic Development (%)	32.67	38.05	38.69	26.84	27.32
Female Labour Force Participation (%)	2	2	3	1	2
District Health Status (Institution per '000' population)	0.12	0.08	0.06	0.12	0.24
Infant Mortality Rate*	140	126	185	90	178
Number of Districts	100	34	16	24	26

*Generally in demographic surveys, IMR is computed on the basis of averages over three years. In the Population Census, data is only available for one year. Therefore, these estimates seem overestimated and are thus indicative.
Source: SPDC estimates based on Population and Housing Census (1998)

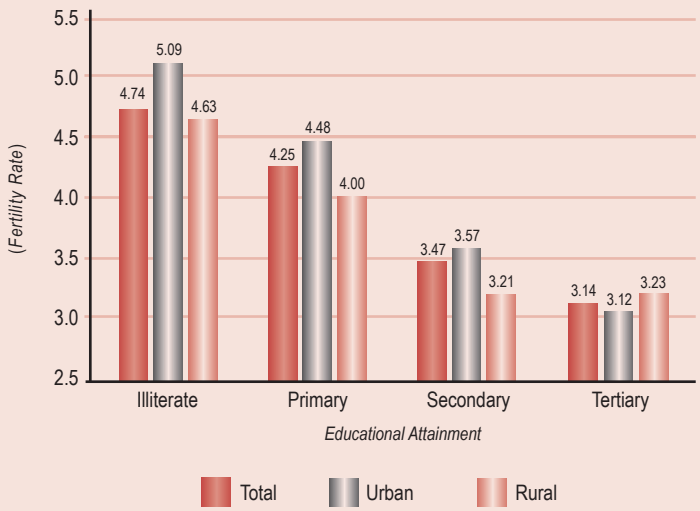
REGRESSION RESULT DEPENDENT VARIABLE: TOTAL FERTILITY RATE

	SPECIFICATION - 1			SPECIFICATION - 2		
Variables	Coefficient	t-statistic	Prob.	Coefficient	t-statistic	Prob.
District Development Index	-0.059	-1.96	0.05	-0.062	-2.08	0.04
District Development Index ^2	0.002	2.24	0.03	0.002	2.34	0.02
District Development Index ^3	0	-1.89	0.06	0	-1.95	0.05
School Life Expectancy - Female	-0.084	-1.35	0.18	-0.093	-1.49	0.14
School Life Expectancy - Male	0.164	3.17	0	0.168	3.27	0
Literate Married Women	-2.199	-2.61	0.01	-	-	-
Married Women (Below Secondary)	-	-	-	-0.985	-1.01	0.32
Married Women (Secondary or Higher)	-	-	-	-4.206	-4.67	0
Female Labour Force Participation	-7.37	-1.55	0.12	-5.841	-1.31	0.19
Infant Mortality Rate	0.001	1.93	0.06	0.001	2.06	0.04
District Health Status	-0.865	-1.29	0.2	-0.996	-1.51	0.14
Proportion of Urban Population	-0.009	-1.79	0.08	-0.007	-1.47	0.14
Dummy Variable - Sindh	-0.908	-5.91	0	-0.895	-5.81	0
Dummy Variable - NWFP	-0.144	-0.87	0.39	-0.03	-0.17	0.86
Dummy Variable - Balochistan	-0.375	-1.98	0.05	-0.302	-1.58	0.12
(Constant)	5.102	11.05	0	5	11.1	0

	Specification - 1	Specification - 2		Specification - 1	Specification - 2
R-squared	0.52	0.53	F-statistic	7.05	6.82
Adjusted R-squared	0.45	0.45	D-W Statistics	1.97	2.02

Source: SPDC estimates based on Population and Housing Census (1998)

CHART 3.5 FERTILITY BY EDUCATIONAL ATTAINMENT OF MARRIED WOMEN



Sources: SPDC estimates based on Population and Housing Census (1998)

The first specification uses the proportion of (formally schooled) literate, married women, irrespective of the level of education. The second specification incorporates the level of education: the proportion of married women in a district with education below the secondary level and the proportion of married women with post-secondary education. Respective estimates of the regression analysis are presented in box 3.5.

The results indicate a significant impact of women's education on fertility. A 1 per cent increase in the proportion of literate married women leads to a 2.2 per cent decline in the fertility rate. The impact of post-secondary education is even greater. A 1 per cent increase in the proportion of married women with post-secondary qualifications is associated with 4.2 per cent decline in the fertility rate.

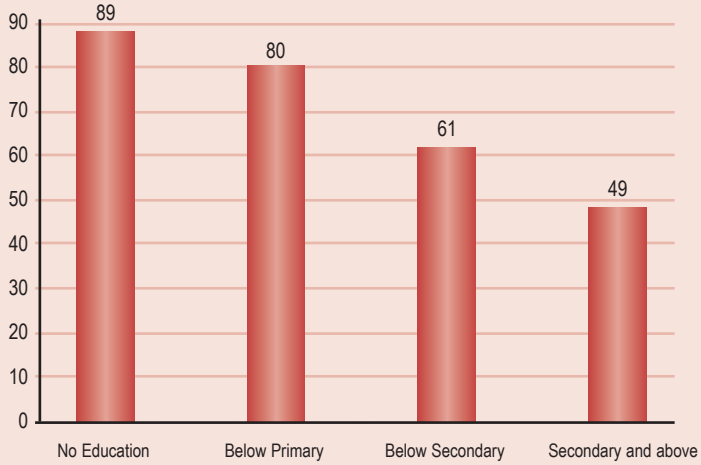
However, the SLE variable provides interesting results, being insignificant for women but significant for men in terms of influencing the fertility rate. This is logical as Pakistan is a male-dominated society, where men establish the social norms. Thus, while educated women do appear to command some decision-making influence within their families, the education of men in general is a decisive factor in influencing family size standards in the community. The district development level and the infant mortality rate also appear to be significant variables, while the female labour force participation rate, district health status and proportion of urban population do not appear to have a significant influence in determining the fertility rate.

While educated women do appear to command some decision-making influence within their families, the education of men in general is a decisive factor in influencing family size standards in the community.

Impact on Health

The education of women has several other beneficial effects. As can be seen in **chart 3.6,** infant mortality rates decline to almost half when the mother has post-secondary qualifications. Similarly, higher levels of mothers' education are associated with lower levels of morbidity in the

CHART 3.6 INFANT MORTALITY RATES BY MOTHER'S EDUCATION LEVEL



Source: PIHS (2001-02)

population, especially in rural areas, as shown in **table 3.17** and **chart 3.7**. The impact is higher in rural areas compared to urban areas. The lower effect in urban areas may be due to crowded and unhygienic living conditions in *katchi abadis* and other low-income areas, where the majority of the urban population resides.

TABLE 3.17 INCIDENCE* OF DIARRHOEA BY MOTHER'S EDUCATION (%)

Education Level	Urban	Rural	Total
No Schooling	13	13	13
Primary	10	12	11
Secondary	12	10	11
Higher Secondary	9	6	9

*Proportion of children aged 5 or younger suffering from Diarrhoea in the past 30 days of the survey time.

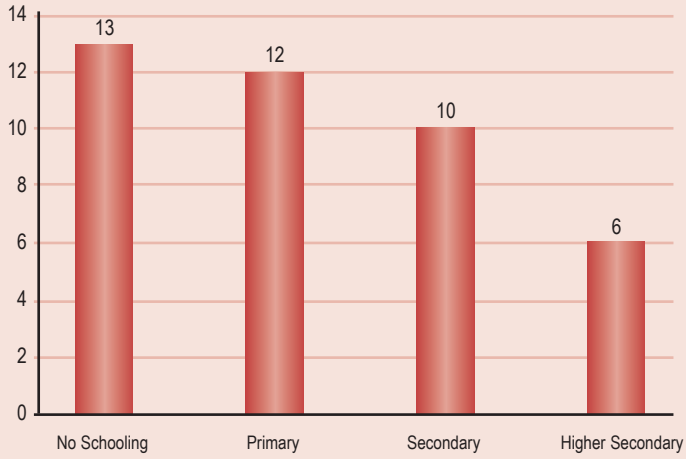
Source: PIHS (2001-02)

The immunization of children is an important factor contributing to survival and reducing morbidity among infants and children. Various studies have shown that the schooling of mothers is strongly associated with an increase in immunization. Research carried out by SPDC corroborates this evidence, as presented in **table 3.18**. Clearly, the percentage of children ever immunized or fully immunized increases with the level of a mother's education. For instance, mothers with higher education fully immunize their children, compared to 65 per cent of uneducated mothers.

Improved reproductive health care behaviour leads not only to better health of mothers, but also to improved child survival. The importance of education in this regard is also evident. As shown in **table 3.19**, the level of maternal education influences the number of pre- and post-natal check-ups, tetanus toxide immunization, and place of delivery.

The percentage of children ever immunized or fully immunized increases with the level of a mother's education.

CHART 3.7 INCIDENCE OF DIARRHOEA IN RURAL AREAS BY MOTHER'S EDUCATION



Source: PIHS (2001-02)

Only 24 per cent of mothers with no education have pre-natal medical check-ups, while this ratio is 57 per cent for mothers with primary education and rises to 92 per cent for women with higher secondary education. The distribution is similar in the case of tetanus immunization.

TABLE 3.18 IMMUNIZATION OF CHILDREN UNDER 5 AND MOTHER'S EDUCATION (%)

Education Level	Ever Immunized[1]	Fully Immunized[1]	Fully Immunized[2]
No Schooling	18	10	65
Primary	36	16	88
Secondary	41	21	91
Higher Secondary	41	26	98

[1]Holding cards
[2]Holding cards or recall
Source: PIHS (2001-02)

Women with higher education status report having post-natal check-ups and deliveries in hospitals/clinics six to seven times more often than do uneducated women.

Another benefit associated with the education of females is delayed marriage and childbearing. Adolescent marriage and motherhood have health, social and economic implications. Early marriage prevents girls from obtaining further education, as they are less likely to be allowed to go to school once they get married. Adolescent marriage and motherhood are also associated with higher fertility rates and health related problems such as higher maternal and infant mortality and morbidity.

The education of females has a strong effect on the age at which they are married, particularly in developing countries. There is a strong association between the level of education of a woman and her age at

Another benefit associated with the education of females is delayed marriage and childbearing.

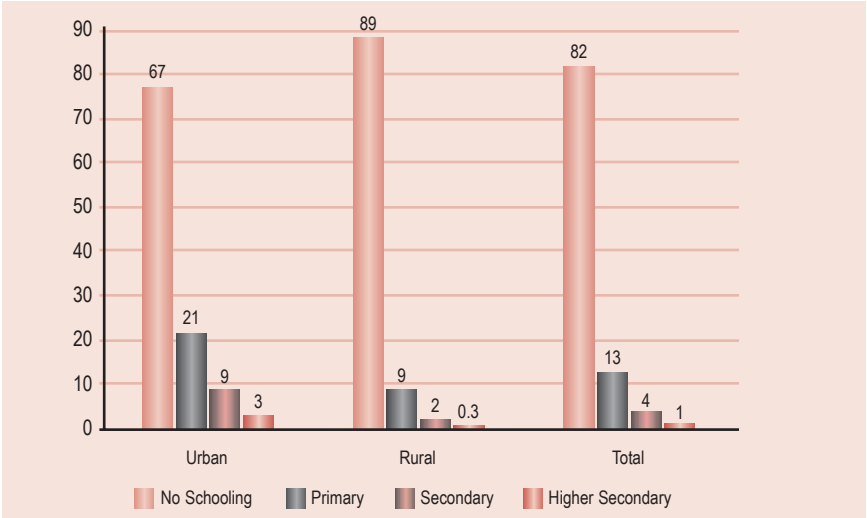
TABLE 3.19 REPRODUCTIVE HEALTH CARE BEHAVIOUR AND MOTHER'S EDUCATION (%)

Education Level	Pre-natal Check-up	Post-natal Check-up	Immunization (TT)	Delivery at Hospital/Clinic
No Schooling	24	6	29	13
Primary	57	12	56	28
Secondary	73	19	75	52
Higher Secondary	92	41	90	74

Source: PIHS (2001-02)

association between the level of education of a woman and her age at marriage. Women who complete at least primary education tend to be married later than those who have had no education. **Chart 3.8** compares the pattern of early marriage and the level of education of women in Pakistan. Overall, 82 per cent of the girls who were married at age 18 or below had no education. The proportion of girls being married at an early

CHART 3.8 EDUCATION LEVEL OF WOMEN WHO MARRIED AT 18 YEARS OR BELOW (%)



Source: PIHS (2001-02)

age declines as the level of education rises. Similarly, adolescent childbearing declines with increasing education levels. Among women aged 18 years or younger giving birth to their first child, 79 per cent had no education, 19 per cent had primary or secondary education, and only 1.5 per cent had higher secondary education.

FACTORS INHIBITING EDUCATION

4

"It would seem that the sociopolitical milieu does not accord sufficient weight to education."

FACTORS INHIBITING EDUCATION

The fact that education has failed to find its place in the matrix of policy priorities and targets have remained unrealized is the result of certain binding constraints, rooted in a number of factors at the societal and state levels. There have certainly been consistent efforts on the part of governments to expand education. These efforts, however, appear to be stymied by structural and policy factors such as macroeconomic and fiscal stabilization policies, poverty, rural land inequality, weak implementation of education policies, and above all, the sociopolitical environment. The rise of income inequality and poverty has served to restrict access to education for the poor; unequal rural land ownership has contributed to unequal access to schooling; macro-economic stabilization policy has tended to encroach on provincial finances and compromise resource availability for education; and education policies have suffered from a lack of success on the implementation front. Taken together, it would seem that the sociopolitical milieu does not accord sufficient weight to education.

STABILIZING THE ECONOMY, DESTABILIZING EDUCATION

Undoubtedly, macroeconomic stabilization has been contributing to poverty. This has been shown in a number of SPDC studies over the last three years. This fact has now begun to be acknowledged by donors as well as official circles. Evidence is available that the policy has also contributed to the problems of education by economizing on human and social development.

The unbridled pursuit of stabilization policies has claimed two victims: the poor, as outlined in **box 4.1**, and the provinces. Consequently, financing and provision of education, health and other social sector services has also been directly affected, given that these expenditures fall in the provincial domain. Simply put, the burden of financing the federal fiscal deficit has been steadily shifted to the provinces. The mechanism for this process has been the increasing 'provincialization' of the overall federal fiscal deficit, which has increased the provincial share of the containment of fiscal deficit from about 20 per cent in the early 1990s to over 50 per cent in Fiscal Year (FY) 2003.

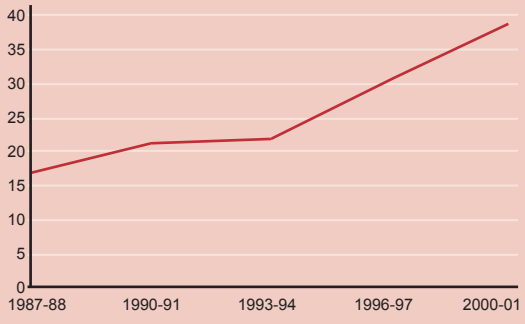
The overall, fiscal deficit is the difference between (i) total federal expenditure and total federal revenues, and (ii) total combined provincial expenditures and total combined provincial revenues. There are several revenue and expenditure entries between the federal and provincial governments that cancel each other out and a net deficit figure emerges. This is shown in **table 4.1**, which presents a comprehensive fiscal deficit balance sheet and details of the provincial components. It shows that if the provincial component is removed, the fiscal deficit increases by the

BOX 4.1 STABILIZATION AND POVERTY

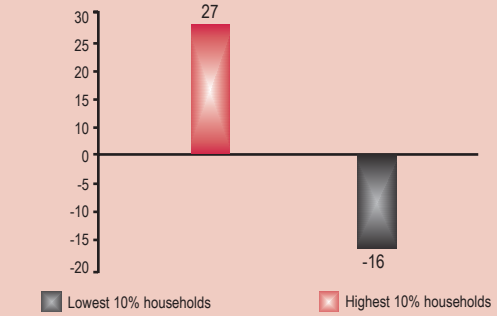
The macroeconomic policy package implemented since 1988, and particularly since 1999, can be called a stabilization package. This is on account of the preponderant weight accorded to stabilization objectives at the cost of growth objectives. At one level, stabilization and growth are not mutually exclusive. After all, growth cannot be sustained if stabilization aspects of the economy are consistently sacrificed. However, the nature of the policy response in terms of the implementation of stabilization objectives appears to have rendered them more or less mutually exclusive. The mechanism of this policy has been a contractionary fiscal policy, centered largely on resource mobilization through indirect taxes and expenditure reduction through cuts in development expenditure.

The results are inevitable. The policy has been counter-productive and has dampened growth, investment, and employment, curtailed purchasing power, induced recessionary conditions, and increased poverty. The policy has placed a disproportionately large share of the burden of adjustment on the shoulders of the poor, leading to increased inequality and poverty. Between 1988 and 1999, while the purchasing power of the richest 10 per cent of the population increased by 27 per cent, the purchasing power of the poorest 10 per cent declined by 16 per cent. Not surprisingly, the percentage of the population below the poverty line more than doubled from 17 per cent in 1988 to 38 per cent in 2001. Between 1999 and 2001, 350,000 people were rendered unemployed and 7 million people were pushed below the poverty line. This represented the fastest growth in poverty in Pakistan's history. The policies that have led to this state of affairs continue to be in place even today.

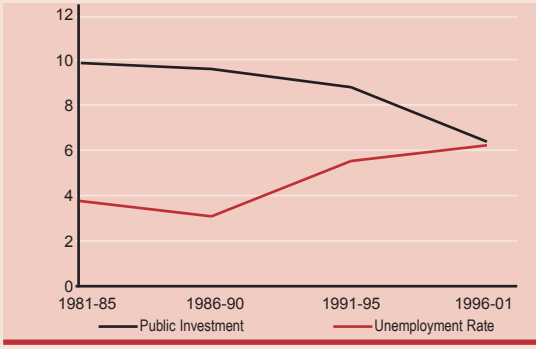
POPULATION BELOW THE POVERTY LINE (%)



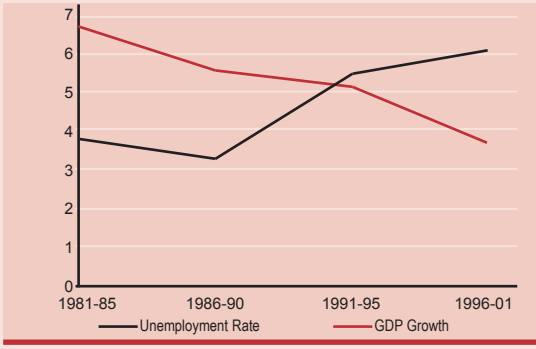
GROWTH IN REAL INCOME, 1988-99 (%)

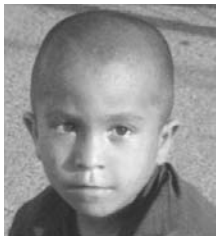


TRENDS IN PUBLIC INVESTMENT AND UNEMPLOYMENT



TRENDS IN UNEMPLOYMENT AND GROWTH





amount of that component. The provincial contribution to fiscal deficit containment comes from four major heads:

- Interest payments by provinces to the federal government;
- Recoveries of loans from provinces by the federal government;
- Self-financing of Public Sector Development Programme (PSDP) by the provincial governments; and
- Surplus in the provincial budgets.

Table 4.1 shows that the fiscal deficit was Rs. 65.3 billion in FY1991 and had increased to Rs. 181.3 billion in FY2003, which the federal government has consistently attempted to contain. Over the same period, the provincial share of the containment of the fiscal deficit has increased from Rs. 15 billion to Rs. 92 billion. Thus, while the fiscal deficit has grown at an annual average rate of 8.9 per cent, the provincial share has grown at 16.3 per cent, increasing from 23 per cent in FY1991 to 51 per cent in FY2003; it is projected at 55 per cent in FY2004. This means that without the provincial contribution, the fiscal deficit would have been 23 per cent higher in FY1991 and 51 per cent higher in FY2003 **(see chart 4.1)**.

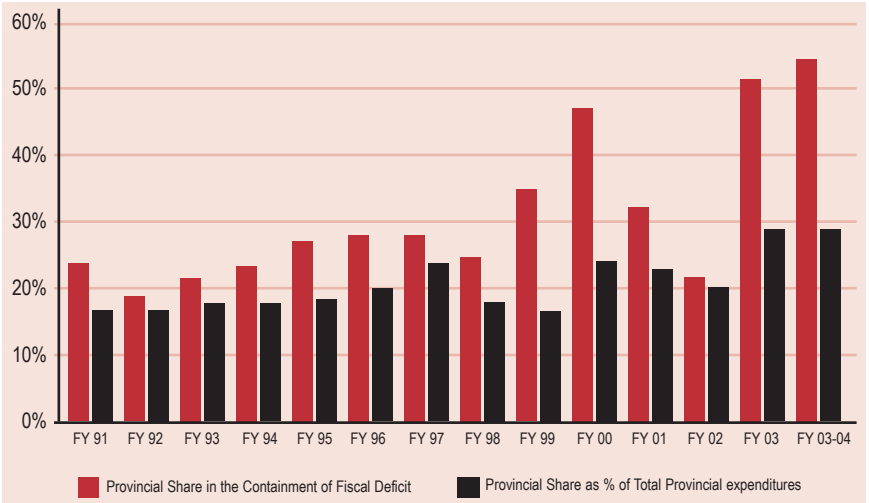
TABLE 4.1 WHO IS BEARING THE BURDEN OF STABILIZATION?

	Provincial Share of the Containment of Fiscal Deficit					
	Total	Interest Payments from Provinces	Recovery of Loans from Provinces	Self-Financing of PSDP by Provinces	Provincial Surplus	Overall Fiscal Deficit
	Rupees (billions)					
1990-91	15.0	13.5	1.5	0.0	0.0	65.3
1991-92	17.6	15.9	1.7	0.0	0.0	93.7
1992-93	20.1	18.0	2.1	0.0	0.0	95.6
1993-94	22.5	20.1	2.4	0.0	0.0	99.1
1994-95	29.7	21.9	2.8	5.0	0.0	109.6
1995-96	36.8	22.7	3.4	10.7	0.0	132.4
1996-97	43.2	24.2	5.0	14.0	0.0	143.3
1997-98	35.7	26.1	5.8	3.9	0.0	141.0
1998-99	35.7	25.5	6.4	3.9	0.0	103.4
1999-00	57.8	28.3	8.0	6.8	14.8	122.0
2000-01	59.3	29.4	9.0	20.5	0.4	185.6
2001-02	56.6	29.5	10.1	15.4	1.6	257.1
2002-03	92.0	28.0	18.8	28.7	16.6	181.3
2003-04	96.7	26.9	11.8	30.0	28.0	175.3
	As a Percentage of Overall Fiscal Deficit					
1990-91	23.0	20.7	2.3	0.0	0.0	
1991-92	18.8	17.0	1.8	0.0	0.0	
1992-93	21.0	18.8	2.2	0.0	0.0	
1993-94	22.7	20.3	2.4	0.0	0.0	
1994-95	27.1	20.0	2.6	4.6	0.0	
1995-96	27.8	17.1	2.6	8.1	0.0	
1996-97	30.1	16.9	3.5	9.8	0.0	
1997-98	25.3	18.5	4.1	2.8	0.0	
1998-99	34.5	24.7	6.2	3.8	0.0	
1999-00	47.4	23.2	6.6	5.6	12.1	
2000-01	32.0	15.8	4.8	11.0	0.2	
2001-02	22.0	11.5	3.9	6.0	0.6	
2002-03	50.7	15.4	10.4	15.8	9.2	
2003-04	55.2	15.3	6.7	17.1	16.0	

Note: Figures for the years 1990-91 to 2002-03 are revised estimates, and for the year 2003-04, budget estimates.

Source: Federal Budget in Breif, and Explanatory Memorandum on Federal Receipts(various issues)

CHART 4.1 BURDEN OF STABILIZATION ON PROVINCES



Source: Federal Budget in Brief, Explanatory Memorandum Federal Receipts, and Provincial Annual Budget Statements (various issues)

Among the provincial components, maximum growth has occurred in the recoveries of loans segment, with its share in the fiscal deficit rising from 2 per cent in FY1991 to 10 per cent in FY2003. Self-financing of the PSDP commenced in FY1995 and its share in the fiscal deficit has risen from less than 5 per cent to about 16 per cent in FY2003. The provincial budget surplus commenced in FY2000 and constituted 9 per cent of the fiscal deficit in FY2003. For FY2004, its share of the provincial budget surplus is projected to nearly double, reaching 16 per cent.

Poverty is a factor in low enrolments.

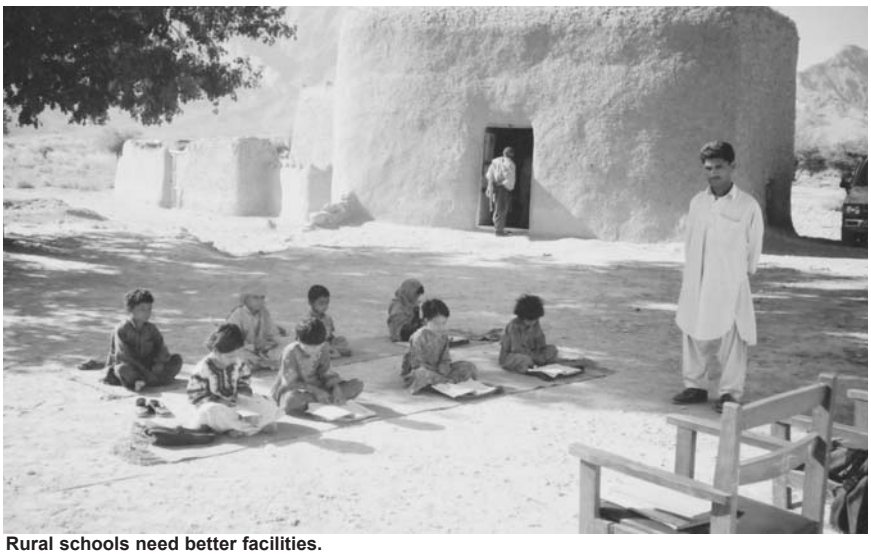
IMPACT OF NFC ON EDUCATION

Changes in the 1991 and the 1997 National Finance Commission (NFC) Awards have also compromised provincial fiscal stability. Prior to the 1991 NFC Award, the provincial governments were able to run up deficits to finance their expenditures and the deficits were covered by the federal government in the form of deficit grants. The 1991 NFC Award deleted the provision for federal deficit grants to the provinces and at the same time the provinces were advised against carrying budget deficits. These provisions required provinces to limit expenditures to available resources and impacted directly on social sector expenditures: while establishment expenditures are more or less fixed, the only scope for expenditure reduction lies in social sector expenditures. A saving grace was that the federal government continued to cover the expenditures of the provincial component of the PSDP, which meant that provincial development activities continued to proceed.

The 1997 NFC Award incorporated three major changes with far reaching impacts on provincial finances. First, provision for federal financing of the provincial component of PSDP was withdrawn and provinces were required to finance their own development expenditures. No tax bases were transferred to the provinces to enable them to finance this additional burden. Every *rupee* of development expenditure incurred by the provincial governments cut into their social sector expenditures.

Second, under the 1991 Award, customs duties did not form part of the divisible pool, with the federal government retaining the entire proceeds. Income tax and sales tax were part of the divisible pool, with the federal government retaining 20 per cent of the proceeds and 80 per cent being distributed among the provinces. The 1997 Award readjusted the size and composition of the federal divisible pool and the revenue sharing formula. The Award included all taxes in the federal divisible pool and changed the federal-provincial distribution ratio to 62.5-37.5 per cent.

Simultaneously, the federal government began to implement the remaining part of its structural adjustment reforms, scaling down customs duties drastically and expanding sales taxes significantly. Had the 1991



Rural schools need better facilities.

Award distribution arrangement continued, the provinces would have borne no burden of the decline in customs duty revenues and would have accrued 80 per cent of the additional revenues from sales taxes. Under the 1997 Award, the federal government shifted one-third of the loss from customs duties to the provinces and increased its share of the larger sales tax revenues by over 60 per cent. Viewed from the provincial perspective, the provinces had to bear one-third of the burden of reduction in customs duties revenues and accrued only one-third of the additional sales tax revenues.

Third, in view of the reduced provincial receipts from the federal pool and the additional PSDP expenditure burden on the provinces, provincial governments were allowed to take loans from the federal government to finance their deficits. However, the federal government retained a premium on the interest rate charged. In other words, the federal government borrowed money at lower rates and lent it to provincial governments at higher rates. In most cases, this premium was significant.

Over the years, these developments have shrunk the fiscal space for the provinces, leaving little to spend on the provision of social services. The provincial share of financing the federal fiscal deficit, as a percentage of total provincial expenditures, has risen from 17 per cent in FY1991 to 29 per cent in FY2003 **(see table 4.2)**. The transfer of provincial resources to the federal treasury has increased from Rs. 87 billion in FY1991 to Rs. 318 billion in FY2003. Had the provinces not been burdened with the responsibility of sharing the federal fiscal deficit, they would have had Rs. 92 billion, or 29 per cent, more at their disposal in FY2003.

TABLE 4.2 BURDEN OF FISCAL DEFICIT ON PROVINCES
(Rs. in billion)

Years	Provincial Share of Containment of Fiscal Deficit	Total Provincial Expenditure	Provincial Share as % of Total Provincial Expenditure
1990-91	15.0	86.5	17.3
1991-92	17.6	103.4	17.0
1992-93	20.1	114.0	17.6
1993-94	22.5	124.1	18.1
1994-95	29.7	155.6	19.1
1995-96	36.8	185.0	19.9
1996-97	43.2	182.2	23.7
1997-98	35.7	197.9	18.0
1998-99	35.7	208.9	17.1
1999-00	57.8	243.9	23.7
2000-01	59.3	259.3	22.9
2001-02	56.6	283.8	19.9
2002-03	92.0	318.2	28.9
2003-04	96.7	337.2	28.7

Note: Figures for the years 1990-91 to 2002-03 are revised estimates, and for the year 2003-04, budget estimates.

Source: Federal Budget in Breif, Explanatory Memorandum on Federal Receipts, and Provincial Annual Budget Statements (various issues)

The impact of the NFC Award on provincial finances can be seen from the trends in expenditures on education. Education expenditure data for all the provinces combined have been organized along four time periods: 1975-85, 1986-89, 1990-96, and 1997-2002. The rationale for the time periods is determined by four events: the 1974 NFC Award, the launching of the Five Point Programme[1] in FY1986, the 1991 NFC Award, and the 1997 NFC Award. As such, 1975-85 represents the pre-Five Point Programme period; 1986-89 represents the post-Five Point Programme and pre-1990 NFC Award period; 1990-96 represents the period under the 1991 NFC Award; and 1997-2002 represents the period under the 1997 NFC Award.

The trends in annual average growth rates in real education expenditures for the four provinces combined, presented in **tables 4.3 and 4.4**, show that growth in expenditures for all levels of education peaked across the board – for recurring and development expenditure and for all levels of education – from 1986 to 1989, ranging from 9 per cent in tertiary education to 17 per cent in development expenditure. By contrast, there were declines across the board during the 1990-96 period, and growth collapsed from 1997 to 2002, registering declines in a number of cases. During the 1997-2002 period, real recurring expenditure on education increased by only 1 per cent, while real development expenditure declined by 11 per cent. In primary and secondary education, growth was reduced from about 8 per cent during the 1990-96 period to less than 2 per cent for primary education and less than 1 per cent for secondary education.

TABLE 4.3 AVERAGE GROWTH IN REAL EXPENDITURE ON EDUCATION (%)

Years	Total Real Expenditure	Real Development Expenditure	Real Recurring Expenditure
1975-85	9.95	11.89	9.98
1986-89	11.81	17.01	11.73
1990-96	5.91	4.79	6.65
1997-02	-0.90	-10.83	0.56

Source: Federal Budget in Brief and Provincial Annual Budget Statements (various issues)

TABLE 4.4 AVERAGE GROWTH IN RECURRING EXPENDITURE BY EDUCATION LEVEL (%)

Years	Primary	Secondary	Tertiary
1975-85	7.78	10.85	8.99
1986-89	14.80	12.43	9.10
1990-96	8.44	8.10	4.43
1997-02	1.61	0.60	-2.57

Source: Provincial Demands for Grants Current Expenditure (various issues)

[1]The Five Point Programme, launched in FY1986, was the first concerted effort to overcome social sector deficiencies, including those in education, and led to significantly enhanced fiscal allocations for designated sectors. The Programme was effectively abandoned in FY1988.

TABLE 4.5 AVERAGE GROWTH IN PROVINCE-WISE REAL RECURRING EXPENDITURE ON EDUCATION (%)

Years	Punjab	Sindh	NWFP	Balochistan
1975-85	7.61	6.06	14.21	10.59
1986-89	12.10	13.42	12.71	13.73
1990-96	7.51	7.92	6.79	7.63
1997-02	-1.26	3.93	-0.33	5.51

Source: Provincial Annual Budget Statements (various issues)

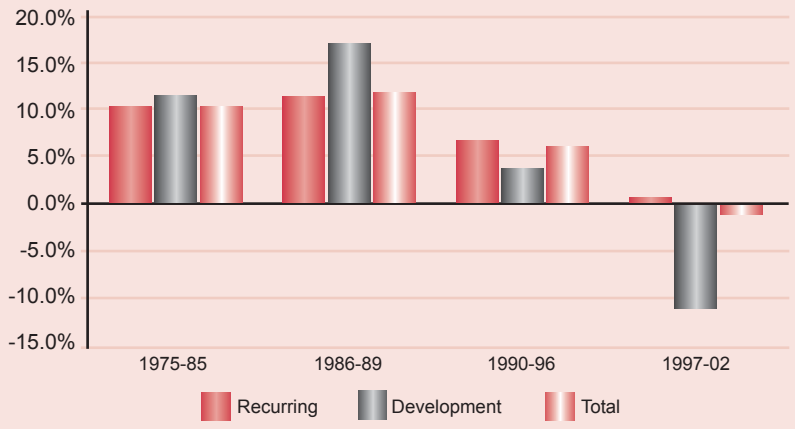
TABLE 4.6 AVERAGE GROWTH IN PROVINCE-WISE REAL DEVELOPMENT EXPENDITURE ON EDUCATION (%)

Years	Punjab	Sindh	NWFP	Balochistan
1975-85	7.92	2.30	10.15	93.55
1986-89	20.65	38.06	12.62	22.96
1990-96	6.23	0.85	25.99	26.45
1997-02	-13.30	-7.33	-18.90	7.59

Source: Provincial Annual Budget Statements (various issues)

A province-wise analysis presents the same situation, as shown in **tables 4.5 and 4.6**. Compared to the 1990-96 period, average growth in real recurring expenditure in education from 1997 to 2002 was half in Sindh and about 70 per cent in Balochistan, while Punjab and NWFP registered declines. Average development expenditure posted negative growth ranging from 7 per cent in Sindh to 13 per cent in Punjab and 19 per cent in NWFP. In Balochistan, growth declined from 26 per cent in the preceding period to 7.5 per cent during the 1997-2002 period **(see chart 4.2)**.

CHART 4.2 AVERAGE GROWTH IN TOTAL REAL EXPENDITURES ON EDUCATION



Source: Federal Budget in Brief and Provincial Annual Budget Statements (various issues)

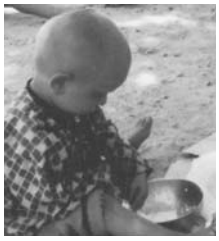


TABLE 4.7 AVERAGE GROWTH IN PROVINCE-WISE REAL RECURRING EXPENDITURE BY LEVEL OF EDUCATION (%)

Years	Punjab	Sindh	NWFP	Balochistan
Primary Education				
1975-85	7.26	6.34	13.15	12.11
1986-89	13.12	16.29	19.54	19.25
1990-96	9.82	8.21	6.21	5.30
1997-02	-0.89	7.91	1.55	5.52
Secondary Education				
1975-85	10.81	8.26	15.60	13.12
1986-89	13.18	13.07	10.52	12.35
1990-96	6.51	9.59	9.46	16.92
1997-02	-2.09	12.54	2.47	7.03
Tertiary Education				
1975-85	8.73	8.08	14.3	11.9
1986-89	9.07	7.65	12.46	14.10
1990-96	3.46	4.59	9.25	8.55
1997-02	-1.21	-0.56	-8.00	3.18

Source: Provincial Demands for Grants Current Expenditure (various issues)

Different provinces responded in their own way to the resource crunch **(see table 4.7)**. Punjab failed to protect its education expenditures, registering declines in primary, secondary and tertiary education. Sindh protected primary and secondary education at the expense of tertiary education. NWFP curtailed expenditures across the board, with the maximum burden being placed on tertiary education. Balochistan protected primary education, allowing expenditure on secondary and tertiary education to fall. This decline in education expenditure growth adversely affected growth in enrolment, with primary enrolment growth declining steadily since 1986-89 and secondary and tertiary enrolment growth collapsing to 2 per cent and less than 2 per cent, respectively **(see table 4.8)**.

TABLE 4.8 AVERAGE GROWTH IN LEVEL-WISE GROSS ENROLMENT (%)

Years	Primary	Secondary	Tertiary
1975-85	3.38	4.55	5.78
1986-89	8.01	7.12	6.48
1990-96	6.83	6.85	5.92
1997-02	5.10	2.07	1.84

Source: Economic Survey (various issues)

It appears that the thrust of macroeconomic policy, with its excessive stress on stabilization objectives, has seriously compromised the capacity of the provincial governments to invest in education. Clearly, a change of direction is in order. It is imperative that macroeconomic policy not contradict the objectives of social and economic growth.

POVERTY AND EDUCATION

While the contraction of resources for education constitutes a supply-side constraint, poverty constitutes a demand-side constraint. The contribution of macroeconomic and fiscal stabilization policies to increasing poverty has been referred to earlier in the chapter. It is, however, important to examine the contribution of poverty in restricting school enrolment. **Tables 4.9 to 4.11** highlight this relationship.

TABLE 4.9 REASONS FOR NEVER ATTENDING SCHOOLS FOR CHILDREN AGED 10 - 18 (%)

	Pakistan		Punjab		Sindh		NWFP		Balochistan	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Parents didn't allow	3	36	3	33	0	30	8	48	6	55
Too expensive	40	26	42	35	42	17	35	20	28	9
Too far (distance)	8	14	5	12	11	20	3	11	19	9
Had to help at work/home	7	7	8	6	4	7	8	4	5	12
Child not willing	29	7	26	5	33	9	28	8	22	2
Others	13	10	16	9	10	17	18	9	20	13

Source: PIHS (2002)

Table 4.9 documents the reasons for not attending school. Interestingly, the result is significantly gender-specific, with differences between provinces as well. The single largest reason for boys, 40 per cent, is that education is too expensive. This reason is cited by fewer respondents in NWFP and Balochistan because of the high share of 'other' reasons, which have not been specified. **Table 4.10** shows a progressive increase in boys' and girls' school enrolment rates with the increase in income level. The enrolment ratio for boys in the highest income quintile is

TABLE 4.10 SCHOOL ENROLMENT RATES BY INCOME GROUPS

Income Quintile	Net Enrolment Ratio		Ratio of Girls to Boys
	Boys	Girls	
1	21.0	13.9	60.9
2	27.2	20.4	70.2
3	31.6	23.4	67.3
4	35.9	31.8	82.7
5	45.1	44.7	89.4

Source: PIHS (2002)

more than twice that of boys in the lowest quintile. The ratio for girls is three times as much. Similarly **table 4.11** shows a progressive increase in total annual household expenditure on education with an increase in income level; moreover, expenditure in the highest quintile households is about four and a half times higher than in the lowest quintile.

TABLE 4.11 HOUSEHOLD ANNUAL EXPENDITURE ON EDUCATION BY INCOME GROUPS (*Rs. per pupil*)

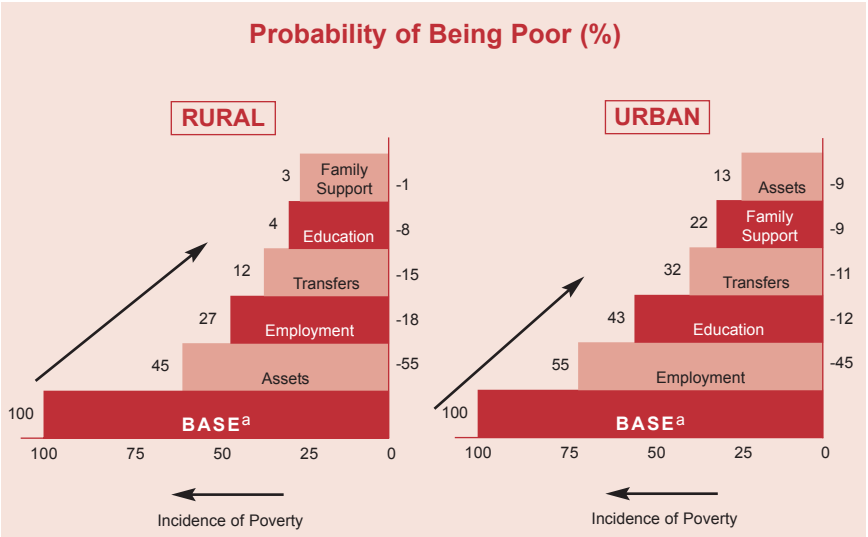
Income Quintile	Boys	Girls	Ratio of Girls to Boys
1	954	851	0.89
2	1140	1052	0.92
3	1393	1315	0.94
4	1831	1745	0.95
5	4367	3877	0.89

Source: PIHS (2002)

The result for girls is significantly different. The principal reason for not attending school is parental permission. This stands at 36 per cent, well above all the other factors affecting attendance. The exception is in Punjab, where poverty and parental permission are accorded more or less equal weight. About half the girls in NWFP and Balochistan are recorded as not attending school because of parental permission. Income wise, while the ratio of girls' to boys' enrolment does increase with income, it is notable that within no income quintile does expenditure on education of girls exceed that of boys. The statistics point to serious sociological problems in the way of promoting education and are discussed in further detail later in the chapter.

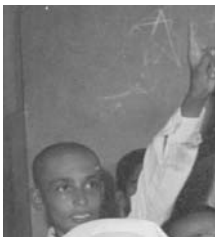
To return to the question of poverty, being poor is not a random occurrence. There are distinct demographic, social and economic factors that create unequal distribution of income or force a household into a

BOX 4.2 THE LADDER OF POVERTY REDUCTION



[a]The head of the household is illiterate and unemployed, receives neither transfers nor assets, and has no family support
Source: Social Development in Pakistan: Annual Review, 2000

state of poverty. To a substantial extent, poverty is a product of unequal distribution of assets and income. **Box 4.2** identifies the factors that determine the probability of being poor in urban and rural areas. The principal factor in urban areas is shown to be employment, which can reduce urban poverty by as much as 45 per cent. The principal factor in rural areas is shown to be asset redistribution, which can reduce rural poverty by as much as 55 per cent.



LAND INEQUALITY AND SCHOOLING

Land inequality is not only shown to be a principal factor in poverty, but is also a major factor in education inequality, which in turn sustains poverty. This is highlighted by an empirical analysis of the relationship between land and education inequality. The former is measured on the basis of available farm size data and the latter is represented by a measure of School Life Expectancy (SLE) of students 5-24 years of age (**see box 3.4** in earlier chapter for methodology of constructing SLE and **box 4.3** for regression results of land inequality and schooling). The analysis shows that districts with high land inequality report low rural SLE.

BOX 4.3 LAND INEQUALITY AND SCHOOLING

SLE is considered a key primary determinant of human capital formation through formal schooling. The impact of land concentration on schooling is then estimated by regressing *SLE* against developmental and land concentration variables. The specific equation is given below with μ, which is a standard stochastic term of the model.

$$SLE_i = \alpha + \beta_i (DDI)_i + \beta_2 (Gini)_i + \beta_3 (T)_i + \beta_4 (NI)_i + \beta_5 (SP)_i + \mu_i$$

where, *DDI* is the level of district economic development, Gini is the index of land ownership, T is the proportion of tenant households, and *NI* is the proportion of households with no access to land. A dummy variable (*SP*), which takes the value of 1 for districts of southern Punjab and 0 otherwise, is also included. The inclusion of the dummy variable is supported by the fact that districts of southern Punjab are in sharp contrast to other areas of the province in terms of a higher concentration of land ownership and a stronger political presence of powerful landowners. The regression results for males, females and overall are given below.

REGRESSION RESULTS FOR RURAL PUNJAB

	Rural Overall		Rural Male		Rural Female	
Variables	Coefficients	t-Statistic	Coefficients	t-Statistic	Coefficients	t-Statistic
Index of Economic Development (%)	0.04	1.87*	0.03	1.09	0.05	2.23*
Gini - Land Ownership (%)	-0.12	-1.74*	-0.10	-1.78*	-0.17	-2.35*
Tenant Households (%)	-0.19	-2.10*	-0.16	-1.79*	-0.24	-2.53*
No Access to Land (%)	-0.06	-1.71*	-0.05	-1.52	-0.07	-1.94*
Dummy for South Punjab	-1.17	-1.87*	-1.20	-2.11*	-1.00	-1.52
(Constant)	16.05	3.41*	15.73	4.63*	18.10	3.66*
R-squared	0.46		0.39		0.53	
F-statistic	4.84		3.55		6.30	
Probability (F-statistic)	0.00		0.01		0.00	

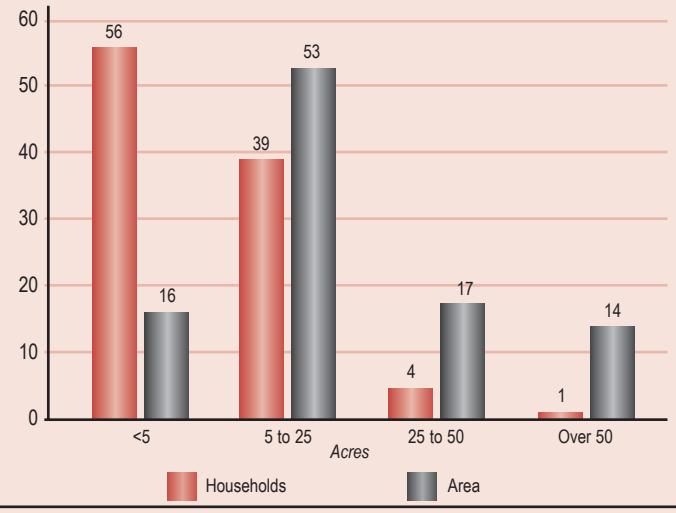
Note: *Coefficients are statistically significant at least at the 10% level

Source: SPDC estimates based on Population and Housing Census (1998) and Agriculture Census (2000)

Land distribution statistics present a grim picture. According to the World Bank's 2002 Pakistan Poverty Assessment, almost one-half of rural households own no land, while about 2 per cent of households possess 44 per cent of land. Large and very large farmers control 66 per cent of all agricultural land in Pakistan. These inequalities are reflected by the Gini coefficient of land concentration, which is as high as 0.78 for rural Pakistan.

The main agrarian regions of Pakistan are Punjab and Sindh. Punjab is considered to be more advanced, in terms of transition from traditional forms of agriculture, than Sindh, where semi-feudal relations continue to prevail. The analysis of the link between land inequality and educational inequality has been carried out for Punjab, primarily because the latest data is available for the province. The distribution of land ownership in Punjab, as portrayed in **chart 4.3**, is as skewed as it is nationally. About 56 per cent of farm households owning less than five acres each command only 16 per cent of land in the province, while 5 per cent of farmers owning over 25 acres each control 31 per cent of land.

CHART 4.3 DISTRIBUTION OF LAND OWNERSHIP BY SIZE IN PUNJAB (%)

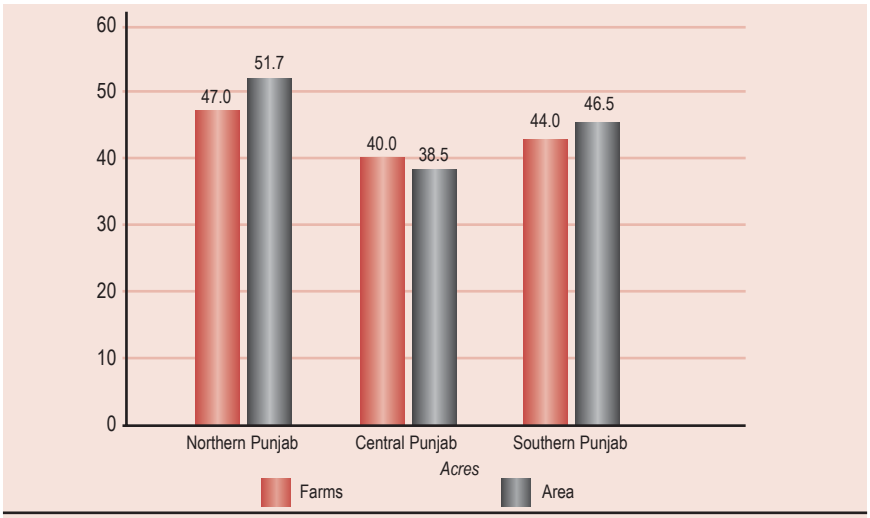


Source: SPDC estimates based on Agriculture Census (2000)

Within Punjab, the northern districts of the Potohar plateau and surrounding highlands rely mainly on rain-fed agriculture, while the rest of Punjab is served with canal irrigation and tube wells. This irrigated area can be further subdivided between central and southern Punjab. Southern Punjab has a higher concentration of land ownership and a stronger political presence of powerful landowners. In this regard, southern Punjab shares some features of the agrarian economy of Sindh, where large landlords dominate rural economic and political life.

Chart 4.4 summarizes land distribution for the three regions of the province in terms of two inequality measures: the Gini coefficient and the highest to lowest ratio (H/L Ratio) of average landownership between

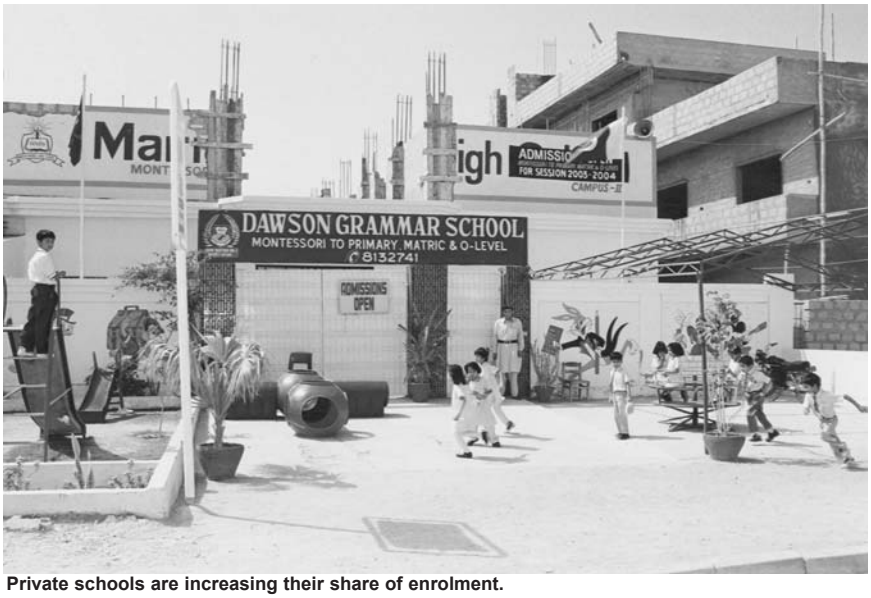
CHART 4.4 INEQUALITY IN LAND OWNERSHIP IN PUNJAB BY REGION (%)



Source: SPDC estimates based on Agriculture Census (2000)

small farmers (defined as farmers with less than five acres) and large farmers (defined as farmers with over 100 acres). Except for three districts in central Punjab – Faisalabad, Lahore and Toba Tek Singh – the value of the Gini coefficient for all districts is more than 50 per cent, indicating a considerable extent of land inequality. The lowest inequality appears in central Punjab and the highest in northern Punjab. However, the maximum Gini coefficient of 67 per cent is computed for Muzaffargarh in southern Punjab, implying that the distribution of land is the most unequal in that district.

Northern Punjab deserves to be mentioned separately from the central and southern irrigated regions. This is because, despite a higher



Private schools are increasing their share of enrolment.

degree of land inequality, northern Punjab reports a higher SLE as well. For instance, the rural SLE for northern Punjab is 6.7 as compared to 4.9 for southern Punjab. Similarly, the rural literacy rate of northern Punjab is significantly higher by over 20 per cent than that of southern Punjab. This could be due to the *barani* nature of agriculture, in which land in the region does not command the same premium as in irrigated areas and may not be a focus for the emergence of a feudal class. Lower productivity and the absence of sufficient opportunities in agriculture, on account of the adverse 'land-man' ratio, also compels the regional labour force to opt for employment in services, particularly in the armed forces. Given that employment in the services sector requires some degree of literacy and numeric ability and that employment in the armed forces carries minimum educational requirements, these factors may have induced greater access to education.

The comparison of the two irrigated regions in central and southern Punjab, as presented in **table 4.12**, clearly shows the inverse relationship between land inequality and education. Inequality measures are higher in southern Punjab relative to central Punjab. The Gini coefficient for land in southern Punjab is 44 per cent as against 40 per cent in central Punjab.

TABLE 4.12 PATTERN OF LAND AND EDUCATION INEQUALITY IN PUNJAB

Regions	Gini (%)	
	Land	Education
Northern Punjab	47	18
Central Punjab	40	12
Southern Punjab	44	16

Sources: SPDC estimates based on Population and Housing Census (1998)
Agriculture Census (2000)

The corresponding Gini coefficient for education is also higher at 16 per cent for southern Punjab compared to 12 per cent for central Punjab. The rural SLE and literacy rates for southern Punjab are 5 and 24 per cent, respectively, compared to 7 and 29 per cent in central Punjab.

A more formal examination of the impact of patterns of land ownership on the SLE of students of 5-24 years of age has been carried out through regression analysis and shows the link between land and education inequality. The regression equation measures SLE as a function of the District Development Index (DDI), Gini coefficient of land ownership, proportion of tenant households, and proportion of households with no access to land.

The results of regression analysis, summarized in **table 4.13**, show that school life expectancy is positively related to level of development, but negatively to land inequality, proportion of tenant households and proportion of households with no access to land. It is shown that SLE in central Punjab is higher at 6.9 compared to 5.0 in southern Punjab. Table 4.13 shows that, holding district development constant, a 10 percentage-point decrease in land inequality index leads to an increase of 1.2 years in SLE. Similarly, a 10 point decrease in tenancy is associated with an

TABLE 4.13 QUANTIFYING IMPACTS ON SCHOOLING

	Change in School Life Expectancy (Years)		
	Total	Male	Female
Ten percentage point change in:			
District Development Index	↑ 0.4	0.3	0.5
Land Inequality (Gini Land Ownership)	↓ 1.2	1.0	1.7
Proportion of Tenant Households	↓ 1.9	1.6	2.4
Proportion with Access to Land	↑ 0.6	0.5	0.7

Sources: SPDC estimates based on Population and Housing Census (1998)
Agriculture Census (2000)

increase of 1.9 years in SLE. A similar increase in access to land raises SLE by 0.6 years.

The impact of lower land inequality on female educational level appears to be even more pronounced and to hold across the province. Gender segregated analysis suggests that the SLE for rural females is higher at six years in central Punjab, which is two years higher than for southern Punjab. Furthermore, a 10 point decrease in land inequality leads to an increase of 1.7 and 1.0 years in female and male rural SLE, respectively. Similarly, a 10 percentage point decrease in the proportion of tenant households is associated with an increase of 2.4 and 1.6 years in female and male rural SLE, respectively. A 10 point increase in access to land raises female and male rural SLE by 0.7 and 0.5 years, respectively. The effect of district development level on female rural SLE is also larger at 5 per cent than on male SLE at 3 per cent.

Clearly, education inequality is closely associated with land inequality. The reasons are partly economic. Concentration of the stock of land results in concentration of the flow of income in rural areas, which accentuates rural poverty and inhibits wider access to education, particularly to higher education. The reasons are also partly political. The unequal balance of economic power translates into an unequal balance

Eager to learn.

of political power and inhibits the peasantry from effectively expressing its demand for education. The establishment of an egalitarian land tenure system is, therefore, an essential prerequisite for the promotion of education in rural areas.

EDUCATION POLICY MAKING

The government's commitment to education was declared at the National Education Conference in 1947, which was the first step towards defining education policies and goals in Pakistan. Since then, there have been seven national education policies, eight Five-year plans, and several national-level schemes relating to education **(see table 4.14)**. However, a review of the history of education policymaking and planning shows that each round of policymaking repeats the same pattern: the importance of education is iterated, the failure of past efforts is lamented, the main issues in education reform are highlighted, and new plans are proposed to meet new targets. Yet, the targets have remained elusive to date.

The policy dialogue commenced with the 1947 National Education Conference, which emphasized the need for free and compulsory primary education and for adult education to solve the problem of illiteracy over a period of 25 years, i.e., by 1972. The six-year National Plan of Educational Development, 1951-57, which proposed to make 2.8 million adults literate every year, followed. However, a review of the Plan showed that the literacy ratio declined by 0.1 percentage point, from 16.4 per cent in 1951 to 16.3 per cent at the end of the decade.

TABLE 4.14 LIST OF EDUCATION POLICIES, PLANS, PROGRAMMES AND SCHEMES

1. National Education Conference, 1947
2. National Plan of Education Development, 1951-57
3. First Five Year Plan, 1955-60
4. Report of the Commission on National Education, 1959
5. Second Five Year Plan, 1960-65
6. Third Five Year Plan, 1965-70
7. New Education Policy, 1970
8. The Education Policy, 1972-80
9. Fifth Five Year Plan, 1978-83
10. National Education Policy and Implementation Programme, 1979
11. Literacy and Mass Education Commission, 1981
12. 10 Point Programme, 1983
13. Sixth Five Year Plan, 1983-88
14. National Literacy Plan 1984-86
15. Drop-in Schools, 1986-89
16. Nation-wide Literacy Programme, 1986-90
17. *Nai Roshni* Schools, 1986-90
18. Seventh Five Year Plan, 1988-93
19. National Education Policy, 1992
20. Eighth Five Year Plan, 1993-98
21. National Education Policy, 1998-2010
22. Education Sector Reforms Action Plan 2001-04
23. Education Sector Reforms Action Plan 2001-05

About half of public primary schools are without boundary walls.

A review of literacy rate targets shows that these have been set by a total of 10 policy documents over the last quarter century **(see table 4.15)**. The *Nai Roshni* Schools Programme, 1986-90, set the most modest target of 31 per cent, to be achieved by 1990. The Seventh Five Year Plan, 1988-93, set the most ambitious target of 80 per cent, to be achieved by 2000. In contrast to these targets, in 1993 the literacy rate stood at 35 per cent and the current rate is stated to be 52 per cent.

With respect to Universal Primary Education, the First Five Year Plan, 1955-60, proposed the target to be achieved by 1980; however, the Education Policy, 1972-80, revised the target to 1979 for boys and 1984 for girls. The Fifth Five Year Plan, 1978-83, set the target period for 1986-87; however, one year after the launching of the Plan, the National Education Policy of 1979 extended the target to 1992, while the National Education Policy of 1992, extended it even further to 2002. Towards the end of 2003, Universal Primary Education is still an objective to be achieved **(see table 4.16)**.

TABLE 4.15 LITERACY TARGETS: SHIFTING GOALPOSTS

Literacy Targets	Target (%)	Target Date
National Education Policy 1979	35	1983
National Literacy Plan 1984-86	33	1986
Nationwide Literacy Programme 1986-90	54	1990
Nai Roshi Schools 1986-90	31	1990
Seventh Five Year Plan 1988-93	40	1993
Seventh Five Year Plan 1988-93	80	2000
National Education Policy 1992	70	2002
Eighth Five Year Plan 1993-98	48	1998
National Education Policy 1998-2010	55	2003
ESRAP 2001-05	60	2005

Sources: GOP, MOE September (2002)
ESRAP (2001-05)
Bengali, K. (1999)

TABLE 4.16 UNIVERSAL PRIMARY EDUCATION TARGETS

Plan / Policy	Target Year
First Five Year Plan: 1955-60	1975-80
New Education Policy 1970	1980
Education Policy 1972-80	
Boys	1979
Girls	1984
Fifth Five Year Plan: 1978-83	1986-87
National Education Policy 1970	1992
National Education Policy 1992	2002

Source: Bengali, K. (1999)

The case of primary enrolment rates is similar. The National Plan of Educational Development, 1951-57, stipulated the enrolment rate target (for children aged 6-11 years) at 66 per cent; the primary enrolment rate in 1955 was 43 per cent. The First Five Year Plan, 1955-60, proposed to raise the primary enrolment rate to 49 per cent, but attained only 36 per cent, even below the rate realized in 1955. The Second Five Year Plan, 1960-65, proposed a target of 56 per cent by 1965, but achieved only 45 per cent as the primary enrolment rate. The Third Five Year Plan, 1965-70, proposed a target of 70 per cent by that year; however, the rate had dropped to 39 per cent by 1970. Between the Sixth Five Year Plan commencing in 1988 and the Eighth Five Year Plan completed in 1998, targets varied from 75 to 96 per cent. During the 1983-1998 period, the enrolment rate moved from an aggregate of 48 per cent to 86 per cent for boys and 58 per cent for girls. In 2001, the primary enrolment rate was reported to be 74 per cent: 84 per cent for boys and 63 per cent for girls **(see table 4.17)**.

TABLE 4.17 PRIMARY ENROLMENT RATE TARGETS: SHIFTING GOALPOSTS

Plan / Policy	Target	Year	Achieved
National Plan of Education Development, 1951-57	67	1957	43 (1955)
First Five Year Plan, 1955-60	49	1960	36 (1960)
Second Five Year Plan, 1960-65	56	1965	45 (1965)
Third Five Year Plan, 1965-70	70	1970	39 (1970)
Sixth Five Year Plan, 1983-88	75	1988	69 (1988)
Eighth Five Year Plan, 1993-98			
Boys	96	1998	86 (1998)
Girls	82	1998	58 (1998)
National Education Policy: 1998-2010			
Net	90	2003	
Gross	105	2010	
ESRAP: 2001-05			
Net	76	2005	
Gross	100	2005	

Source: Bengali, K. (1999)

Current Initiatives

The current action plan in the education sector is framed in the Education Sector Reforms Action Plan: 2001-05 (ESRAP) of the government of Pakistan. ESRAP is designed to operationalize several government policy statements and international commitments towards poverty reduction, human development and improvements in the education sector. These comprise mainly the National Education Policies of 1992 and 1998-2010, and the National Plan of Action on Education For All: 2000-15 (EFA). ESRAP is an integral part of Interim Poverty Reduction Strategy Paper (I-PRSP), which is now a prerequisite for obtaining concessional lending, particularly from the World Bank and the International Monetary Fund.

The Education Sector Reforms (ESR) objectives contained in the ESRAP 2001-05 document have been delineated as follows:

- Universalization of primary education and adult literacy;
- Mainstreaming *madaris* for diversifying employment opportunities for their graduates;
- Improvement in the quality of education through better teachers, upgraded training options, curriculum and textbook reforms, and a competency based examination system;
- Introducing a third stream of gender and area specific technical and vocational education at the secondary level with innovative approaches for counselling students; and
- Setting up monotechnics/polytechnics at the District and Tehsil levels.

A review of ESRAP reveals several problems with respect to federal-provincial coordination, monitoring of targets, and financing. It appears that the targets and planned financial allocations are no longer feasible. The primary problem, it emerges, is that ESRAP is a centrally designed plan with insufficient recognition of the implementation and financing constraints and capabilities of the provincial and local governments.

Going to school.

An example of the lack of coordination among the key stakeholders is found in the following quotation from an internal provincial government document relating to ESRAP implementation in Sindh:

> "The ESR Programme has been initiated by the Provinces under the advice of the Federal Government. It is therefore binding on the Federal Government to continuously fund these schemes to achieve the designed objectives. The Sindh Provincial and District Governments have their own budgetary constraints and other development priorities, and are therefore, not in a position to execute these schemes from their own resources due to continued fiscal deficits.
>
> Generally it has been observed that various Federal as well as Donor driven programmes do not support ongoing programmes of the Provincial Government but invariably create new parallel initiatives making the implementation complex. It would have been better if the ESR components had been restricted to two or three broad categories. In the context of Sindh, rehabilitation and provision of shelter for shelter-less schools is a huge agenda needing heavy investment."

It appears that the federally designed ESRAP was not drawn up in consultation with provincial education departments; rather, the agenda was laid out, a commitment of funding was made (unilaterally by the federal government on behalf of the provincial governments), and new schemes/programmes fitting into the given agenda were invited. Expediency in producing a policy document to show commitment to EFA and for inclusion in the I-PRSP appears to have been given priority over the needs of the education sector.

Feasibility and Monitoring of Targets. ESRAP's national targets are given in **table 4.18**. To begin with, the validity of the benchmarks used is questionable. A comparison of ESRAP and Pakistan Integrated Household Survey (PIHS) 2001-02 education indicators suggests an overstatement of benchmarks in ESRAP. While ESRAP assumes 2001 benchmarks for literacy, gross primary enrolment rate, net primary enrolment rate, and middle school enrolment at 49, 83, 66, and 48 per cent, respectively, PIHS 2001-02 records lower benchmarks at 45, 72, 42, and 41 per cent, respectively.

TABLE 4.18 NATIONAL TARGET FOR EDUCATION SECTOR REFORMS ACTION PLAN 2001-05

Sub-Sector	Benchmark 2001	Target 2005	PIHS 2001-02
Literacy (10 years and older)	49%	60%	45%
Gross Primary Enrolment	83%	100%	72%
Net Primary Enrolment	66%	76%	42%
Middle School Enrolment	47.5%	55%	41%
Secondary School Enrolment	29.5%	40%	-
Technical Stream Schools	100	1,100	-
Mono/polytechnics	77	160	-
Madaris Mainstreaming	148	8,000	-
Public Private Partnerships	200	26,000	-
Higher Education Enrolment	2.6%	5%	-

Sources: ESRAP (2001-05)
PIHS (2001-02)

ESRAP states:

> "ESR is a target oriented and output based Action Plan with measurable outcomes defined by each Province according to their own baselines. These outcomes will be monitored by specialist teams of I-PRSP and the EFA National Plan of Action."

The claim that ESRAP is a target oriented plan is, however, not borne out. Although ESRAP is to be implemented by the provinces, provincial targets have not been provided. Province-specific targets are necessary, however, given the considerable variation in education indicators among provinces. The absence of provincial targets also leaves unanswered the question of how the overall national targets will be monitored. In addition, there is no mention of gender or urban-rural differences in education indicators. Monitoring teams sent by the federal government have reviewed and reported provincial progress only on the basis of expenditures incurred.

However, in Sindh at least, there is disagreement on these assessments. It is contended that progress has been measured by comparing expenditures incurred with expenditures planned, while it should have been measured by comparing expenditures incurred with funds actually made available. The difference arises because the federal government did not allocate and release all the funds that it had committed and on the basis of which expenditures had been planned.

Financial Requirements, Allocations, and Utilization. ESRAP states: "The government is committed to provide adequate funds for its implementation during the remaining plan period," and further, "This estimate [of Rs. 100 billion over four years] does not include recurrent expenditure of the ESR Programme. The Districts and Provincial/Area governments will review and assess their own requirements and adjust the non-development budgets."

Estimates of year-wise financial requirements and allocations are provided in **table 4.19**, where a pre-determined budgetary gap of Rs.49.5 billion, or nearly 50 per cent, is seen. The situation raises several questions:

- What is the likelihood of filling in the Rs. 49.5 billion pre-determined resource gap in development expenditures? How will targets be revised to accommodate a shortfall in resources?

TABLE 4.19 **DEVELOPMENT EXPENDITURE REQUIREMENTS FOR ESRAP 2001-05 (*Rs. Billion*)**

Sub Sector	2001-02	2002-3	2003-04	2004-05	Total
Elementary Education	4	9	10	11	34
Technical Education	0	3	5	7	15
College/Higher Education	1	3	3	3	10
Quality Assurance	1	2	2	3	8
Literacy Campaign	0.8	2	2.5	3	8.3
Public/Private Partnership	0.1	0.2	0.2	0.2	0.7
Mainstreaming Madaris	0	5	5	4	14
Secondary Education	1	3	3	3	10
Total Budget	7.9	27.2	30.7	34.2	100
Budgeted Allocations	7.5	10.8	15.0	17.2	50.5
Budgeted Gap	0.4	16.4	15.7	17.0	49.5

Source: ESRAP (2001-05)

- What are the estimated recurrent expenditures necessary to achieve a sustained (even if partial) improvement in targeted indicators, with or without the full allocation of required development expenditures? How will development expenditure allocations change if interim targets do not show improvements?
- What is the likelihood that provinces and districts will be able to provide the development and recurrent expenditures necessary to achieve targets, given that the above estimates are based on the rather questionable assumption that 'District Governments will allocate adequate funds for the on-going Education Reform Programmes'?

A review of total Federal and Provincial development expenditures for education over the three years that ESRAP has been in place reveals that Rs. 37.8 billion have been allocated compared to the budgeted requirement of Rs. 65.4 billion, reflecting a shortfall of about Rs. 28 billion or 42 per cent **(see table 4.20)**. Interestingly, the shortfall had been foreseen as the Economic Survey 2002-03 stated, "Given the existing level of financing through PSDP, it is unlikely that the resources required for achieving the above targets would become available."

The provincial capability and commitment to mobilize necessary resources is reflected by the following statement:

> "During 2002-03 no separate funds could be allocated by Ministry of Education for the ESR Programme. Instead Provinces were asked to continue funding ESR schemes from General Sales Tax (GST) share of 2.5 per cent. However, all the Provincial Governments have shown their inability to allocate the requisite funds through 2.5 per cent GST refunds as they have their own priorities and other development expenditures to meet.
>
> The Federal Government has released so far a sum of Rs. 4.579 billion. Out of this, Sindh has received an amount of Rs. 803.103 million. If this process of paltry funding is continued, the ESR scheme will definitely receive a serious set back and the Provinces will not be able to attain objectives."

With only one year of allocations left, there are large shortfalls in the ESRAP development expenditure budget. Federal and provincial level differences on targets, finances and implementation are still outstanding, while districts are spending funds on ad hoc schemes and programmes. Given that benchmark estimates are incorrect, gender, urban/rural, or province-specific targets have not been defined, provincial education

TABLE 4.20 EXPENDITURE REQUIREMENTS AND ALLOCATIONS: 2002-2004 (*Rs. Billion*)

Sub Sector	2001-02	2002-03	2003-04	Total
Total Budget	7.9	27.2	30.7	65.8
Actual Allocations	7.8	10.8	19.2	37.8
Actual Gap	0.1	16.4	11.5	28.0

Sources: ESRAP (2001-05)
Federal PSDP (2001-02, 2002-03 and 2003-04)
Provincial PSDP (2001-02, 2002-03 and 2003-04)

Over 60 per cent of girls don't attend primary school.

departments are not on board, sources of financing of up to half the Rs. 100 billion budget are not specified, and a shortfall of 42 per cent has already occurred in three out of four years, ESRAP is in danger of becoming another failed project aimed at improving education in the country.

SOCIOPOLITICAL ENVIRONMENT

All governments over the last half-century have sworn commitment to the eradication of illiteracy and poverty and to the provision of a range of social services. Efforts have been made and substantial resources have been committed. Yet, implementation has been unsatisfactory and the results disappointing. There is a need to investigate why this has been so. It may be that the pursuit of social service provision has not been linked with the process of social development at large. While the provision/availability of water, education, health, etc. is important, they are also components of the whole social development package. There may well be a need to begin by defining the concept of social development itself and to look at social development issues in the larger context of the development of civil society and the concept of a rights-based society, committed to the values of equality and justice.

Economists generally tend to think of social policy as the 'economic policy of social sectors' and of social sectors as merely being comprised of education, health, population, anti-poverty programmes, etc. Admittedly, improvements in aggregated individual well-being – literacy, life expectancy and freedom from poverty – are important factors in social development. Progress in such indicators highlights the fact that more people now enjoy certain minimal socially acceptable levels of living, which is indicative of the nature of the collective life of a society. However, social development does continue to be viewed from an economistic perspective.

The initial step towards a more broad-based view was taken in 1990 by the United Nations Development Program (UNDP), which pioneered the concept of the Human Development Index (HDI), a new quantitative rating of social development indicators across countries. Along with the more traditional indicators, the HDI also included criteria relevant to gender equality and political freedoms, recognizing that social relations constitute an integral part of social development.

In Pakistan too, there was an implicit recognition of the need for a holistic approach. The Social Action Programme (SAP) was launched in 1992-93 to address the country's relative weakness in basic social services, which was considered a major constraint on economic growth and development. It aimed at reversing Pakistan's historic under-investment in social development and to expand and improve the coverage, quality and effectiveness of the delivery of basic services to the people, especially to women and girls. The services targeted under SAP included primary education, basic health and population welfare, and rural water supply and sanitation.

Unlike previous programmes, SAP was not conceived as an isolated special programme. It was intended to consolidate all social sector programmes within one overarching planning and management framework as an integral part of an overall development planning process. SAP's unique feature was its cross-sectoral objectives and the underlying but explicit premise that it would simultaneously address issues in three mutually reinforcing areas: the planning process, finance, and implementation. It also proclaimed a broader focus to embrace the necessary political will to achieve the stated goals through administrative and political decentralization and community participation. The approach was innovative in that it was based on an understanding that social development was a multi-sectoral agenda, combining both social and infrastructure development.

However, SAP's conceptualization did not go far enough. It continued to be rooted in the 'economics of social sectors' perspective and explicitly perceived weaknesses of social indicators as a constraint

College girls waiting for transport.

BOX 4.4 THE CASE OF DR. Z. A.

Dr. Z. A. is a medical doctor from a large urban centre. She was posted in a rural health clinic in central Punjab. Among the many acquaintances she made was a young woman of about 25, daughter of the local *chaudhry*, and a university graduate. One evening, a young woman was brought to her clinic. She was dead. One look told the doctor that she had been strangled to death. The men accompanying the body asked the doctor to write a death certificate, specifying death on account of natural causes. She refused. The men left, leaving the body behind.

The village was abuzz with the story of the death in the *chaudhry's haveli*. It was said that she had refused to marry the man chosen for her. Her father, the *chaudhry*, had made a commitment and could not afford to lose face. Her death protected his honor. The clinic staff was petrified. They knew there was no choice but to acquiesce to the *chaudhry's* wishes.

The men returned with the *chaudhry's* son, the dead woman's brother. They were not armed. He explained to the doctor that his family had always treated her with respect. However, he asked her to provide the required death certificate if she valued her life and her honour. Cornered, she signed the required certification. The next day she left the village and sent in her resignation.

The story carries a powerful message. Provision of health care, or any social service, is not merely a matter of making a physical facility available and posting the necessary staff. The functioning of social services requires a socio-political milieu that respects such ideas as equality, value of life, rule of law, individual rights, professional ethics, etc. The provision of social services can only be ensured in the context of overall social development.

on economic growth and development. Moreover, given that the then government was responding to a crisis in the social sectors borne out of fiscal exigencies, SAP's institutional agenda was dominated largely by public finance related considerations.

A tendency to reduce social policy and social development to statistical aggregations of individual outcomes and social indicators, such as poverty, literacy and mortality rates, etc., continues to exist. Social development, however, is not merely a matter of an individual being provided with education or health; it is a matter, above all, of the nature of relations between individuals and about the nature of society itself. Social policy and social development are rooted in the vision of society and societal change as a whole. It may thus be pertinent to invert the thought process and talk about the 'sociology of economic processes'.

Economic and social development cannot be expected to proceed in a socio-political milieu where there is inequality. Governments may be enlightened enough to conform to the ideals of an educated populace, equal rights for women, rule of law, etc. They may pass legislation, sign international covenants, and allocate resources on these counts. However, if social norms continue to be determined largely by traditional feudal, tribal, and conservative religious leaders, ground realities are likely to evolve their own scripts. For example, if the education of girls or the freedom of women to choose their own life partners continue to be compromised, government measures are likely to remain on paper.

Thus, development of the social sectors demands a prerequisite: a process of social transformation. It is imperative that social norms be based on the ideals of equality and justice. So long as society remains divided into those who wield wealth in all its material and non-material forms and those who have no social, economic or political capital, development will remain stymied. Social service delivery will have to be taken out of the straightjacket of projects and schemes and placed in the context of overall social development. The imperative of social transformation is highlighted in **box 4.4**.

STATE OF PRIMARY EDUCATION

5

"The basic problem with the primary education curriculum is that the learning process does not conform to pedagogical requirements."

STATE OF PRIMARY EDUCATION

Primary education is the foundation on which all subsequent stages of education are built and the very basic ingredient for human resource development. Concern over this stage of education, particularly the issue of low enrolment and high dropout rates, has been duly expressed in all education policies and five year plans. Low enrolment and high dropout rates are unquestionably causes for concern. After all, as the latest Education For All (EFA) assessment report states, "Of the 20 million children of age group 5-9 years, about 8 million are never enrolled in school. Of those 12 million, 50% may drop out before completing primary education. At this rate, the total number of out of school children may reach 14 million by the end of 2002-03." Policy interest has always been concentrated almost exclusively on the question of enrolment. As a result, the entire emphasis of the discussion has been on 'out of school' children, while those 'in school' are assumed to be receiving the necessary education. This assumption is questionable.

A number of studies have documented the low competence and achievement level of young students. An Education Ability Test, conducted in 1990 for students of Class 4, 5 and 6, produced mean scores of 24.3 per cent, 27.5 per cent and 36.1 per cent, respectively. An Achievement Test, conducted in 1991, found average achievement scores of 34 per cent for Urdu, 21 per cent for Mathematics, and 30 per cent for Science. And the results of national surveys of educational development – covering 11 and 12-year-old primary level graduates – found that, in one case, less than 10 per cent were competent in basic reading and comprehension, and in another case, 33.5 per cent could read with comprehension, and 17.5 per cent could write a letter.

A Pakistan Psychological Foundation study in 1995 tested basic competencies of 'in school' and 'out of school' children in Pakistan on a range of variables: life skills knowledge (hygiene, health and safety), rote reading, reading with comprehension, writing from dictation, writing a letter, numeracy and arithmetic, mental arithmetic, and reading of the Holy *Qur'an*. It found between 68 to 92 per cent of 'in school' Class 5 students to possess competencies in the reading of the Holy *Qur'an*, writing from dictation, rote reading, and numeracy and arithmetic – all areas that require memorization. In variables that require comprehension, the performance was disappointing: 17 per cent of the in-school children registered competency in writing a letter, 29 per cent in life skills knowledge, 34 per cent in reading with comprehension, and 53 per cent in mental arithmetic. Interestingly, 'out of school' students performed almost as well as 'in school' students in readings with comprehension and writing a letter, and better in life skill knowledge and mental arithmetic. That 'in school' students perform better than 'out of school' students in rote reading, but are almost at par in reading with comprehension, is a telling comment of the efficacy of the quality of teaching in the school system **(see table 5.1)**. Even as late as 2003, UNICEF reports that, of

TABLE 5.1 PERCENTAGE OF OUT OF SCHOOL AND IN SCHOOL CHILDREN WITH BASIC COMPETENCIES

Competencies of Children	Classes				
	1	2	3	4	5
Life Skills Knowledge					
Out of School	4.4	2.9	11.5	10.0	39.3
In School	8.1	7.0	17.4	27.0	29.4
Rote Reading					
Out of School	4.4	11.8	23.1	45.0	78.6
In School	32.4	36.6	68.7	84.7	90.9
Reading with Comprehension					
Out of School	2.2	2.9	19.2	15.0	32.1
In School	2.7	7.0	15.9	22.9	33.5
Writing from Dictation					
Out of School	4.4	2.9	34.6	20.0	78.6
In School	0.0	23.9	59.0	81.9	88.5
Writing a Letter					
Out of School	0.0	0.0	0.0	15.0	17.9
In School	0.0	0.0	2.1	6.7	17.4
Numeracy and Arithmetic					
Out of School	2.2	11.8	30.8	40.0	78.6
In School	18.9	32.4	66.7	86.9	91.9
Mental Arithmetic					
Out of School	17.8	17.6	46.2	50.0	89.3
In School	81.1	16.9	17.9	40.8	52.7
Reading of Holy *Qur'an*					
Out of School	8.1	16.9	17.9	40.8	52.7
In School	6.7	8.8	7.7	40.0	67.9

Sources: Muhammad Pervez, Basic Competencies of Children in Pakistan, Pakistan Psychological Foundation, 1995

children who complete primary education, only 18 per cent are numerate and 7 per cent are literate to an expected level of competency.

These results suggest that the qualitative aspects of primary education are responsible for the poor quality of learning as well as the high dropout rate. The basic problem with the primary education curriculum is that the learning process does not conform to pedagogical requirements. Another serious problem is the management structure of the primary education tier. Given these problems, allocating more resources towards increasing enrolment is not likely to be productive, unless measures are simultaneously taken to improve the quality of teaching, particularly the content of the curriculum and the management structure. This chapter explores these two issues in detail.

LEARNING DYNAMICS OF YOUNG CHILDREN

The pedagogical approach requires that school and teaching practices enable young students to address their world with imagination, creativity and purpose. There is a need to understand children and their learning dynamics to determine how that learning is to be structured. As a young child grows from infancy, s/he learns through a sense of wonder, questioning and exploring to arrive at conclusions. These early years

The pedagogical approach requires that school and teaching practices enable young students to address their world with imagination, creativity and purpose.

provide the basis for language development, physical dexterity, social understanding, and emotional development. It is marked by ardent curiosity and fertile imagination and by the desire to touch and feel. The progression from intuitive to explicit knowledge takes place in play. Learning is an end in itself, irrespective of the nature of the content learned.

Meaningful learning takes place when students feel a genuine interest and curiosity about the concepts they encounter and approach learning with confidence and delight in their abilities. How students learn is as important as what they learn.

"What makes the wind blow?" A five-year-old child was asked.
"The trees," replied the child.
"How do you know?"
"I saw them waving their arms."
"How does that make the wind blow?"
The child waved her hands about. *"Like this. Only they are bigger. And there are lots of trees."*
"Then, what makes the wind blow on the ocean?"
"The waves." The child moved her body in the motions of a wave.
"And on the mountain tops?"
"The clouds...?"

Beliefs of five-year-olds, while not 'correct' by adult criterion, are not 'incorrect' from the viewpoint of a learning process. Children's perceptions are entirely sensible and coherent within the framework of the child's way of knowing and learning. Classifying them as 'right' or 'wrong' is not relevant. In a rational learning process, children arrive at answers by themselves.

Learning starts with objects and issues within a child's immediate audio-visual range, as children are constantly trying to construct meaning

Learning can be fun!

from the complexity of their immediate environment. The early learning process focuses on real situations and primary concepts of young learners to enable them to explore *their* world, ask questions and find answers. Children need to see the connections between their own lives and the content of learning and to construct their own meaning to give expression to their emotions. They need the opportunity to read and explore texts that have personal and social significance for them. Story telling, colour, images, and music enrich and delight children and bring out their innate sense of discovery and creativity. Drawing and colouring, singing and moving, and listening and performing are integral to children's learning process. In their play, they construct their own make-believe world. In their art and what they draw and colour, they represent their perceptions and realities.

In this respect, a crucial task of teaching methods for young learners is to evoke their interest and enthusiasm in learning. When provided with interesting and challenging environments, they are drawn to levels of activity that further their own self development. In this approach, 'learning how to learn' becomes more important than knowledge itself, and learning processes more important than results.

THE OFFICIAL APPROACH TO LEARING

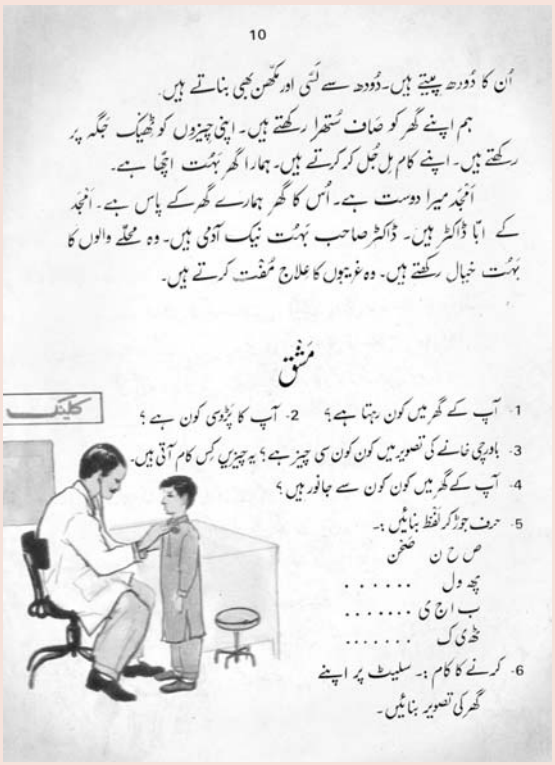
Pakistan's public primary education curricula, syllabi and textbooks are a far cry from such a pedagogical process. The efforts at policy making and reform in the education sector have been singular in their lack of understanding of the learning dynamics of young children and tend to make them passive consumers of rigid curricula, pre-determined information, and boring textbooks.

Prescribed textbooks contain material such as 'Our Home', 'Our School', 'Respect for Parents', 'Good Girls', 'Martyr', and 'Freedom or Death' **(see boxes 5.1 to 5.6)**. Material such as 'Our Home' and 'Our School' narrates only what is the ideal and does not encourage children to explore and ask questions about their own home or school. Story telling is one of the joys of childhood and an important tool of learning. However, sermonizing takes precedence over young learners' own interests and moralizing subordinates the innocent and playful happenings, activities and pleasures of childhood that constitute the natural process of learning in children. 'Respect for Parents' and 'Good Girls' are not about normal children from the neighbourhood who play, are naughty and take delight in making their own discoveries. Instead, the stories are exclusively about what children ought to be. Reading about 'Freedom or Death' (based upon Maulana Mohammad Ali Jauhar) or 'Martyr' (based upon Raja Sarwar Shaheed), cannot be expected to stimulate the interest of any child. Prescribed for eight year-old children, the very titles epitomize the absence of the element of pedagogy. Children's actual role models are from among their own (nuclear and extended) family, neighbours, teachers, older schoolmates, the postman, etc. They cannot be expected to relate to personalities from history that are obscure individuals in their world. It is not surprising that children tend to lose interest. The content of the textbooks taught in public primary schools may well be an important factor in absenteeism and even dropping out.

Pakistan's public primary education curricula, syllabi and textbooks are a far cry from such a pedagogical process.

These textbooks are the product of a curriculum designed in

BOX 5.1 *HAMARA GHAR*



10

اُن کا دُودھ پیتے ہیں۔ دُودھ سے لسّی اور مکھن بھی بناتے ہیں۔

ہم اپنے گھر کو صاف سُتھرا رکھتے ہیں۔ اپنی چیزوں کو ٹھیک جگہ پر رکھتے ہیں۔ اپنے کام مِل جُل کر کرتے ہیں۔ ہمارا گھر بہُت اچّھا ہے۔

اَمجد میرا دوست ہے۔ اُس کا گھر ہمارے گھر کے پاس ہے۔ اَمجد کے ابّا ڈاکٹر ہیں۔ ڈاکٹر صاحب بہُت نیک آدمی ہیں۔ وہ محلّے والوں کا بہُت خیال رکھتے ہیں۔ وہ غریبوں کا علاج مُفت کرتے ہیں۔

مشق

1. آپ کے گھر میں کون رہتا ہے؟
2. آپ کا پڑوسی کون ہے؟
3. باورچی خانے کی تصویر میں کون کون سی چیز ہے؟ یہ چیزیں کس کام آتی ہیں۔
4. آپ کے گھر میں کون کون سے جانور ہیں؟
5. حرف جوڑ کر لفظ بنائیں:۔

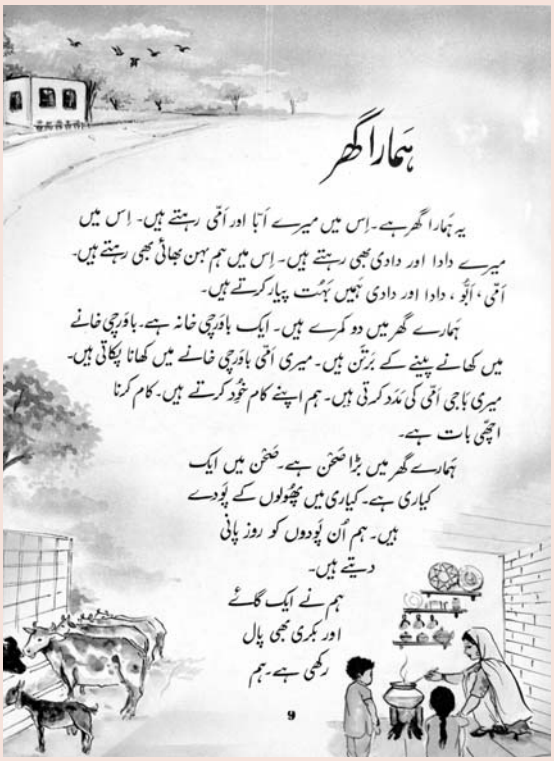
ص ح ن صحن

چ ھ ول .....

ب ا ج ی .....

ڈ ی ک .....

6. کرنے کا کام:۔ سلیٹ پر اپنے گھر کی تصویر بنائیں۔



ہمارا گھر

یہ ہمارا گھر ہے۔ اِس میں میرے ابّا اور امّی رہتے ہیں۔ اِس میں میرے دادا اور دادی بھی رہتے ہیں۔ اِس میں ہم بہن بھائی بھی رہتے ہیں۔ امّی، ابّو، دادا اور دادی ہمیں بہُت پیار کرتے ہیں۔

ہمارے گھر میں دو کمرے ہیں۔ ایک باورچی خانہ ہے۔ باورچی خانے میں کھانے پینے کے برتن ہیں۔ میری امّی باورچی خانے میں کھانا پکاتی ہیں۔ میری باجی امّی کی مدد کرتی ہیں۔ ہم اپنے کام خُود کرتے ہیں۔ کام کرنا اچّھی بات ہے۔

ہمارے گھر میں بڑا صحن ہے۔ صحن میں ایک کیاری ہے۔ کیاری میں پھُولوں کے پودے ہیں۔ ہم اُن پودوں کو روز پانی دیتے ہیں۔

ہم نے ایک گائے اور بکری بھی پال رکھی ہے۔ ہم

9

Our Home

This is our house. My father and mother live here. My grandfather and grandmother also live here. Us brothers and sisters also live here. Mother, father, grandfather and grandmother love us very much.

There are two rooms in our house. One is the kitchen. In the kitchen are the cooking utensils. My mother cooks in the kitchen. My elder sister helps mother in cooking. We do all our own work. It is good to do work.

There is a big courtyard in our house. In the courtyard there is a flowerbed. There are flowering plants in the flowerbed. We water these plants every day.

We also keep a cow and a goat. We get milk from them. We also make *lassi* and butter from the milk.

We keep our home neat and clean. We keep our things in their place. We work together. Our house is very nice.

Amjad is my friend. His house is close to our house. Amjad's father is a doctor. He is a very good man. He takes good care of the neighbours. He treats poor patients free of charge.

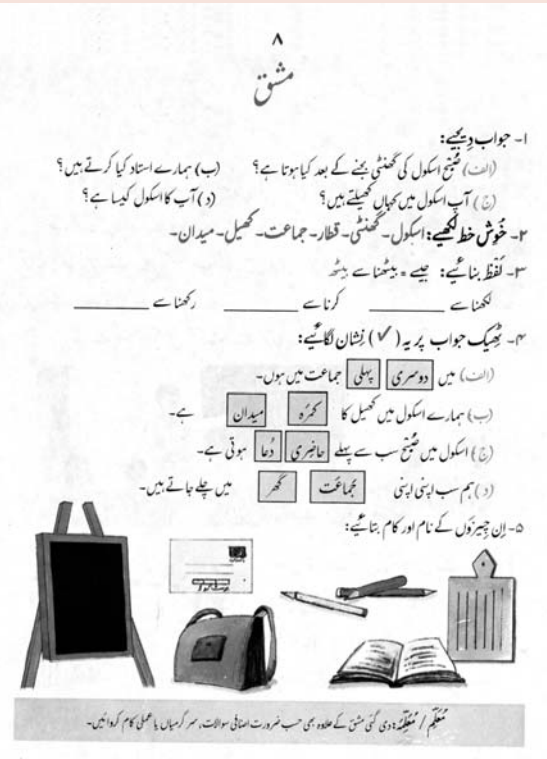
Exercise:

1. Who lives in your house?
2. Who is your neighbour?
3. What things can you see in the picture of the kitchen? What are these things used for?
4. What animals do you have in your house?
5. **Join alphabets to make words:**
6. **Activity:**

   Make a picture of your house on your slate.

Source: *Meri Kitab, Pehli Jamat Kay Liay* [(Urdu) My Book, for Class 1], Lahore: Punjab Textbook Board, 1996

BOX 5.2 HAMARA SCHOOL



٨

مشق

۱- جواب دیجیے:

(الف) صُبح اسکول کی گھنٹی بجنے کے بعد کیا ہوتا ہے؟ (ب) ہمارے استاد کیا کرتے ہیں؟

(ج) آپ اسکول میں کہاں کھیلتے ہیں؟ (د) آپ کا اسکول کیسا ہے؟

۲- خوش خط لکھیے: اسکول۔ گھنٹی۔ قطار۔ جماعت۔ کھیل۔ میدان۔

۳- لفظ بنائیے: جیسے ۔ بیٹھنا سے بیٹھ

لکھنا سے _____ کرنا سے _____ رکھنا سے _____

۴- ٹھیک جواب پر یہ (✓) نشان لگائیے:

(الف) میں [دوسری] [پہلی] جماعت میں ہوں۔

(ب) ہمارے اسکول میں کھیل کا [کمرہ] [میدان] ہے۔

(ج) اسکول میں صُبح سب سے پہلے [حاضری] [دُعا] ہوتی ہے۔

(د) ہم سب اپنی اپنی [جماعت] [گھر] میں چلے جاتے ہیں۔

۵- اِن چیزوں کے نام اور کام بتائیے:

مُعلّم / مُعلّمہ: دی گئی مشق کے علاوہ بھی حسب ضرورت املائی سوالات، سرگرمیاں یا عملی کام کروائیں۔

۷

علم سے محبت کرو۔

ہمارا اسکول

یہ ہمارا اسکول ہے۔ صُبح اسکول کی گھنٹی بجتی ہے۔ ہم سب قطار میں کھڑے ہوجاتے ہیں۔ دُعا ہوتی ہے۔ قومی ترانہ پڑھا جاتا ہے۔ پھر ہم سب قطار میں اپنی اپنی جماعت میں چلے جاتے ہیں۔

ہمارے اُستاد ہمیں محنت سے پڑھاتے ہیں۔ اچھی اچھی باتیں بتاتے ہیں۔

ہمارا اسکول

اسکول کا ایک کھیل کا میدان ہے۔ ہم شام کو یہاں کھیلتے ہیں۔ ہم نے میدان کے چاروں طرف پودے لگائے ہیں۔ ہم اُن کی دیکھ بھال کرتے ہیں۔ ہمارا اسکول بہت پیارا ہے۔

مُعلّم / مُعلّمہ: بچوں کو بولنے، سننے اور بنیادی لسانی مہارتوں کے حصول کے لیے مناسب طریقۂ تدریس اور معاونات استعمال کریں۔

Our School

This is our school. In the morning the school bell rings. We all stand in lines. We say prayers. We sing the national anthem. Then we go in lines to our classrooms.

Our teacher teaches us with great diligence. He tells us good things.

There is a school playground. We play here in the evenings. We have planted plants all around the ground. We look after these plants. We have a very nice school.

Exercise

1. Give answers:
   - What happens after the school bell rings in the morning?
   - What do our teachers do?
   - Where do you play in school?
   - How is your school?

2. Write in good handwriting:
   School, bell, line, class, play, ground

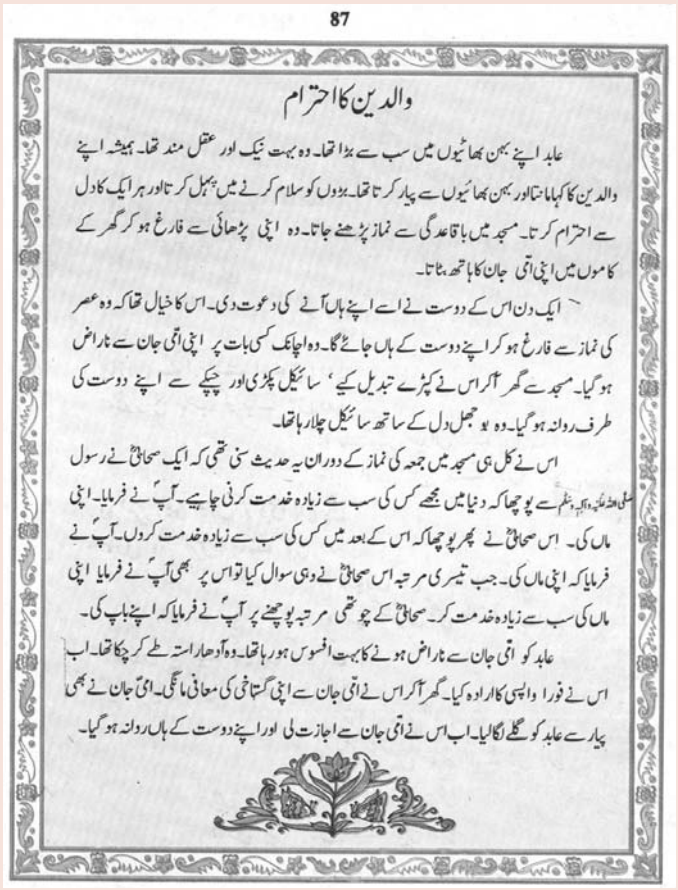
3. Make words:

4. Put a tick on the right answers:

	1	2
I study in grade		
Our school has a	*playground*	*playroom*
The first thing that happens in school is	*attendance*	*prayer*
We all go to our	*classrooms*	*homes*

Source: *Darsi Kitab 1* [(Urdu) Textbook 1], Jamshooro: Sindh Textbook Board, 2003

BOX 5.3 WALIDAIN KAA EHTERAM



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والدین کا احترام

عابد اپنے بہن بھائیوں میں سب سے بڑا تھا۔ وہ بہت نیک اور عقل مند تھا۔ ہمیشہ اپنے والدین کا کہا مانتا اور بہن بھائیوں سے پیار کرتا تھا۔ بڑوں کو سلام کرنے میں پہل کرتا اور ہر ایک کا دل سے احترام کرتا۔ مسجد میں باقاعدگی سے نماز پڑھنے جاتا۔ وہ اپنی پڑھائی سے فارغ ہو کر گھر کے کاموں میں اپنی امّی جان کا ہاتھ بٹاتا۔

ایک دن اس کے دوست نے اسے اپنے ہاں آنے کی دعوت دی۔ اس کا خیال تھا کہ وہ عصر کی نماز سے فارغ ہو کر اپنے دوست کے ہاں جائے گا۔ وہ اچانک کسی بات پر اپنی امّی جان سے ناراض ہو گیا۔ مسجد سے گھر آ کر اس نے کپڑے تبدیل کیے، سائیکل پکڑی اور چپکے سے اپنے دوست کی طرف روانہ ہو گیا۔ وہ بوجھل دل کے ساتھ سائیکل چلا رہا تھا۔

اس نے کل ہی مسجد میں جمعہ کی نماز کے دوران یہ حدیث سنی تھی کہ ایک صحابیؓ نے رسول صلی اللہ علیہ وآلہ وسلم سے پوچھا کہ دنیا میں مجھے کس کی سب سے زیادہ خدمت کرنی چاہیے۔ آپؐ نے فرمایا۔ اپنی ماں کی۔ اس صحابیؓ نے پھر پوچھا کہ اس کے بعد میں کس کی سب سے زیادہ خدمت کروں۔ آپؐ نے فرمایا کہ اپنی ماں کی۔ جب تیسری مرتبہ اس صحابیؓ نے وہی سوال کیا تو اس پر بھی آپؐ نے فرمایا اپنی ماں کی سب سے زیادہ خدمت کر۔ صحابیؓ کے چوتھی مرتبہ پوچھنے پر آپؐ نے فرمایا کہ اپنے باپ کی۔

عابد کو امّی جان سے ناراض ہونے کا بہت افسوس ہو رہا تھا۔ وہ آدھا راستہ طے کر چکا تھا۔ اب اس نے فوراً واپسی کا ارادہ کیا۔ گھر آ کر اس نے امّی جان سے اپنی گستاخی کی معافی مانگی۔ امّی جان نے بھی پیار سے عابد کو گلے لگا لیا۔ اب اس نے امّی جان سے اجازت لی اور اپنے دوست کے ہاں روانہ ہو گیا۔

Respect for parents

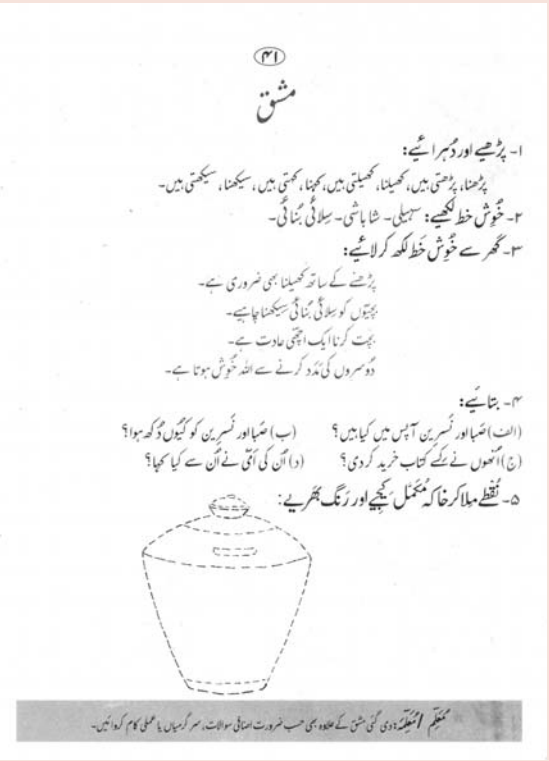
Abid was the eldest among all his brothers and sisters. He was a very good and intelligent person. He always obeyed his parents and loved his brothers and sisters. He was always the first to greet his elders and respected everyone from the depth of his heart. He regularly went to the mosque for prayers. Once he was through with school, he would help his mother in household chores.

One day his friend invited him to his house. He had thought he would go to his friend's house after the *asar* prayers. Suddenly for some reason he got upset with his mother. Coming home from the mosque he changed his clothes, took his bicycle and quietly went off to his friend's house. He rode his bicycle with a heavy heart.

It was only yesterday that he had heard this *hadith* in the mosque after *juma* prayers. A companion (ra) had asked Prophet Muhammad (SA) whom he should serve the most in the world. The Prophet had replied, “Your mother”. The companion then asked. “And after this whom should I serve the most”. The Prophet had replied. “Your mother”. When the companion asked the same question a third time, the Prophet said, “Serve your mother the most”. When the companion asked the question for the fourth time, the Prophet said, “Your father”.

Abid was feeling very bad for having been upset with his mother. He was already half way to his friend's house. He decided to turn back. He came home and apologized to his mother for his disrespect. His mother lovingly hugged him. He now took permission from his mother and went off to his friend's house.

Source: *Meri Kitab, Teesri Jamat Key Liay* [(Urdu) My Book, for Class 3], Lahore: Punjab Textbook Boards, 2003



(۴۰)

استاد کا ادب کرو۔

اچھّی بچّیاں

صَبا ایک اچھّی بچّی ہے۔ اُس کی سہیلی کا نام نُسرین ہے۔ دونوں میں بہت دوستی ہے۔ وہ مِل کر پڑھتی ہیں۔ مِل کر کھیلتی ہیں۔ دونوں سِلائی بُنائی بھی سیکھتی ہیں۔ اَب وہ گڑیا بھی بنا لیتی ہیں۔ وہ دونوں ایک ساتھ روزانہ اسکول جاتی ہیں۔

اُن کی جماعت میں ایک غریب بچّی پڑھتی ہے۔ ایک بار اُس کے پاس کتاب نہیں تھی۔ وہ بہت پریشان تھی۔ صَبا اور نُسرین نے دیکھا تو اُنہیں بڑا دُکھ ہوا۔ دونوں نے پیسے جمع کر کے اُسے کتاب لا کر دے دی۔

صَبا اور نُسرین کے گھر والوں نے جب یہ سُنا تو وہ بہت خُوش ہوئے۔ اُنھوں نے دونوں کو شاباشی دی، پیار کیا۔ کہا: دُوسروں کی مَدد کرنا اچھّی بات ہے۔ اللہ تعالیٰ ایسے بچّوں سے خُوش ہوتا ہے۔

مُعلّم اُمنگ: بچوں کو خود مقاصد سیکھنے اور بنیادی لسانی مہارتوں کے حصول کے لیے مناسب طریقہ تدریس اور معاونات استعمال کریں۔

(۴۱)

مشق

۱- پڑھیے اور دُہرائیے:

پڑھنا، پڑھتی ہیں، کھیلنا، کھیلتی ہیں، کہنا، کہتی ہیں، سیکھنا، سیکھتی ہیں۔

۲- خُوش خط لکھیے: سہیلی۔ شاباشی۔ سِلائی بُنائی۔

۳- گھر سے خُوش خط لکھ کر لائیے:

پڑھنے کے ساتھ کھیلنا بھی ضروری ہے۔
بچّیوں کو سِلائی بُنائی سیکھنا چاہیے۔
بچت کرنا ایک اچھی عادت ہے۔
دُوسروں کی مَدد کرنے سے اللہ خُوش ہوتا ہے۔

۴- بتائیے:

(الف) صَبا اور نُسرین آپس میں کیا ہیں؟ (ب) صَبا اور نُسرین کو کیوں دُکھ ہوا؟
(ج) اُنھوں نے کیا کتاب خرید کر دی؟ (د) اُن کی امّی نے اُن سے کیا کہا؟

۵- نُقطے ملا کر خاکہ مُکمّل کیجیے اور رنگ بھریے:

مُعلّم اُمنگ: دی گئی مشق کے علاوہ بھی حسب ضرورت اضافی سوالات، سرگرمیاں یا عملی کام کروائیں۔

Good Girls

Saba is a good girl. Her friend's name is Nasreen. They are great friends. They study together. They play together. They also learn stitching and knitting. They can now make a doll. They go to school together.

A poor girl also studies in their class. Once she did not have a book. She was very upset. When Saba and Nasreen saw her they felt very bad for her. Both collected money and bought her the book.

When Saba and Nasreen's family heard this they were very happy. They praised the girls and hugged them. They said, " It is a very good thing to help others. God is very happy with such children."

Exercise

1. Read and repeat
   Reading, read, playing, play, saying, says, learning, learns

2. Write in good handwriting

Write in good handwriting at home:

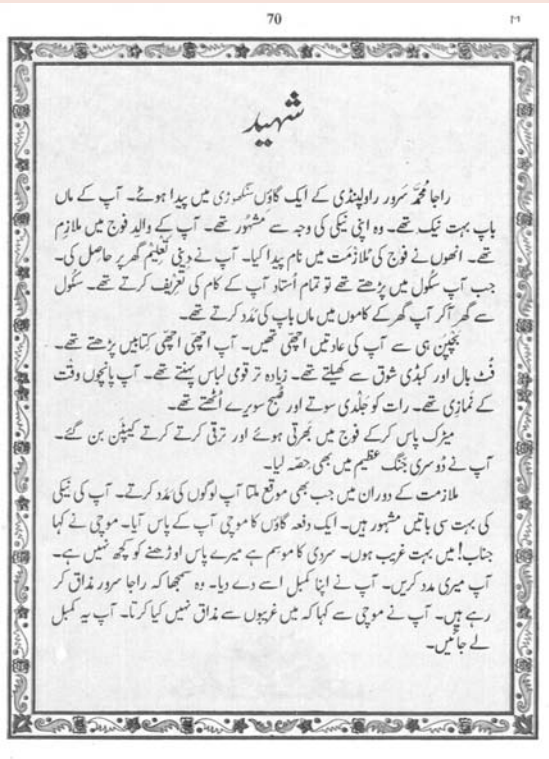
- It is important to study and play
- Girls should know stitching and knitting
- Saving is a good habit
- God is happy with those who help others

Answer:

1. Who are Saba and Nasreen for each other?
2. Why did Saba and Nasreen feel bad?
3. For whom did they buy the book?
4. What did their mother say to them?

Source: *Darsi Kitab 1* [(Urdu) Textbook 1], Jamshooro: Sindh Textbook Board, 2003

BOX 5.5 SHAHEED



Martyr

Raja Mohammad Sarwar was born in a village, called Sanghori, in Rawalpindi. His parents were very good people. They were known for their goodness. His father was employed in the armed forces. He made a name for himself in the employment of the armed forces. Raja Mohammad Sarwar received religious education at home. When he was studying in school all teachers used to praise his work. When he came home from school he helped his parents in household chores.

From childhood he had good habits. He would read good books. He enjoyed playing football and kabaddi. He wore the national dress most of the time. He said his five times prayers. He slept early at night and woke up early in the morning.

After passing his matriculation he was recruited in the army and continued progressing until he became captain. He also participated in the second world war.

During his employment he helped people whenever he had the opportunity. There are lots of stories about his goodness. Once the village cobbler came to him. He said, "Sir, I am very poor. It is cold and I don't have any warm covering. Please help me". Raja Sarwar gave him his blanket. He thought Raja Sarwar was joking. Raja Sarwar said, “I never joke with poor people. Please take this blanket”.

Source: *Meri Kitab, Teesri Jamat Key Liay* [(Urdu) My Book, for Class 3], Lahore: Punjab Textbook Boards, 2003

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آزادی یا موت

مولانا محمد علی جوہر نے اِبتدائی تعلیم بریلی میں پائی۔ اعلیٰ تعلیم کے لیے وہ علی گڑھ گئے جو مُسلمانوں کا سب سے بڑا کالج تھا۔ علی گڑھ نے اُن کی خوبیوں کو اور چمکایا۔ وہاں سے وہ پڑھنے کے لیے اِنگلستان گئے اور بی۔اے کی ڈگری حاصل کی۔ وطن واپس آکر اُنھوں نے "کامریڈ" نام کا ایک انگریزی اخبار

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نکالا۔ اِس اخبار سے وہ تمام ملک میں مشہور ہوگئے۔ بعد میں اُنھوں نے ایک اور اُردو اخبار "ہمدرد" بھی نکالا۔ محمد علی جوہر بڑے مُقرّر تھے۔ وہ دُرست اور صحیح انگریزی بولتے اور لکھتے تھے۔

محمد علی جوہر بہت جوشیلے آدمی تھے۔ اُن کے سینے میں قوم کا دَرد تھا۔ وہ بچپن ہی سے بہت ذہین تھے۔ وہ مُسلمانوں کے سچّے خیر خواہ تھے۔ اُن کی خاطر اُنھیں کئی بار جیل جانا پڑا۔ اُن کے اخبار بند کردیے گئے۔ اُن کا پریس ضبط کرلیا گیا۔ لیکن انھوں نے ہمّت نہ ہاری۔ بار بار جیل جانے اور مُسلسل محنت کرنے سے اُن کی صحّت خراب ہوگئی۔ وہ وطن کی آزادی کی خاطر اِنگلستان گئے تو اُن کی صحّت جواب دے چکی تھی۔ ملک کی آزادی کے لیے انھوں نے وہاں نہایت زور دار تقریر کی اور کہا: "میں غلام مُلک میں جانے کے بجائے ایک آزاد مُلک میں مَرنا پسند کروں گا۔" اِتّفاق دیکھیے کہ اُن کی یہ آرزُو بھی پوری ہوئی۔ ان کا اِنتقال ۴ جنوری ۱۹۳۱ء کو اِنگلستان میں ہُوا اور اُن کی خواہش کے مُطابق اُنھیں بَیتُ المُقدّس میں دَفن کیا گیا۔

Freedom or Death

Maulana Mohammad Ali Jauhar received his early education in Bareily. For higher education he went to the Aligarh Muslim University, the largest college of Muslims in India. Aligarh enhanced his qualities. From there he went to the UK to study and obtained the Bachelor of Arts degree. After he came back to his home country he published an English newspaper called 'Comrade'. With this newspaper he became famous all over the country. Afterwards he also published an Urdu newspaper called 'Hamdard'. Mohammad Ali Jauhar was a great orator. He spoke and wrote perfect English.

Mohammad Ali Jauhar was a very passionate person and deeply felt the pains of his nation. Since childhood he was very intelligent. He was a true well-wisher of Muslims. For their sake he went to jail several times. The publication of his newspaper was stopped and his press was confiscated. But he never lost courage. As a result of going to jail again and again and continuous hard work his health deteriorated. When he went to England to fight for the freedom of his country his health gave way completely. Making a very powerful speech for the freedom of his country there, he said, "Instead of going to a subjugated country I would prefer to die in a free country." As it happened, this wish of his was granted. He died in England on 4th January 1931 and, in accordance with his wishes, he was buried in Bait-ul-Maqdas.

Source: *Darsi Kitab 3* [(Urdu) Textbook 3], Jamshooro: Sindh Textbook Board, 2003

These textbooks are the product of a curriculum designed in accordance with the official education policy. National educational objectives are based on a conspicuous lack of understanding of the pedagogical and emotional requirements of young learners. A striking and common feature of all educational policies is the emphasis on the preservation and inculcation of national 'ideology' as the overarching educational aim; this renders the primary education process an exercise in indoctrination rather than pedagogy. The educational policy framework has led to a curriculum design that is narrow and didactic, and which leads to learning by rote and rigid classroom control. The function of education has been reduced to what policy makers *think* young children ought to know, instead of promoting the spirit of inquiry, which is the natural process of learning. The transformation of the nation's children into patriotic and religious individuals has been pursued at the cost of developing their innate skills and their ability to reflect, analyze and deduce rationally. Bereft of a reasonable level of competency in the populace, it is questionable whether even the aim of inculcating its 'ideology' can be adequately achieved by the state within the current education set up.

An example of the way in which national educational policy objectives inform the curriculum is provided in the following introduction to the current *Urdu Curriculum for Grades 4-5*, i.e., for children under 11 years of age:

National Objectives of Education

The basic aim of the education system of every nation is to produce individuals who are beneficial and efficacious in attaining and executing national ideals, values and traditions. The content of educational material and the total programme of schools are, therefore, related to these national objectives. But it is in the teaching of language that these educational objectives can be presented most prominently and clearly. It is particularly in the first two grades that more time is spent on teaching language and the basic concepts of other disciplines are also instilled by the use of language. Therefore, it is absolutely essential that development of textbooks, selection of content of learning, topics for teaching, debate and discussion and the teaching methodology reflect the national objectives everywhere. Therefore:

1. *Students should be made aware that they are members of the Muslim nation and, that is why according to Islamic values they must aim to become honest, virtuous, patriotic, serving humanity and daring mujahids.*
2. *Students should be made to have love and respect for all Pakistanis.*
3. *Students should be made aware of respect and ceremony regarding the national anthem and the national flag and made to follow these.*
4. *Students should be made to respect national and regional languages.*
5. *Students should be encouraged to propagate products and national dress of Pakistan.*
6. *Students should be made to study national literature and culture.*

The educational policy framework has led to a curriculum design that is narrow and didactic, and which leads to learning by rote and rigid classroom control.

7. *Students should be made to inculcate respect for labour, simple living, self-confidence and hardy living.*
8. *Students should be made to have feelings of sacrifice for the protection of the territory, unity and traditions of Pakistan.*
9. *The topics for speeches should be those in which students express their willingness to dedicate their lives to achieving high ideals and, in this way, their attention remains fixed upon religious and national needs.*
10. *Ceremonies should be arranged on important national festivals in which pledge be taken from children according to the occasion and their adherence to their pledge be emphasized*
11. *The ideology of Pakistan should be presented as the absolute truth and never made subject to dispute or debate.*
12. *There should be no concept of distinction between the worldly and religious way of life, instead learning material should be produced according to the Islamic point of view.*

Three comments are in order. First, none of the 12 points in the statement of objectives can be considered relevant from the point of view of the child's immediate environment and, as such, from a pedagogical perspective. Second, there is no reference to the development of learning abilities – cognitive, affective and psychomotor skills – in children. And third, the operative phrase throughout is 'should be made to', which clearly leaves little room for independent inquiry and discovery, an essential element of learning, and betrays an authoritarian mindset on the part of the policy makers.

This last point is corroborated by the fact that the Federal Supervision of Curricula Textbooks, Maintenance of Standards of Education Act, 1976, entrusts the task of preparing schemes of studies, curricula, and manuscripts of textbooks exclusively to the Curriculum Wing of the Federal Ministry of Education. The Curriculum Wing has also been empowered to approve textbooks and to "direct any person or agency in writing to delete, amend or withdraw any portion, or the whole, of the curriculum, textbook or reference material prescribed for any class of an institution". Failure to carry out the directive is punishable with imprisonment for a term extending to one year. Clearly, the law does not leave much room for intellectual autonomy of school heads and teachers.

The introduction to the *National Curriculum for Social Studies for Classes 1-5*, i.e., for children under 11 years of age, states: "The subject of Social Studies is offered as a compulsory subject in the scheme of studies at elementary level of education in Pakistan … the contents are suggested in the cognitive, affective and psychomotor domains for each target group … The concept of the ideology of Pakistan is rehearsed and outlined, aiming at behavioral and attitudinal change … the curriculum is modernized in such a way that it encourages the students to be critical of things in the context of Islamic heritage, attracting the personal and social life. It would inculcate among students a sense of gratitude towards Almighty *Allah*, the feeling of national integrity, cohesion and self-reliance patronizing the behaviour pattern of national character, it will develop a positive attitude towards the study of Social Studies."

An examination of the list of objectives to be achieved by developing cognitive, affective and psychomotor skills as identified in this Curriculum, however, betrays a lack of understanding of the meaning and essence of

these terms. For general definitions of the terms 'cognitive', 'affective' and 'psychomotor' development see **box 5.7**. There are two kinds of problems with the classification of objectives for cognitive, affective and psychomotor development. One problem is that of misclassification, where an objective for one skill is specified as that for another skill.

For example, 'To develop an understanding of directions right and left', classified as an objective for developing Cognitive skills, is actually more relevant to the development of Psychomotor skills. 'Selecting truth from falsehood', classified as an objective for developing Psychomotor skills, is actually more relevant to the development of Cognitive skills. 'Reading signs symbols and traffic lights', classified as an objective for developing Affective skills, is more relevant for developing Cognitive skills. Further, 'Talking with elder',' "Skill of showing respect to the elders and affection to the young', 'Helping the patients when they are bed ridden and the needy persons', and 'To celebrate important days', classified as objectives for developing Psychomotor skills, are all more relevant to the development of Affective skills.

The other problem is that specified objectives have no relevance to the development of any of the three skills outlined in the Curriculum. These are listed separately for each of the skills:

Cognitive skills

- *To familiarize with the national days and important personalities.*
- *To understand the importance of census.*
- *Familiarize with the past personalities of Islam.*
- *Develop recognition of the importance of those persons who work for the nation and humanity.*
- *Develop understanding of the importance of agriculture to the economy of the district.*

BOX 5.7 THREE ASPECTS OF CHILD DEVELOPMENT

Cognitive Development

Put simply, cognition is the faculty of knowing – the making and using of knowledge. It includes faculties of attentiveness, information processing, intuition, memory, skills and many others. Cognitive development psychology examines how the mind organizes experience into structured knowledge and how knowledge structures in turn organize and reorganize the mind from infancy through adulthood – an area that is integrated with educational and curriculum development. As the child develops cognitively, s/he can move beyond the observed to the inferred, beyond perception to conception, beyond concrete to abstract, and beyond intuitive knowing to conscious reflection. The child becomes aware that events can have internal and symbolic meaning beyond their external and literal significance. As the child invests events with meaning, s/he can go beyond context to appreciate formal similarities, patterns and processes. As the child reflects on patterns and processes, s/he can reflect on systems, including the social system.

Affective (Emotional and Social) Development

The development of emotional understanding parallels the cognitive capacities of the child. It involves the ability to produce and respond appropriately to emotional expressions. It involves the development of internal states, i.e., feelings of happiness, joy, love, anger, fury, hate, etc. and their outward expression. It also involves development of personal worth, which is determined by a sense of competence and place (in one's family, peer group, and community). Self-concept, the social self, cooperation and morality also fall under this aspect of development, as do social or socializing skills such as social communication, friendships, thoughtfulness, sharing, manners, and controlling impulses, among others.

Psychomotor Development

Psychomotor skills refer to the coordination between the brain and movement of the body; i.e., any muscular activity under the voluntary control of the brain directed towards a concious objective. They include gross and fine motor skills, which range from the ability to engage in various age appropriate play activities to skills in manipulating objects (writing, doing puzzles, drawing, using scissors, etc.).

- *To develop an idea of the implications of over population/under population.*
- *Enhance learning about the lives and achievements of the distinguished persons of the province who worked for the betterment of the people of Pakistan.*
- *Develop understanding of Hindu Muslim differences and need for Pakistan.*
- *To get acquainted with the personalities who worked for the independence of Pakistan.*
- *To enhance understanding of the forces working against Pakistan.*
- *Create awareness about the freedom movement.*
- *Promote realization about the Kashmir issue and Indian role.*
- *Finalize about the institutions and organizations concerned with the welfare of society.*
- *Develop clear comprehension of the nature, causes, and remedies of major social problems in Pakistan.*
- *Familiarize with the obstacles in the way of national and their solutions.*
- *Create awareness about the great personalities who contributed towards the making of Pakistan.*

Affective skills

- *Safety and security for private on the public property.*
- *Develop a sense of working hard and honestly to become a beneficial personality for the fellow beings.*
- *Develop a sense of respect and recognition towards important personalities.*
- *Develop the sense of recognition and respect for the great personalities of the past.*
- *Love for the ideology of Pakistan.*
- *Develop the sense of preservation of ideology, integrity and security of Pakistan.*
- *Enhance a sense of respect for cooperation and preservation of the ideology of Pakistan.*
- *Develop a sense of appreciation for the Muslim heroes.*

Abandoned classroom

- *Develop the feelings of development of the country through making better utilization of climate.*
- *Enhance a sense of respect and reverence for the Muslim heroes.*

Psychomotor skills

- *To clean family and school transport.*
- *To develop the skills of listening to the stories of great personalities.*
- *Listening to the radio and watching television.*
- *Making map and flag.*
- *Helping needy people.*

There appears to be an excessive preoccupation with 'great' personalities, whose recognition and reverence is specified as an objective for Cognitive, Affective and Psychomotor skills.

Furthermore, to include the following as serving the objectives of developing cognitive skills in children below 11 years of age is difficult to comprehend:

- *To understand the importance of census.*
- *To develop an idea of the implications of over population/under population.*
- *Develop understanding of Hindu Muslim differences and need for Pakistan.*
- *To enhance understanding of the forces working against Pakistan.*
- *Promote realization about the Kashmir issue and Indian role.*
- *Develop clear comprehension of the nature, causes, and remedies of major social problems in Pakistan.*
- *Familiarize with the obstacles in the way of national and their solution.*

Even more difficult to understand is the requirement for the content of teaching to include 'Relationship between the various administrative units of the district' and 'Introduction to the devolution plan' to eight-year-old children in Class 3 for development of cognitive skills. Equally inexplicable is the Learning Outcome for Affective skills for the same class: "Write some sentences on how better relations between provinces/area and center can develop with reference to national cohesion and state integrity".

The curriculum framework has little room for the intrinsic interests of children, making the content of learning alien to their process of understanding. The only way to 'learn' is by rote and teachers are expected to require students to give answers, which are 'acceptable' within the curriculum framework. Clearly, this process does not qualify as pedagogy.

Children learn best when the content of learning is appropriate to their development level, relevant to their immediate interests and presented in a manner that they find enjoyable.

THE PEDAGOGICAL APPROACH TO LEARNING

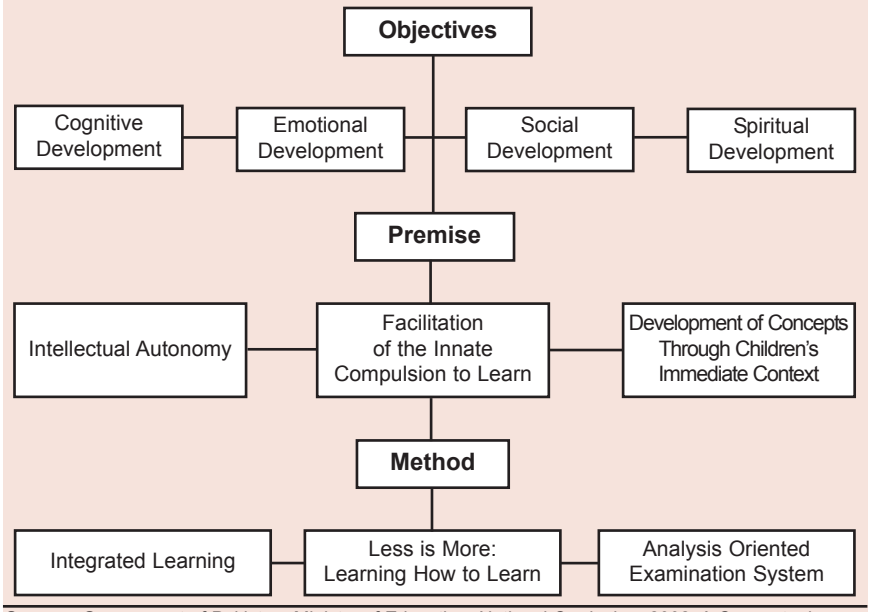
Children learn best when the content of learning is appropriate to their development level, relevant to their immediate interests and presented in a manner that they find enjoyable. If the syllabus and teaching materials are stimulating, children learn freely and without the use of coercion. These precepts have been recognized by the government and incorporated in the Conceptual Framework of the National Curriculum 2000, prepared by the National Committee on

Education (NCE) of the Federal Ministry of Education with participative contribution from a large body of education experts from civil society. A remarkably enlightened document, it is also frank in admitting that:

> *Pakistan's educational system has so far been based on the pre-Froebalian belief that the primary role of education is to produce good citizens through repeated sermonizing and regimentation of the school environment. While few would disagree that students should become good citizens, sermonizing is the anti-thesis of meaningful learning and of intellectual growth.*
>
> *This conflict between sermonizing and academic regimentation, on the one hand, and the need for facilitating cognitive and emotional development of individual learners on the other, has continued to trouble policy makers in Pakistan. Despite good intentions and huge resources, and despite eight education policies in 50 years, schooling has yet to become an attractive proposition and a happy experience for our children.*

With a focus on primary education, the Conceptual Framework proposes a learning process schema that covers objectives, premises and methods and meets the criteria of sound pedagogy **(see chart 5.1)**. It calls for fundamental paradigm shifts on a number of fronts. It suggests a shift of focus from more schools to better schools, from recruitment of more teachers to improving teaching content and methods, from sermonizing and regimentation of the school environment to the cognitive, emotional, social and spiritual development of children, and from rote learning to a rational and intellectually stimulating learning process. It recognizes the need for intellectual autonomy and the role of education in creating an environment of free inquiry and debate and respect for diversity.

CHART 5.1 THE LEARNING PROCESS



Source: Government of Pakistan, Ministry of Education, National Curriculum 2002: A Conceptual Framework

Independent citizens' groups have also taken the initiative to produce alternative textbooks designed to facilitate a way of teaching that allows for spontaneity, individuality and creativity by tapping into the child's inner compulsion to learn. These books are colourfully designed and contain material that can at once evoke the interest and enthusiasm of a child. That some of the content may be considered 'nonsensical' is irrelevant, as it serves the purpose of triggering the child's imagination **(see boxes 5.8 and 5.9)**.

The alternative textbooks and teaching methodology provide for integrated concept development rather than the teaching of isolated facts. They emphasize spontaneity and self-activity and stimulate the child's own powers of seeing, judging, reasoning and experimentation in realistic contexts. The process of learning begins with the child's immediate surroundings and slowly moves out into the wider world – from the known to the unknown, from the simple to the complex, and from the concrete to the abstract. Child-centered learning tools and activities allow them to explore the essential elements of mathematics, science, language and social studies.

The problem solving and explorations of mathematics and science empower students to imagine the unimagined, see patterns and analyze situations, and appreciate the harmonies of the natural world. Use of language underpins the whole learning process, as it is the major means of understanding and communicating. Social studies allow exploration of issues and formation of understandings about concepts in relation to the societal environment. The importance of art, colour, images, and play is recognized, not only as a means of understanding, but also as a means of self expression and creativity.

The teacher takes on the role of a facilitator rather than an all-knowing instructor. This relationship is the first building block of a meaningful learning environment. Rather than telling students or even guiding them as to what facts they should remember and memorize, the teacher's role becomes one of asking questions and helping students interpret and make sense of their world and their fantasies. Topics for study are captured from the talk of children as well as the known interests of children – pictures and colours, animals and plants, playing and make-believe, naughtiness and laughter. Children's language skills and critical

BOX 5.8 KOI BAAT NAHI

Koi Baat Naheen, Published in 2001-02, is reproduced here as an illustration of the shift from moralizing to teaching through children's real situations.

That's Quite Alright

You may be fat or thin
short or tall
or very tall
You may be dark or fair
That's quite alright

Sometimes you make mistakes
Sometimes you are left
behind in a race
Your do not do well in exams
Sometimes you feel like crying
That's quite alright

You only want to wear
clothes you like
The food cooked at home
sometimes you don't like
Sometimes you want to be on your own

Your room is often in a mees
You sleep late
on holidays
That's quite alright

Sometimes you are naughty too
And that's quite alright too

You are wonderful
Just the way you are

Source: *Koi Baat Nahi* (Urdu: That's Quite Alright), Karachi: The Book Group, 2002.

BOX 5.8 *(...Contd.)* **KOI BAAT NAHI**

BOX 5.9 KHATTA BAKRA

Khatta Bakra is an illustration of the use of pleasures of language, even if nonsensical, for language development. The interest that this generates is essential for discussion and concept development.

The Sour Goat
There lived a goat
in a lemon tree
Day and night lemons he'd eat
He would eat and eat
Eat, eat and fall off to sleep

Ripe lemons, un-ripe lemons
Sour peel, bitter lemons
Long lemons, round lemons
Crooked lemons, twisted lemons

Black, blue, yellow lemons
He would eat and eat
Eat, eat and fall off to sleep

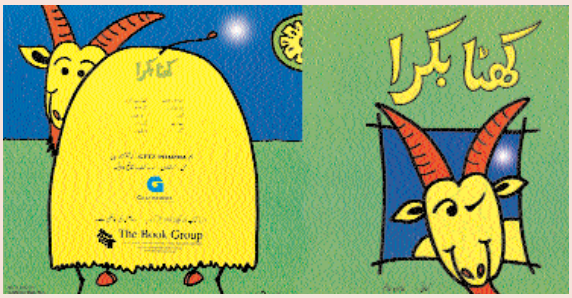
Under the tree
sat a lion
Thirsty, hungry
waited the lion

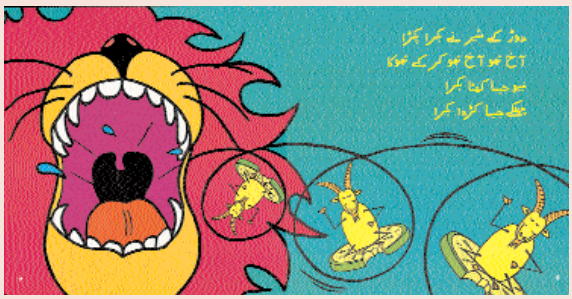
For the goat
to come down the tree
And become
his tasty meal

Then one day
in the early morning
Came down mister goat
widely yawning
straight into
the lion's mouth

Just one bite
the lion took
Yech, he spat
out the goat
Sour as the sour lemon
Bitter as the bitter peel

Source: *Khatta Bakra* (Urdu: The Sour Goat), Karachi: The Book Group, 2002.





faculties improve when they are encouraged to read and explore a variety of fiction, non-fiction and informative text. The emphasis on the real-life or make-believe world of children allows social and emotional learning. The direct involvement of learners in activities produces deeper understanding of the content through the development of skills that are readily transferable to life and work. This is the process by which children grow up to be individuals capable of creativity and scholarship.

Though the actual knowledge gained is important, the emphasis is placed firmly on the innate curiosity of children. Since learning is inherently interdisciplinary, the only valuable way to measure learning is to make child-specific assessment part of the learning process. This presupposes dialogue, provides time for thinking and allows mistakes as essential to long-term development objectives.

The above sections highlight the fact that issues of low enrolment and high dropouts at the primary level are indicators of a fundamental flaw: inputs to the primary education system are incompatible with the learning dynamics of children. After a brief overview of the universal consensus on learning processes, it has been shown that the national approach to education is largely devoid of pedagogical imperatives, driven as it is by a national curriculum that aims more to indoctrinate than to facilitate learning, and textbooks that allow little room for development by the teachers or for the students. However, positive developments have also been taking place. As mentioned above, the Conceptual Framework of the National Curriculum 2000 clearly attempts to move the policy debate towards pedagogy. Alternative textbooks produced by citizens' groups are available to facilitate this transition. Results of this gradual process can be seen in the case of officially prescribed textbooks as well **(see box 5.10)**.

Inputs to primary education, in terms of textbooks, teachers and teaching methods, are not only determined by policy choices between pedagogy and indoctrination, but also by the management structure of education in the country, which does not give teachers and principals primary responsibility in influencing what is taught and how it is taught.

MANAGEMENT STRUCTURE OF EDUCATION

Though education is a provincial subject, the Federal Ministry of Education gives broad outlines regarding curricula and textbooks to provincial Education departments and textbook boards. A Cabinet Minister, assisted by a Secretary from the federal civil services, heads the Federal Ministry of Education. The Ministry is composed of six wings and there are numerous attached departments and autonomous bodies. In addition to the Secretary, there are over 100 other officers: Additional Secretaries, Joint Secretaries, Deputy Secretaries, Educational Advisors, Joint Educational Advisors, Deputy Educational Advisors, Assistant Educational Advisors, Educational Officers, Research Officers, Assistant Research Officers, Section Officers, Project Managers, Project In-charges, etc. The salary grades of these officers range from 22 to 17.

At the provincial level, the Department of Education is headed by a provincial Minister, assisted by the provincial Secretary from the provincial civil services, who presides over a staff of over 50 officers. In

BOX 5.10 ZOHRA: A TRUE STORY

"Zohra: a True Story" is a reading exercise in the Sindh Textbook Board's English text for Class 5. There are two features of this story that deserve mention. First, the story shows that there is a keen desire for education on the part of girl children and their parents, and that they are prepared to push aside social taboos and bureaucratic barriers to this end. And second, the inclusion of this story in the prescribed textbook is indicative of the positive changes underway and the willingness of education officials to include material showing that taboos and barriers can be overcome.

Zohra: a True Story

This is the true story of a little girl called Zohra, She wants to be a teacher when she grows up.

Zohra was born in a small village near Mir Pur Sakro. When she was five years old she started going to school with her brother Mateen.

She loved her school. She learnt to read and write. Her books told her about the sun, its light and heat. She also learnt about many insects, butterflies, birds and animals. She wanted to read more and more.

One day, her teacher told her about Hazarat Rufaida and Florence Nightingale. Zohra said, 'I want to be like them. I want to help people.'

Zohra worked hard. She did very well in Class 5. Her small village had only a primary school. After Class 5 all the boys went to the Boys Middle School in the nearby village. But there was no middle school for girls.

Zohra said to her mother, 'I want to go to Middle School too. I want to study more.'

Zohra's father and mother went to the Middle School and said to the headmaster, "Zohra is good at her studies. Please let her study in your school."

The headmaster was a kind man. He said, "All right, Zohra can come with Mateen and study in the school."

So Zohra was very happy. Every day she walked three kilometres with her brother to go to the Middle School.

The villagers did not like Zohra going to the boys' school. They said, "Zohra must stay at home with her mother." But Zohra's mother and father replied, "No! She will go to school. She wants to be a teacher."

The villagers were angry. They said, "She must not cross our village streets, because when our daughters see her, they will also want to go to school."

Poor Zohra and Mateen! Now they had to take a longer route to the Middle School. They had to walk five kilometres to school to avoid the angry villagers.

Zohra worked very hard now. She was in the boys' school. She could not play games. She had no one to talk to, but in class she was very good. Her teachers were kind to her. Year after year she studied, and passed her matric exams with an A-grade.

Now Zohra has finished studying in a college. She will soon become a teacher!

Source: Excerpt from *My English Book 5.* Sindh Textbook Board, 2002.

addition to the Secretary, there are about ten Additional Secretaries and Provincial Coordinators in salary grades 19 or 20, followed by about 20 Deputy Secretaries, Deputy Provincial Coordinators and Deputy Directors in salary grades 18 or 19, and by over 20 Section Officers in salary grade 17.

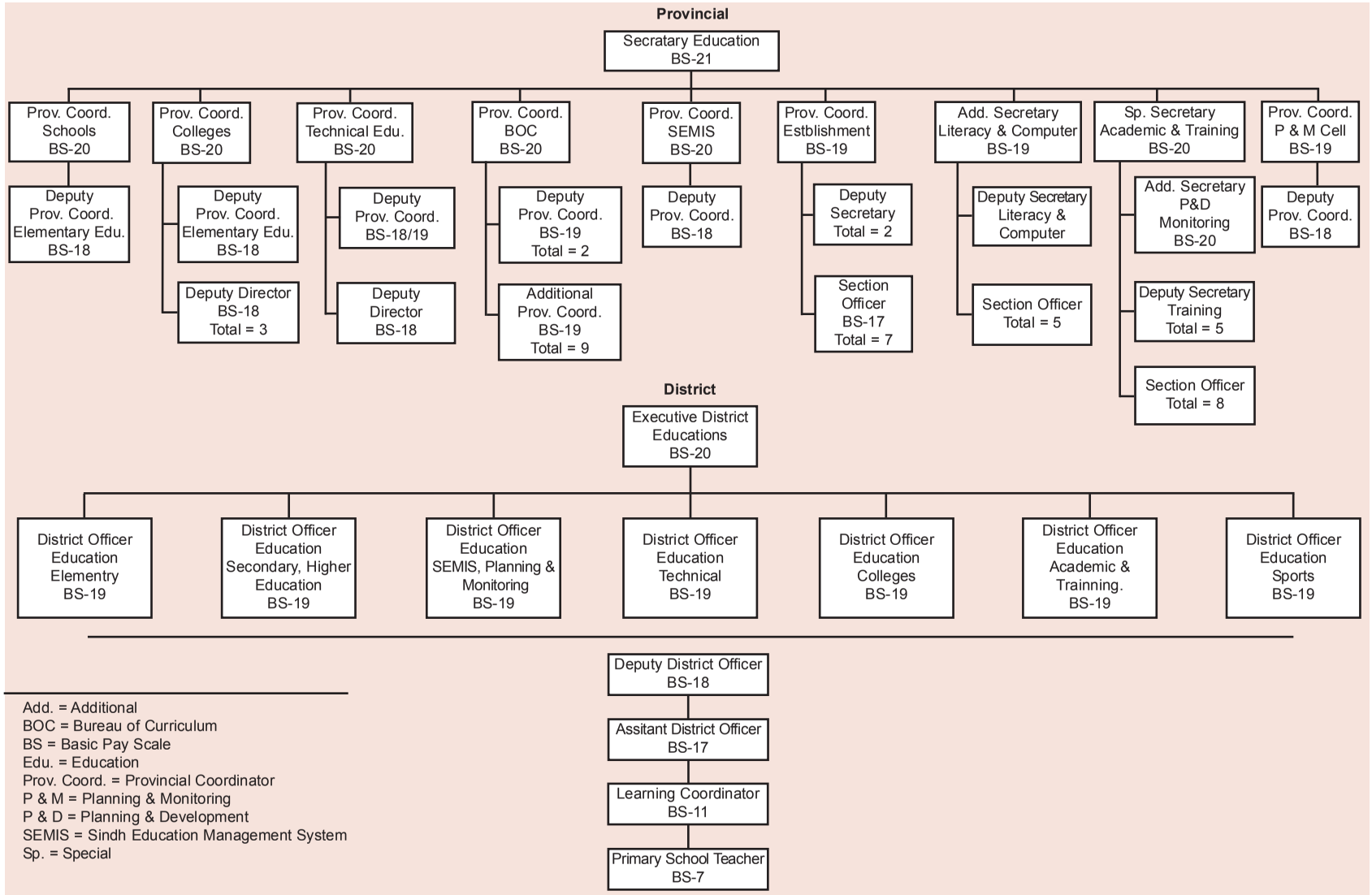
At the district level, the District Education Department is headed by the Executive District Officer (Education), who is a grade 20 officer of the provincial civil services and who presides over a staff of over 40 officers, comprising District Officers, Deputy District Officers, Assistant District Officers, and Learning Coordinators. The salary grades of these officers range from grades 20 to 11.

At the bottom of this elaborate administrative hierarchy is the primary school teacher in salary grade 7, with initial basic pay at Rs. 2220.00 per month **(see chart 5.2)**. Head teachers are appointed from among the relatively more senior teachers and are generally in grades 9 or 10. However, there are numerous cases of Head Teachers in grade 7 as well. Placement at the bottom of the hierarchy means that the teacher has a very low status and commands respect accordingly. Given that the position of the school teacher provides neither financial incentives nor social standing, it is not surprising that the positions generally do not attract staff with a relatively high degree of competence.

Decision making power is also concentrated within the office of the Executive District Officer (Education), who is the effective chief executive of the education department in the district and performs the following tasks:

- Appointment of BS-15 and below staff (BS= Basic Pay Scale)
- Posting and transfer of officers BS-15 and below
- Promotion/Confirmation, Selection Grade and move over of officers BS-15 and below.
- Retirement and acceptance of resignation of officers BS-15 and below.
- Grant of all kinds of leave to officials in BS-15 and below, except Ex-Pakistan leave.
- Initiating disciplinary action against officers BS-15 and below
- Coordination with other district level department/organizations
- Grant of NOC for obtaining passport to officers BS-15 and below
- Implementation of policies for promotion of education
- Enhancing the standard of education
- Assessment of teacher training needs
- Launching of literacy campaigns
- Establishment of Primary and Middle schools
- Preparation of annual budgets
- Proposing of new schemes for the district
- Grant of scholarships to all levels of students
- Distribution of budget within the districts/among institutions
- Issuing authorization for utilization of budget.
- Re-appropriation of budget grants.
- Sanction of General Provident (GP) Fund advance, honorarium and advance increments to officers BS-15 and below
- Preparation of Statement of Expenditures (SOEs), Quarterly Monitoring Reports (QMRs) and getting the same reconciled
- Maintenance of record of accounts and getting the same audited on regular basis, and
- Disposal/settlement of audit.

CHART 5.2 ORGANOGRAM OF EDUCATION STRUCTURE IN SINDH



The Head Teacher does not possess any meaningful powers to ensure that the inputs required to ensure quality teaching are in place. S/he has to make do with the physical facilities that have been made available and with teachers who have been posted/transferred to the school and has little choice but to accede to pressure for student admissions. Failure to honour the pressure can lead to transfer.

Most importantly, the Head Teacher does not have any authority with respect to recruitment or transfer of teachers or initiating disciplinary action against any teacher. As a result, the Head Teacher is not empowered to enforce discipline, either with respect to attendance, punctuality or teaching. S/he can, of course, forward complaints to the appropriate quarters; however, the action taken, if any, is a function of the concerned teacher's political 'connections'. Political appointees are a major source of disturbance within the education management system. In many cases, they are either self-employed or employed elsewhere in the private sector and have, at best, a casual interest in teaching. A common *modus operandi* for obtaining employment as a schoolteacher is to be appointed in any district and then to make use of 'connections' to have oneself transferred to the district of one's choice. In this process, the previous teacher is transferred to another district and then endeavours to arrange a transfer back to her/his original district. Dealing with transfer requests thus constitutes a major workload of the district education office.

The Head Teacher also does not command any meaningful powers to incur expenditures. Delays in disbursements of funds to schools – a usual phenomenon – implies that schools generally do not have funds for such petty cash expenditures as purchase of chalk, photocopying, and maintenance of building, furniture and fixtures, e.g., changing light bulbs, effecting plumbing repairs, etc.

A proposal that is informally on the agenda, but not under formal consideration, is to separate the administrative and teaching cadres of the Departments of Education, with the latter comprising Head Teachers and teachers, and to raise their salary grades to 17 and 16, respectively.

This would be an essential and welcome step. However, far more substantive changes are in order. Apart from fundamental reform of the syllabus in line with the new Conceptual Framework of the National Curriculum 2000, there is primarily a need to change the learning culture of schools, where a child-friendly teaching process replaces rote learning, coercion or corporal punishment. There is a need to change the current regime of bureaucratic control by a system based on the principle of academic autonomy. This would require that the Head Teacher be provided full powers in all matters relating to the management of the school, including hiring and firing of teachers, thereby terminating the system of centralized recruitment and the issue of postings and transfers. It would also require ending the monopoly of prescribed textbooks and allowing teachers to use additional reading and teaching material. It would require granting schools a reasonable budget and financial autonomy to enable the purchase of necessary school supplies, the repair and maintenance of school facilities, etc. Commensurate with these powers, the Head Teacher should be made fully responsible for the functioning of the school, attendance of teachers, quality of teaching, and student performance.

There is a need to change the learning culture of schools, where a child-friendly teaching process replaces rote learning, coercion or corporal punishment.


Hero

STATE OF SCIENCE EDUCATION

6

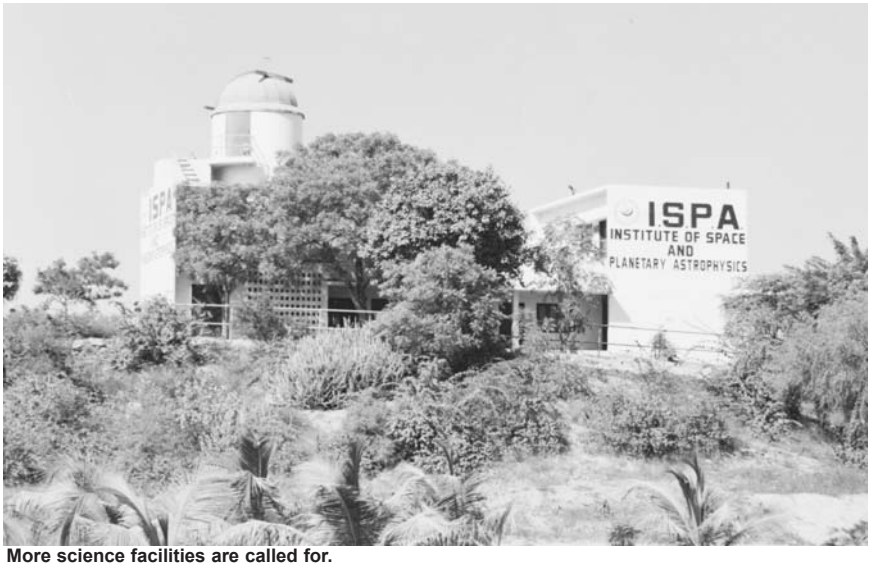
"Examinations do not test ... understanding, reasoning, originality or creativity."

STATE OF SCIENCE EDUCATION

Mathematics is the basis of all sciences and science is the fountainhead of all technological development, be it in the field of engineering, electronics, chemicals, biology or medicine. Science and technology are the cornerstones of all modern economies, given that technology now drives productivity and growth in all areas: agriculture, manufacturing, energy, housing and construction, transportation and communication, banking and finance, and other tertiary services. The nature of recent wars has also highlighted the crucial role of technology, adding a national security dimension to scientific knowledge.

Despite its importance, the state of science in Pakistan is disappointing and the number and quality of scientists in the country is not encouraging at all. Pakistan depends to a large extent on imported technology in almost all areas of life. Although there are specialized scientific institutions and several science departments in numerous universities in the country, their contribution to the invention of new processes and/or products and towards industrial innovation is negligible.

It is generally accepted that the state of science education in Pakistan is problematic. To obtain a formal understanding of the nature of the problem in its various dimensions, a comprehensive nation-wide analysis was carried out in 2003 encompassing the following: a test of students in core science subjects; a survey of teachers' qualifications; an analysis of officially prescribed textbooks; an appraisal of the pattern of examinations and question papers; an assessment of laboratory manuals and practices; a review of library lending records; school visitors; and interviews with school and college principals, science teachers, laboratory supervisory staff and students.



More science facilities are called for.

The in-depth analysis of the teaching of science from middle to higher secondary school levels reveals that the root of the problem is not the curriculum or the qualifications of teachers, but the method of teaching, which in turn is driven by the pattern of examinations.

A strong caveat is necessary here. For reasons of economy of time and resources, the study was necessarily limited in scope. The range of tests and surveys had to be restricted. The results and conclusions presented here, therefore, are broad generalizations and should be read in that spirit. While there are many exceptions, the norms identified are pervasive enough to conclude that they do reflect the state of science education in the country.

TEST RESULTS: DEFINING THE PROBLEM

The issue of poor quality teaching emerges in the results of a nation-wide test in mathematics, physics, chemistry and biology involving 223 science students in 22 colleges in all provinces of the country. The operational details of the tests are given in **box 6.1**. While the size of the sample and the scope of the tests are limited, they do accurately present the situation as it exists with respect to the intellectual abilities of science students in the country.

BOX 6.1 OPERATIONAL DETAILS OF THE TEST

To test the understanding of basic scientific concepts of students who have matriculated from the Pakistani system, tests were conducted to quantify the achievement level of students who had completed 11 years of education, i.e., the Secondary School Certificate (SSC) plus one additional year. The choice of 11 years was meant to ensure that the students were at least at par with O' level requirements in terms of years of schooling.

The tests were conducted in at least two cities in each province – one large and one small city. Two colleges – one male and one female – were selected in each city and at least 10 students tested in each college.

To ensure that the students took the test seriously, a reward was announced for the best student in each subject in each city. This was deemed necessary in view of the advice of the teachers concerned, who were apprehensive that the students might not be willing to undertake a two hour test that had no bearing on them. Nevertheless, it was observed that the students who volunteered for the tests took them seriously and made the required effort to answer the questions.

The tests were conducted in the following core science subjects: mathematics, physics, chemistry and biology, and were designed along the lines of an internationally accepted examination system, i.e., the General Certificate of School Education (GCSE), also known as the O' levels, conducted by Cambridge University, UK. They comprised two parts (except for mathematics): multiple choice questions (MCQs) and theory questions. A fairly significant part of the O' level syllabus that was considered difficult was not covered in the tests and the general level of difficulty of questions was lower compared to a typical O' level examination. Furthermore, more time was allotted per question than normally given in a typical O' level examination. The passing score was set at 40 per cent. In the theory section, marks were given to students based on the way they approached the problem, even if their final answer was not correct. Students were also allowed to answer in the language they were comfortable with, i.e., English or Urdu.

Analysis of the teaching of science from middle to higher secondary school levels reveals that the root of the problem is not the curriculum or the qualifications of teachers, but the method of teaching, which in turn is driven by the pattern of examinations.

The test results presented in **table 6.1** show that with the pass percentage fixed at 40 per cent, the percentages of all students who achieve passing grades (40 per cent or more) are: 19.1 per cent in mathematics, 4.3 in physics, 7.7 in chemistry, and 37.0 in biology. The average percentages obtained in the four subjects are: 24.0 in mathematics, 18.7 in physics, 19.0 in chemistry and 35.9 in biology. Even

TABLE 6.1 TEST RESULTS BY SUBJECT (%)

Subjects	Average Percentage Obtained			Percentage Passing
	MCQ*	Theory	Overall	
Mathematics	--	--	24.0	19.1
Physics	24.7	12.8	18.7	4.3
Chemistry	32.5	11.3	19.0	7.7
Biology	44.8	27.0	35.9	37.0

*Multiple Choice Questions (MCQ)
Source: SPDC test results

though performance in biology is better than in other subjects, the average passing grade is still below 40. These averages are somewhat higher for Multiple Choice Questions (MCQs): 24.7 in physics, 32.5 in chemistry and 44.8 in biology. Correspondingly, the average percentages in the theory section are lower, with 12.8 in physics, 11.3 in chemistry, and 27.0 in biology. The evaluation of answers with respect to easy, moderately difficult, and difficult questions shows that student performance falls as the difficulty level of the questions increases **(see table 6.2)**.

TABLE 6.2 PERFORMANCE OF STUDENTS BY LEVEL OF DIFFICULTY OF QUESTION (%)

Subjects	Answering Easy Questions Correctly	Answering Moderately Difficult Questions Correctly	Answering Difficult Questions Correctly
Mathematics	81	29	0
Physics	34	31	19
Chemistry	50	21	23
Biology	65	59	27

Source: SPDC test results

The evaluation of answers with respect to easy, moderately difficult, and difficult questions shows that student performance falls as the difficulty level of the questions increases.

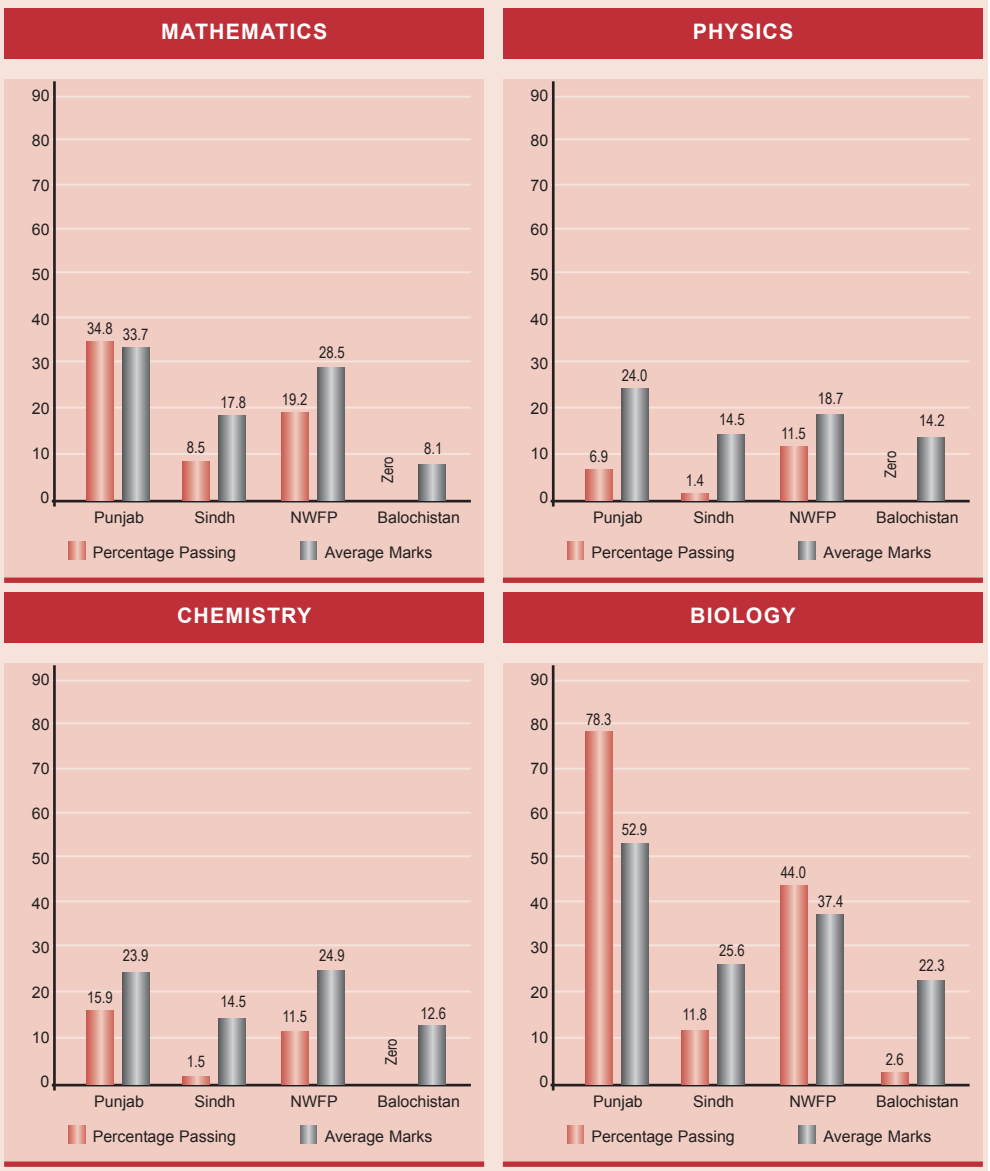
A province-wise analysis of examination results shows that no province posted passing average grades in mathematics, physics or chemistry. On the other hand, Punjab registered an impressive 78 per cent of all the students who obtained passing grades in biology. Overall, students in Punjab achieved relatively better scores, followed by NWFP. Balochistan fared extremely poorly, as none of the students managed to obtain passing grades in any subject except biology. Students in Sindh performed only marginally better than those in Balochistan and significantly worse than students in NWFP and Punjab **(see table 6.3 and Chart 6.1)**.

TABLE 6.3 TEST RESULTS BY PROVINCE

Subjects	Punjab		Sindh		NWFP		Balochistan	
	Percentage Passing	Average Marks	Percentage Passing	Average Marks	Percentage Passing	Average Marks	Percentage Passing	Average Marks
Mathematics	34.8	33.7	8.5	17.8	19.2	28.5	zero	8.1
Physics	6.9	24.0	1.4	14.6	11.5	18.7	zero	14.2
Chemistry	15.9	23.9	1.5	14.5	11.5	24.9	zero	12.6
Biology	78.3	52.9	11.8	25.6	44.0	37.4	2.6	22.3

Source: SPDC test results

CHART 6.1 TEST RESULTS BY PROVINCE: A GRAPHICAL VIEW



Source: SPDC test results

TABLE 6.4 TEST RESULTS BY CITY SIZE

Subjects	Large City		Small City	
	Percentage Passing	Average Marks	Percentage Passing	Average Marks
Mathematics	27.1	31.8	16.0	21.0
Physics	9.3	24.0	2.6	16.9
Chemistry	14.8	22.2	5.0	17.7
Biology	43.1	42.2	34.9	33.7

Source: SPDC test results

There is a clear pattern in the performance of students in large and small cities **(see table 6.4)**. The proportion of students obtaining passing grades is higher for large than for small cities in all subjects. Similarly, the average marks obtained in all the subjects are higher for large than for small cities. Gender-wise analysis shows that boys achieved a higher passing percentage than girls in mathematics, physics and chemistry, while girls performed better in biology. In no subject, however, did the boys or girls obtain passing average grades **(see table 6.5)**.

TABLE 6.5 TEST RESULTS BY GENDER

Subjects	Boys		Girls	
	Percentage Passing	Average Marks	Percentage Passing	Average Marks
Mathematics	22.9	24.0	13.2	23.9
Physics	4.5	19.7	2.0	20.3
Chemistry	9.5	18.3	5.6	19.8
Biology	31.4	32.9	43.2	39.2

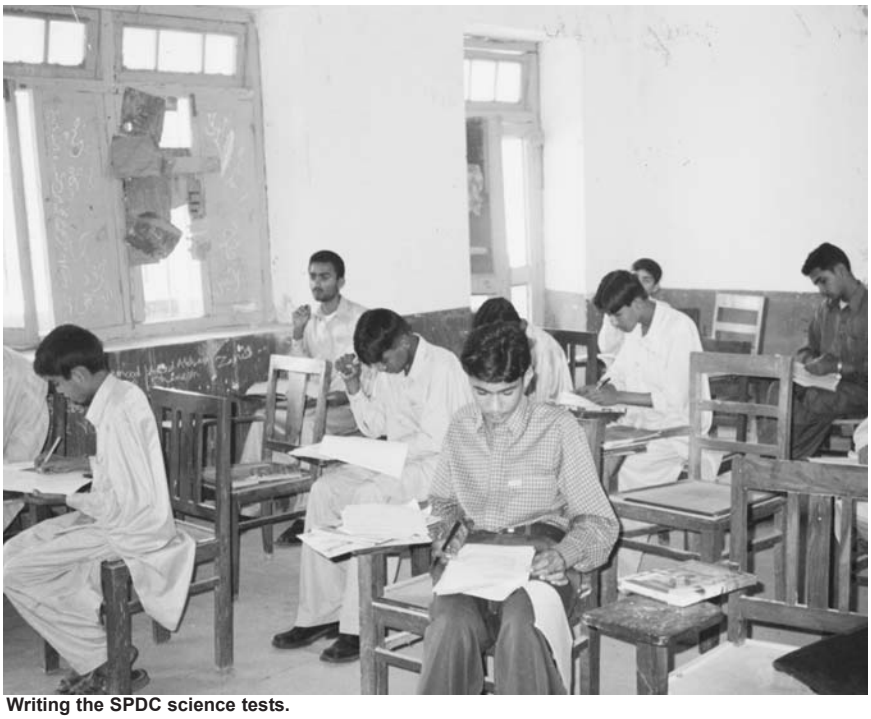
Source: SPDC test results

The pattern of results shows that the only subject in which performance is relatively better is biology, perhaps on account of a greater element of descriptiveness as opposed to conceptual analysis in physics and chemistry. The pattern of achievement in MCQs and theory sections also shows that while students are *relatively* better endowed in terms of the stock of knowledge, they are weak in responding to questions that require the application of analytical capabilities. Again, performance in large cities is better than in small cities, ostensibly on account of better teaching facilities and opportunities in the former. Boys perform better than girls in the so-called 'quantitative' subjects, while girls outperform boys in the more 'qualitative' subject of biology.

Performance in large cities is better than in small cities, ostensibly on account of better teaching facilities and opportunities.

It is important to note that a number of concessions were given to the students in view of their relative unfamiliarity with such an examination. Despite these concessions, the performance of students was unsatisfactory across the board, irrespective of province, city or gender. While the overall low level of performance varies according to subject, there are some common elements between larger and smaller cities.

First, there appears to be a problem relating to students' familiarity



Writing the SPDC science tests.

First, there appears to be a problem relating to students' familiarity with the stock of knowledge. For example, no student could correctly answer the relatively more difficult questions relating to, for example, trigonometry – they simply did not have the required knowledge. Second, almost universally, students were unable to plot or even read simple graphs (e.g., graphs of temperature and humidity) and to derive analytical conclusions from them; or to answer questions based on diagrams depicting a particular system (e.g., the digestive or cardiac system) and identify the organs and their specific roles. Third, students were generally unfamiliar with the working of basic instruments in a laboratory, e.g., galvanometer, elementary circuits, or of basic chemistry or biology laboratory methods and techniques. It appears that many students had never seen the inside of a laboratory, and therefore, it is not surprising that they were unable to answer simple questions based on experiments that are a routine part of laboratory work. Fourth, students appeared to lack the ability to answer simple questions based on conceptualization and analysis. This last drawback, perhaps the most serious, is discussed further on.

An evaluation of student performance reveals three primary weaknesses: (i) inability to apply their knowledge to answer questions; (ii) inability to reason out solutions when given a (previously) unseen problem and a certain amount of information pertaining to it; and (iii) inability to apply their knowledge with required detail and precision. These weaknesses originate from the tendency to memorize formulae and their applications or information on the functioning of systems, and to reproduce these in examinations without developing an understanding of the concepts/processes.

For example, a problem was given in physics with data consisting of the positions of an airplane at successive times, and the students were

expected to answer if the airplane had (i) constant, or (ii) variable velocity, and (a) constant, (b) variable, or (c) no acceleration. The review of answer sheets shows that even those students who answered this question correctly failed to provide proper reasoning. Many students could not correctly interprete the data to determine whether the accelleration was constant or variable. They could not distinguish between average and instantaneous accelerations or between 'average velocity over an extended time period' and 'instantaneous velocity at a specific instant'. It appears that while students were aware of what velocity and acceleration are, and how their increase or decrease would be manifested in space and time, they were not clear as to how they ought to separate out the behaviour at different time instances and draw conclusions based on this.

With respect to the chemistry test, when asked to explain the appearance of the reactants or observations expected during a typically familiar reaction, the response invariably was to reproduce the equation of the reaction. The ability to answer questions based on the Periodic Table – the conceptual basis of chemistry – was weak in most students. They did not show the ability to solve simple numerical problems unless the questions required direct application of formulae. In the biology test, students generally failed to pick out the relevant part of the information provided and give the required answer. The general tendency was to provide vague and imprecise answers or to write everything they knew about the topic.

It is not clear to what extent policy makers are aware of the extremely unfortunate state of affairs, as evidenced by the test results. However, those involved with education have long been concious of the deep-rooted morass. Principals and teachers interviewed during the survey also expressed their visible frustration at the problems. Even students vented their sense of despair **(see box 6.2)**

BOX 6.2 A CRY OF DESPAIR

Several students returned almost totally unanswered question papers. Some of these students wrote comments instead. Two such comments are translated and reproduced below:

"I understand that you are conducting these tests to help improve the standard of science education. I too want to do much for my country. But I can't understand what is going on. We are supposed to be entering the 21st century; instead we are sinking deeper into ignorance. Go and take a look at our primary schools. You will then understand why we are not able to do your test. Our foundations are so weak."

"We are sitting here staring helplessly at this test paper, each one waiting for his messiah. Our fathers, brothers, friends, and teachers are not here to help us out now, but we are used to their help and to this 'copy culture'. We cannot do this work on our own. Why do you expect us to be able to do all this? We have no such training. We have no abilities. We are finished academically. What is going to become of all of us? We are doomed."

DETERMINANTS OF POOR PERFORMANCE

Several questions arise as to the factors responsible for such dismal performance in all four subjects and all provinces. Four factors are studied here: availability of qualified teachers, textbooks, examinations, and laboratory practices.

"We are used to this 'copy culture'. We cannnot do this work on our own."

Availability of Qualified Teachers

Teaching science at different levels requires different levels of specialization. The emphasis at earlier stages is on the pedagogical ability of the teacher to convey information and ideas. At higher levels, more technical expertise is required. However, the unanimous opinion among the principals and teachers consulted is that a Bachelor's degree in science should be the minimum qualification required to teach science subjects adequately up to the secondary level.

Official data on science teachers by qualifications is available only for Punjab. The picture that emerges from official statistics is not encouraging with particular reference to the availability of science teachers.

Two statistics – the ratio of number of science teachers (defined as those with at least a BSc. degree) to total number of school teachers, and the number of science teachers per school – reveal a serious shortage of science teachers in the school system **(see table 6.6)**. Science teachers, as defined above, constitute only 21 per cent of all school teachers. In urban-rural terms, this ratio is 26 per cent for urban areas and 19 per cent for rural areas. In gender terms, this ratio is 26 per cent for males and 15 per cent for females. The gender distribution in urban-rural terms shows that the proportion of female science teachers in total female teachers is 19 per cent in urban areas, while this share is a mere 12 per cent in rural areas. The low proportion of science teachers is one indication of the relative importance attached to the teaching of science in the overall educational plan. However, it is commendable to observe that almost 80 per cent of all science teachers hold an MSc. degree.

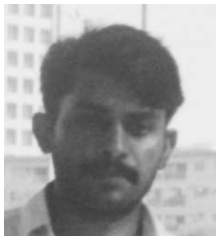
Furthermore, the average number of science teachers per school is alarmingly low. There are only 3.1 science teachers per school, with a wide urban-rural variation: 6.7 in urban areas and 2.3 in rural areas. The average number of female science teachers per school is just 1.8 – 4.4 in urban areas and 1.2 in rural areas. Given that at the secondary and higher secondary levels, there are four science subjects – mathematics, physics, chemistry and biology – the average number of teachers translates to one or 1.5 teachers per subject in urban areas and less than one in rural areas.

The available offical data do not enable an estimation of the student-teacher ratio, as it does not provide data on the number of students in science classes. As such, a survey of 48 boys' and girls' schools and intermediate colleges in Punjab and Sindh was conducted to obtain the

TABLE 6.6 PROFILE OF SCIENCE TEACHERS IN SCHOOLS

	Urban			Rural			Total		
	Male	Famale	Total	Male	Female	Total	Male	Female	Total
Number of Science teachers as percentage of total number of teachers	33.8	18.5	26.3	23.2	12.3	19.0	26.2	14.6	21.3
Number of Science teachers per school	9.2	4.4	6.7	3.2	1.2	2.3	4.2	1.8	3.1

Note: Science teachers are defined as those with BSc. or higher qualifications
Source: SPDC Survey, 2003



required information. The survey could not be carried out in NWFP and Balochistan for logistical reasons, particularly the closure of colleges during the period of the survey. The survey was carried out in Lahore, Rawalpindi, Layyah and Rahim Yar Khan in Punjab, and in Karachi, Thatta and Larkana in Sindh. Needless to say, the survey sample was small and non-random and, as such, the results should be read with due reservation.

Table 6.7 presents the results of the survey. The overall average class size for Punjab and Sindh is 55 and 65, respectively. However, these averages are somewhat misleading; the student-to-science-teacher ratio varies considerably according to school level. At the middle school level (Class 6-8), the student-teacher ratio is 158 in Punjab and 145 in Sindh. The situation improves at higher levels. The secondary school (Class 9-10) ratio is reported at 57 in Punjab and 85 in Sindh, while the ratio at the higher secondary level (Class 11-12) is lower still at 35 in Punjab and 38 in Sindh.

TABLE 6.7 PROFILE OF STUDENT - TEACHER RATIO

	Middle	Secondary	Higher Secondary	Total
Overall	**150**	**71**	**36**	**60**
Punjab	158	57	35	55
Sindh	145	85	38	65
Punjab				
Large city	103	39	39	47
Small City	218	71	31	62
Sindh				
Large city	88	80	32	43
Small city	203	102	81	105

Source: NEMIS (2000)

The provincial averages also conceal the differential between large and small cities. In Punjab, average class size in middle schools is 218 in small cities as opposed to 103 in large cities. In Sindh, the corresponding class size in Karachi (large city) is 88, while the same in smaller cities is 103. Class size declines with higher levels of education, although it remains high in smaller cities in Sindh.

The shortage of teachers puts pressure on existing teachers in terms of the number of lectures they are expected to deliver each day. For example, in one college, the same teacher was found to be teaching biology in all sections from Classes 8 to 12. This situation raises two kinds of issues. First, the teaching method and approach that is required at the Class 8 level is different from that required at the Class 12 level. The same teacher cannot be expected to shift from one mode to another on a day-to-day or morning-to-afternoon basis. And second, the teacher is required to put in over 20 hours of lecturing per week. Such a heavy teaching load cannot but lead to a situation where the teacher's primary objective is reduced to covering the required syllabi and preparing the students for examinations.

The low proportion of science teachers is one indication of the relative importance attached to the teaching of science in the overall educational plan.

Well equipped science labs are rare.

The shortage of teachers is manifested in other ways as well. A number of schools and colleges reported that the non-availability of science teachers has forced them to entrust science classes to non-science graduates. One girls' college had to resort to hiring male teachers to teach science courses to female students, and so on. Since science subjects require more individual attention than humanities subjects, it is inconceivable that a teacher can communicate effectively or impart knowledge adequately to a class exceeding 100 students, as is the case in middle schools, or even exceeding 200 students, as is the case in smaller cities. The shortage of science teachers constitutes one major reason for the sub-standard quality of science education, as is evident from the test results.

Textbooks

Pakistan's public education system prescribes textbooks for each level from Class 1 to Class 12. The texbooks are prepared by the respective Textbook Boards of each province according to the curricula guidelines set by the Curriculum Wing of the Federal Ministry of Education. These books are prepared by teams of authors and editors who are academics from universities or their affiliated colleges. After review and final approval by the respective Review Committees of the Curriculum Wing, they are given the status of 'prescribed sole textbook' for the subject and the level.

Textbooks have a crucial role in public education in Pakistan. Teachers and students generally understand that the questions asked in the examinations will be from the prescribed textbook. The content, approach, questions, illustrations, solved examples, etc., of the textbooks constitute and define the entire body of knowledge and understanding to

which the student is exposed. The only supplements to the textbooks are the notes dictated by the teachers, which are again modelled on the lines of an appropriate answer to a prospective question in examinations.

Prescribed textbooks are the only reading material students access, and for reasons to be elaborated, use with an almost theological single mindedness. Textbooks have acquired almost totalitarian control of learning; students are neither encouraged to explore references, nor are they personally willing to do so. This is in stark contrast to other countries, where students and teachers can refer to a variety of books and where the goal of developing understanding is achieved by recourse to different information sources and teaching methods.

In the analysis presented here, prescribed science textbooks for classes 6-12 from the Punjab, Sindh and NWFP Textbook Boards and the National Institute of Science and Technical Education (NISTE), a government organization dedicated to science education, are analyzed. The main elements considered in the evaluation of textbooks and their comparison with similar textbooks used in international systems, i.e., O' and A' levels, include: i) content, continuity, emphasis and relevance to the educational level; ii) style of presentation, language and pedagogical aspects; iii) type, quality and number of exercises, and solved as well as unsolved problems; and iv) illustrations and other supporting material, such as pictures.

General Science Textbooks. A review of General Science textbooks for Classes 6-8 shows that the level and depth of content, continuity of themes and presentation is adequate. However, they suffer from a paucity of good illustrations and diagrammatic representation of processes, particularly in the case of biology. Illustration of the functioning of a process in various steps would give students a much clearer understanding of the role of various organs in the process and also enhance their interest in the subject. These weaknesses, relating to understanding, were particularly noticeable in biology tests, where students appeared to know the general principles of a system, but were unable to satisfactorily relate the roles of different component parts.

The textbooks are also weak in terms of solved examples that help students to apply the concepts to different situations. End-of-chapter exercises do not cover the contents sufficiently and lack imagination in the framing of questions. The questions are directed to the text in a very to-the-point fashion and require students to merely quote from it.

NISTE textbooks are generally well written, well illustrated, and follow an activity-based approach. Unfortunately, none of the schools surveyed used these books due to the lack of resources and training. The Urdu translations of these books employ very difficult and complex terminology that the students – and teachers – find confusing.

Secondary and Higher Secondary School Textbooks. An examination of prescribed textbooks for secondary and higher secondary schools reveals that they:

- present science in a manner that is too abstract and formal;
- are deficient in content as well in presentation;
- are lacking in focus and precision that is essential in understanding and working with scientific phenomena; and
- are unsuitable in terms of developing concepts and creating and maintaining the interest of the students.

The content, approach, questions, illustrations, solved examples, etc., of the textbooks constitute and define the entire body of knowledge and understanding to which the student is exposed.

Observing a laboratory experiment.

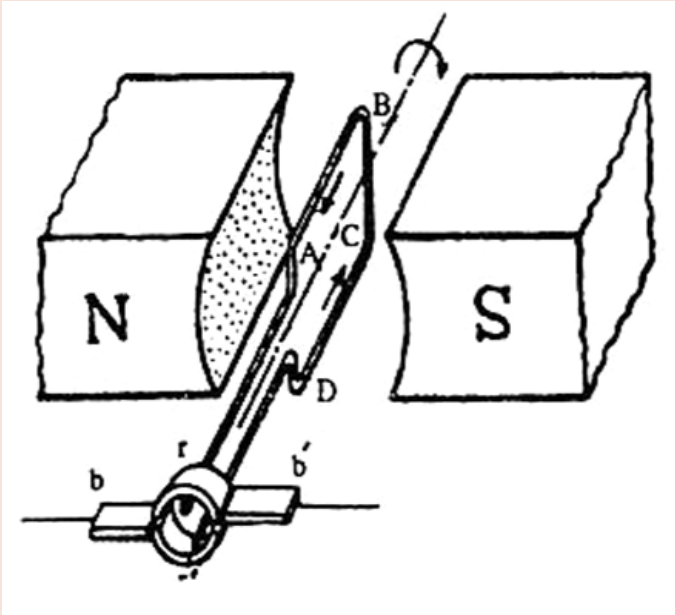
Educationists dealing with school science concur that the basic need is to enable the student to connect idea and reality and to make the physical world more comprehensible. This may require some sacrifice of formalism and rigor to varying extents, depending on the educational level, compensated for by applications, examples and illustrations that make the connection between the idea and the physical reality. A comparison of prescribed and alternative textbooks used in comparable international systems i.e., O' and A' level of the University of Cambridge, captures the difference. Alternative textbooks are more comprehensive, cover all conceptual aspects of a subject, and emphasize understanding of scientific concepts and their application. They involve numerical calculations and the application of facts to enhance the reasoning ability of the students. There is a surfeit of detailed diagrams, illustrations and photographs of actual objects. A logical sequence and flow of descriptions enables students to fully understand objects and related scientific phenomena.

By comparison, prescribed textbooks are largely to-the-point narrations and encourage retaining factual material as it is presented. They do not contain the required level of detail to apply ideas to real world phenomena. There is excessive emphasis on formal definitions; e.g., on mathematical derivations and on the laws that govern physical behaviour, as in the case of physics. While the need for definitions and derivations cannot be denied, the emphasis on the formal structure of the laws is misplaced and misdirected.

Prescribed textbooks are inadequate in terms of the examples necessary to provide students with full comprehension of scientific phenomena. They provide a spate of symbolic diagrams, but there is a dearth of illustrations and pictures of actual objects to enable students to obtain a full understanding of the concept/subject. In some cases, diagrams are incorrectly drawn. An example of incorrect drawings is

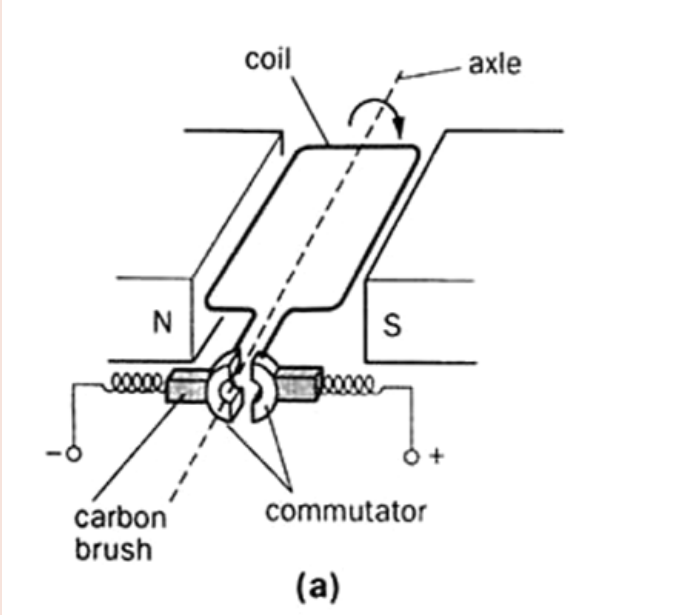
BOX 6.3 CASE OF A DC GENERATOR DIAGRAM

INCORRECT DRAWING



Source: Figure 14.24, Physics XII, Punjab Textbook Board (2002)

CORRECT DRAWING



Source: Figure 16.20, Physics by Tom Duncan, John Murray, 4th Edition

depicted in Figure 14.24 of Physics XII (Punjab Text Book Board, 2002). The drawing is supposed to illustrate a DC generator. Contrary to the text, however, it shows a slip ring, which produces AC voltage, instead of a split ring structure, which produces DC voltage. The correct figure is reproduced from Figure 16.20 of Physics, (Tom Duncan, 4th Edition, John Murray). See **box 6.3** for the incorrect and correctly drawn diagrams.

In the prescribed textbooks, it is not uncommon to find statements that are misleading and sometimes plainly wrong. Two instances are cited from the review of selected prescribed physics textbooks to substantiate this point.

- The chapter on 'Magnetism' of the Class 10 physics textbook describes "the force between magnetic poles as proportional to $1/r^2$, r being the distance between the poles." This is incorrect. The correct statement is, "the force between magnetic dipoles (isolated poles not being found in nature) varies as $1/r^4$."
- One Class 10 physics textbook defines a wave as "a mechanism to transfer energy from one point to another without the displacement of matter." First, the definition is highly restrictive, since it implies only one type of wave, i.e., travelling waves as opposed to standing waves. Second, the statement is faulty, as the propagation of waves can often lead to the oscillatory displacement of particles in the medium e.g., due to sound waves. A correct definition could read: "a mechanism to transfer energy from one point to another without net or time averaged displacement of matter" or, more accurately, "a wave is a mechanism for the transport of energy without the transport of matter...". While the difference may seem trivial, it would be totally confusing to a student who sees, in one of the prescribed experiments for the same class, the up and down movement (displacement) of a piece of cork riding on a wave. This illustrates the importance of precision.

Recently published chemistry textbooks by the Punjab Textbook Board and NISTE for Classes 9 and 10 show marked improvement, with reasonably good concept development, sequencing and coloured illustrations. However, they are not problem-free. Some important concepts are incorrectly presented, not dealt with in sufficient detail, or missed out altogether; the tables given are not comprehensive, and the number of examples is inadequate. The sequential arrangement of material is important to enable students to understand scientific phenomena logically. However, discontinuity is not uncommon in the textbooks. For example:

- The 'Periodic Table' is a logical consequence of 'atomic structure' and should be discussed subsequently. However, the Periodic Table is placed in chapter 5, while atomic structure is introduced in chapter 6.
- An understanding of the placement of elements in the Periodic Table facilitates comprehension of the concept of 'chemical bonding'. However, 'electrochemistry' is discussed in chapter 3, before chemical bonding in chapter 7. This is not the correct sequence as it is illogical to discuss electrochemistry without a

Prescribed textbooks are inadequate in terms of the examples necessary to provide students with full comprehension of scientific phenomena.

prior and thorough knowledge of the concept of elements involved in chemical bonding, and in particular, 'ionic bonding'.

- 'Heavy water' is discussed without prior explanation of the concept of hydrogen 'isotopes', a component of heavy water.
- Chemical activities, such as building molecular models from locally available raw materials, facilitate comprehension of the molecular world. Such activities are not covered in the textbooks.
- The discussion of certain fundamental concepts, such as 'valency or mole', is not developed adequately.
- Rules for naming the compounds and writing down the formulae are missing.
- The method for balancing the 'ionic equations' is not explained in a sequence of steps in the same way as has been done for 'chemical equations'.
- An understanding of the reactivity series and oxidation-reduction reactions helps to explain why chemical reactions take place at all. Both these concepts have not been adequately explained and have been introduced late in the book. Without a proper correlation of these concepts with chemical reactions, the subsequent study of inorganic chemistry becomes problematic.
- The concept of acids and bases has been treated in a qualitative manner in contrast to the modern quantitative treatment.
- The chapter on Organic Chemistry is too brief. Some basic information about 'bio-molecules and macromolecules' that is a vital part of chemistry is missing. There is insufficient discussion and few examples on the basic principles underlying 'organic reactions' and 'reactions of functional groups'.

Given the deficiencies in content and in developing conceptual and analytical abilities, it is not surprising that students find themselves unable to tabulate, plot, interpret and analyze scientific data. They memorize the method of extraction of a metal from its ore, but are unable to correlate the ease of extraction of metals from their ores with their reactivity series. They learn about the electrolysis of water and sodium chloride, but are unable to predict the product of electrolysis of any binary compound. They are unable to deduce the electronic configuration from successive ionization energies or work out the advantages of a given fuel cell.

Organic chemistry, for example, is a fascinating real life subject that students can learn more convincingly if specific examples are included at each stage to illustrate the familiar and concrete uses of chemical reactions. The review of the Class 12 chemistry textbook for the Punjab board reveals that it suffers from serious conceptual weaknesses. Concept development and sequencing is dull and unimaginative for the most part. The book presents a boring picture of organic chemistry without showing any correlation of chemistry with real life. For example:

- The 'functional-group approach' used in most organic chemistry textbooks since the early 1960s no longer serves as an appropriate framework for teaching the fundamental concepts of organic chemistry. Modern organic chemistry textbooks use a 'mechanism-based approach' where the reaction types are based on common mechanisms rather than functional groups.

The mechanism-based approach brings together related subjects that are artificially separated and disconnected in the functional group approach. A thorough understanding of a small number of key principles intrinsic to the study of the structure and reactions of carbon-based compounds is thought to provide a better basis for retaining this knowledge and extending it to practical applications in other areas of science.

- A clear perception of the three-dimensional structure of various functional groups is vital to understanding their reactivity and helps in highlighting the areas of high or low electron densities. Without developing a clear concept of the structure of the functional group, students are unable to predict the reactivity of the compound toward a nucleophile or electrophile. Consequently, they are unable to establish a relation between the structure of a compound and its reactivity.
- The prescribed chemistry textbooks make no attempt to elaborate the basic structure of different compounds and their specific reactions. They merely describe a large variety of reactions and products without providing an insight into the mechanism of formation of these products from a variety of reactants. Since students are unable to apply this knowledge to the structure and function of important naturally occurring compounds, e.g., amino acids, proteins, carbohydrates, etc., they fail to comprehend the intricacies of common natural organic phenomena, such as combustion, digestion of food, etc. They are thus unable to predict the product/s of a reaction and cannot incorporate these reactions into strategies for planning the synthesis of a given new, known or unknown compound. Under the circumstances, students are left with the only alternative of memorizing the functional groups and the products of their reactions without prior development of the concept of the reactivity.

Libraries are too often under-utilized.

Given the deficiencies in content and in developing conceptual and analytical abilities, it is not surprising that students find themselves unable to tabulate, plot, interpret and analyze scientific data.

Examinations

The conduct of secondary and higher secondary examinations in Pakistan is centralized under various boards of education. Examinations occupy a pivotal position in Pakistan's education system: teaching practices in classrooms and laboratories, the content, quality and style of textbooks, and student attitudes are influenced (if not determined) by examinations. Schools and colleges are assessed, and assess themselves, on the basis of their students' performance in these exams. Achievements or failures are measured in terms of the pass percentage achieved.

Examinations can be used as a yardstick to judge the quality of teaching only if examinations are accepted as a credible test of the quality of learning. The following analysis suggests that this assumption does not hold. Examinations in Pakistan remain, at best, a test of the students' ability to memorize certain passages, solve problems from the respective textbooks, and reproduce them. Examinations do not test – indeed, are not designed to test – understanding, reasoning, originality or creativity.

Furthermore, it is in the nature of centralized examinations that they can at best test broad parameters of learning and not specific attainments of individual students. Efforts by students to build a science model in school or at home, for example, are not recognized or recorded as an academic achievement. Consequently, there is no motivation to question or innovate. Indeed, students resist such attempts because their mindset fixates on the means of getting good results in examinations, which has nothing to do with being inquisitive or questioning.

Structure of question papers. That the method of teaching is determined by examinations is revealed by the pattern of question papers. A detailed review of question papers of Classes 9-12 set by the Federal, Lahore, Gujranwala, Karachi, and Hyderabad Boards for the past five years, confirms the above hypothesis. While there are individual differences in content and style between the different Boards, certain

Scientists of the future?

That the method of teaching is determined by examinations is revealed by the pattern of question papers.

generalized conclusions regarding the pattern of question papers do emerge.

- Examinations are entirely textbook-based – questions correspond almost verbatim to the contents of the respective textbook.
- Each paper is divided into sections covering different parts of the course and the number of questions from each part is pre-defined and constant over time.
- There is 100 per cent choice in all the subjective questions. The student is required to attempt one out of two or two out of from questions in each section or sub-section.
- There is a fixed formula of distribution of marks. The 100 marks paper is divided into theory and practical, each carrying 75 and 25 marks, respectively. The theory part has five sections, each carrying 15 marks. The first section is the MCQs, which is compulsory. The other four sections contain questions from specified chapters. In physics, for example, there are two questions from Electromagnetism, one from Heat and one from Modern Physics. The MCQs involve fairly straightforward choices and no calculation or computing is involved. By contrast, MCQs in comparable international systems are distinguished by subtle differences and the selection of the correct answer requires careful thought. The 15 marks for each of the remaining four questions are further distributed as follows: 8 marks are for description of theory, 4 marks for numerical analysis, and 3 marks for reasoning. The first requires reproduction from the text, the second taxes the student's mind to some extent, and the third requires a brief explanation or reasoning of a phenomenon.
- The passing percentage is 33 per cent.

The combination of the above factors turns preparing for and passing an examination into a trivial exercise. For instance, consider a student who prepares for the physics examination by studying only two out of the four chapters of the Electromagnetic section. One question from each of these chapters is certain to be included in the question paper. By attempting one question each from the two chapters, the student can expect to cover 30 (15+15) marks. The multiple-choice section is also certain to include questions from these two chapters and can account for another 5 marks. If the student receives only 25 out of the 35 marks, s/he can pass the examination with the required minimum of 33 per cent, i.e., 25 out of 75.

Similarly, a student can pass the Class 12 chemistry examination by studying *either* Organic *or* Inorganic chemistry. This astonishing situation is made possible by the predictable pattern of the question paper, 100 per cent choice, and 33 per cent pass percentage.

Style and repetition of questions. The trivialization of the process of preparing for the examination is also indicated by the predictable pattern of the style of questions and of questions being repeated verbatim, sometimes in consecutive years. A review of all physics, chemistry and biology question papers set by the Federal, Lahore and Karachi Boards from 1998 to 2002 shows that the style of questions is such as to preclude the need to think and reason or to deliberate on a subject analytically.

There is even a tendency to include questions that have no relevance to learning science. Some such questions that have been repeatedly placed are: "Describe the contribution of scientists of the ancient period." "Write down the main achievements of Muslim scientists Al-Beruni and Yakoob Kindi." "Define some important branches of biology." "Describe the contribution of Muslim biologists in the field of biology." Questions relating to graphical interpretation of data or of equations are totally missing. Instead, they are plainly descriptive and invariably begin with such terms as *explain, define, discuss, describe, narrate,* or *write notes on*. Answering these questions merely requires memorization and reproduction of the memorized material. Some examples of the standard questions are shown in **box 6.4**: A few samples of the numerous cases of repeated questions are also cited **(see box 6.5)**.

For the physics class 10 examinations, the Federal Board repeated the same question on vectors consecutively in 2001 and 2002, while the Karachi Board repeated the same question on deriving the kinematic equation in 1998, 1999 and 2001. Further, the Karachi Board repeated the same question with the same numerical values in 1999 and 2002. With respect to the physics Class 11 examination, the Karachi board repeated the same question on linear momentum in 1999, 2001 and 2002 (pre-engineering), on projectile motion in 1998, 2000 and 2002 (pre-engineering), and on standing waves in 1999, 2001 and 2002 (pre-engineering).

For the chemistry Class 11 examinations, the Lahore Board reproduced the question on calculating the amount of ethyl acetate in equilibrium conditions verbatim from the NWFP Chemistry textbook and repeated it in 1999, 2001 and 2002 with the same numerical values. For the Class 12 examinations, the Federal Board repeated the same question on comparison of the Modern and Mendeleev's Periodic Table in 1998, 2001

BOX 6.4 INSTANCES OF DESCRIPTIVE QUESTIONS

Physics	Chemistry	Biology
• What is the special theory of relativity? • What is thermodynamics? • Give two statements of the Second Law of Thermodynamics. • Define molar specific heat. • Define entropy. • Define resolution of vectors. • Define rectilinear motion. • Write short notes on Coloumb law. • Write short notes on hydraulic press. • Write short notes on inclined plane. • Write short notes on three kinds of equilibrium.	• What is chemical equilibrium? • What is standard electrode potential? • What is combustion analysis? • Define catalysis. • Define chemical kinetics. • Define order of reaction. • Define artificial radioactivity. • Describe valency bond theory of a covalent bond. • Derive an expression for the general gas equation. • Discuss salient features of Mendeleev's Periodic Table. • State the Law of Mass Action.	• What is photosynthesis? • Write a note on the structure and functions of the human kidney. • Describe the internal structure of stem of brassica. • Describe the structure and functions of a neuron. • Describe muscles and movement. • Describe the structure of the human eye. • Describe sexual reproduction in frogs. • Narrate the composition of blood. • Write a note on the water cycle. • Write a note on bacterial deseases.

BOX 6.5 CASES OF REPEATED QUESTIONS

Federal Board 2nd Year 1998

CHEMISTRY PAPER II

Time Allowed: 3 hours **Maximum Marks: 75**

Note: Attempt FIVE questions in all, selecting at least TWO questions from each Section.

1(a) Discuss salient features of Mendeleev's Periodic table of elements.

Federal Board 2nd Year 2001

CHEMISTRY PAPER II

Time Allowed: 3 hours **Maximum Marks: 75**

Note: Attempt FIVE questions in all, selecting at least TWO questions from each Section.

1(a) How does modern periodic law differ from the Mendeleev's? Give a brief account of the Verticle columns and horizontal rows of periodic table of elements.

Federal Board 2nd Year 2002

CHEMISTRY PAPER II

Time Allowed: 3 hours **Maximum Marks: 75**

Note: Attempt FIVE questions in all, selecting at least TWO questions from each Section.

1(b) How does Modern Periodic Table differ from Mandeleev's Periodic Table?

Matric Lahore Board 1998

BILOLOGY GROUP I

Time Allowed: 2 1/2 hours **Maximum Marks: 56**

PART-II (Essay Type)

Note: Answer FOUR questions in all, selecting TWO questions from each section. Make diagram where necessary.

2(a) What is Nephron? Mention its structure and role played in excretion.

Matric Lahore Board 2000

BILOLOGY GROUP II (Essay Type)

Time Allowed: 2 1/2 hours **Maximum Marks: 56**

Note: Answer FOUR questions in all, selecting TWO questions from each section. Make diagram where necessary.

5(a) What is nephron? Mention its structure and role played in excretion.

Matric Lahore Board 2001

BILOLOGY GROUP I (Essay Type)

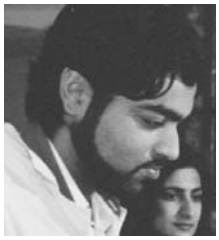
Time Allowed: 2 1/2 hours **Maximum Marks: 60**

Note: Answer FOUR questions in all selecting TWO questions from each Section. Make diagram where necessary.

5(a) Describe the structure of Nephron.

and 2002. And the Lahore Board repeated the same question on molecular orbital treatment of benzene in 1998, 1999 and 2001.

For the biology Class 10 examinations, the Federal, Lahore and Karachi Boards repeated a question on photosynthesis several times between 1998 and 2000. During the same period, the Lahore and Karachi Boards repeated questions on the human kidney, nephron and castor oil seeds every year. For example, the Lahore Board repeated the same question on nephron in 1999, 2000 and 2001, on kidney in 2000 and 2002, and on castor oil in 2001 and 2002. For the zoology Class 12 examinations, the Karachi Board asked the same question on sexual reproduction in 1998, 2000 and 2002 and, in the botany Class 12 examinations, has asked the same question on photosynthesis/dark reactions every year from 1998 to 2001.



Students do not tend to look outside the confines of the textbooks.

The disturbing aspect of this pattern of question papers is that not only are the problems repeated, even the numerical problems are verbatim reproductions from solved examples in the prescribed textbook **(see boxes 6.6 and 6.7)**. Essentially, students have to memorize the problems, including their numerical values, without comprehending their implications, then reproduce them, and expect to pass the examination. The Karachi Board has a relatively better record in this respect. While the overwhelming majority of questions have the same form as in textbooks, numerical values are often changed.

As a typical response to such a predictable examination paper, teachers and coaching centers tend to classify selected questions as important and dictate answers to students, who dutifully memorize them. Accordingly, good teachers are classified as those who can anticipate questions and prepare the students for the examinations.

BOX 6.6 CASES OF REPEATED QUESTIONS WITH SAME NUMERICAL VALUES

Matric Karachi Board 1998

PHYSICS

Time: Three **Maximum Marks: 75**

Note: Attempt Six questions in all, selecting Three questions from Section 'A', Two questions from Section 'B' and One question from Section'C'.

1 (a) Derive the equations $S = V_i t + \frac{1}{2} at^2$.

Matric Karachi Board 1999

PHYSICS (THEORY)

Time: Three Hours **Maximum Marks: 75**

1 (a) Derive the equation $S = V_i t + \frac{1}{2} at^2$.

Matric Karachi Board 2001

PHYSICS

Time: Three Hours **Maximum Marks: 75**

Note: Attempt Six questions in all, selecting Three questions from Section 'A', Two questions from Section 'B' and One questions from Section'C'.

1 (a) Derive the equation $S = V_i t + \frac{1}{2} at^2$.

Inter Part-I Karachi Board 1999

PHYSICS (THEORY)

Time: Three Hours Max. Marks: 75

SECTION 'A'

5 a) At $16^{\circ}C$ the length of an iron rod is 51 cm. How long is it at $99^{\circ}C$ if the Coefficient of Linear Expansion $\alpha = 12 \times 10^{-6^{\circ}}C^{-1}$.

Inter Part-I Karachi Board 2000

PHYSICS

Time: Three Hours Max. Marks: 75

Note: Attempt Six questions in all, selecting Three questions from section 'A' Two questions from Section 'B' and One question from Section 'C'.

SECTION 'A'

3 c) At $16^{\circ}C$ the length of an iron rod is 510 cm. How long is it an $99^{\circ}C$ if the co-efficient of linear expansion $\alpha = 12 \times 10^{-6^{\circ}}C^{-1}$?

BOX 6.7 CASES OF REPEATED QUESTIONS FROM TEXTBOOKS

Question reproduced verbatim with same numerical values from solved example 17.7 in Punjab Physics Textbook for Class XII.

FEDERAL BOARD 2ND YEAR 2001

PHYSICS PAPER II **Time Allowed: 3 hours**

Note: Attempt Five questions in al, selecting ONE question from SECTION-I. TWO questions from SECTION-II and ONE question from SECTION-III. Question NO:1 is compulsory.

8(b) A 50 Kev x-ray is scattered through an angle of 90^{o}. What is the energy of the x-ray after Compton scattering?

Question reproduced verbatim from Secondary School Biology, NISTE, FEP International (2000), page 171.

Matric Lahore Board 1998

BIOLOGY **Time Allowed: 2½ hours**
(ESSAY TYPE) **MAX. MARKS: 56**

Answer FOUR questions in all, selecting TWO questions from each Section.

SECTION I

2.(a) Write an essay on excretory system of human beings and explain how it helps in maintenance of homeostasis.

Repeated question with same numerical values reproduced verbatim from solved example on page 228 in NWFP Chemistry Textbook for Class XI.

Inter (Part-I) Lahore Board 1999

CHEMISTRY **Time Allowed: 2 hours and 40 minutes**
PAPER 1 (ESSAY TYPE) **MAX. MARKS: 60**

Attempt FOUR questions in all, selecting TWO questions from each section.

6 (b) 92 g of ethyl alcohol was mixed with 120 g of acetic acid to give equilibrium mixture. Calculate the amount of ethyl acetate at equilibrium when $K_c = 4.0$ (Atomic weights C = 12, 0 = 16, H = 1).

Inter (Part-I) Lahore Board 2001

CHEMISTRY **Time Allowed: 2 hours and 40 minutes**
PAPER 1 (ESSAY TYPE) **MAX. MARKS: 60**

Attempt FOUR questions in all, selecting TWO questions from each section.

8 (b) Calculate the weight of uncreacted acetic acid when 92.0 g of ethyl alcohol and 120 g of acetic acid are mixed to give an equilibrium mixture. $K_c = 4$.

Inter (Part-I) Lahore Board 2002

CHEMISTRY **Time Allowed: 2 hours and 40 minutes**
PAPER 1 (ESSAY TYPE) **MAX. MARKS: 60**

Attempt FOUR questions in all, selecting TWO questions from each section.

6 (b) 92g of ethyl alcohol, were mixed with 120g of acetic acid to give equilibrium mixture. Calculate the weight of ethyl acetate at equilibrium. $K_c = 4.0$

The cumulative effect of these factors is that students do not tend to look outside the confines of the textbooks. This is confirmed by a perusal of library lending records for Class 11 and 12 students. The average borrowing rate of relevant books that can be considered supplements of textbooks, was found to be three times per 100 students in five years. It is not clear whether on these rare occasions the book was loaned out to a teacher or to a student.

Laboratory practices

Science education requires that students actually perform experiments and draw inferences from their observations. This is the core of the scientific method and constitutes the basic training of students so that they learn that nature reveals its secrets through systematic and organized observation carried out under specific assumptions. However, laboratory training aspects of science education at all levels – middle to higher secondary – are found to be seriously wanting.

A review of laboratory manuals shows that laboratory work suffers from poor conceptualization of specific skills that students are supposed to acquire by doing experiments. Guidance for developing low cost experiments aimed at attaining specific pedagogical objectives and the development of specific skills is readily available on the Internet, yet the prescribed experiments in the syllabus continue to suffer from obsolescence.

Some newly prescribed textbooks encourage activity-based learning and require demonstrations during teaching. However, in cases where

More girls are studying science.

Laboratory training aspects of science education at all levels – middle to higher secondary – are found to be seriously wanting.

new and modern experiments have been introduced in the syllabus, there is a mismatch between the available resources – both material and human – and the goals to be achieved. Either the equipment required to perform experiments is not available or not available in sufficient quantity, or the supervisory skills are not available. With well over 50 students per class, there are only about two or three sets of equipment for experiments. Consequently, teachers or laboratory instructors demonstrate the experiment or activity, explaining the observations and dictating the results or conclusions to be drawn. In the case of biology, the experiment is converted to a displaying activity, where the student is shown charts with images of the organisms. Students do not themselves perform the experiments, but take notes that can be reproduced in examinations.

The large number of students and the shortage of equipment also necessitates that the practical examination, in most cases, does not require students to actually perform the experiment, but to describe how an experiment would be carried out, what the observations obtained would be, and the result to be derived from it – a thought experiment, so to speak.

Taken together, these factors lead to a situation where laboratory work has become more of a ritual and does not act to illustrate the concepts that have been learnt. Experiments are designed to make initiative and application unnecessary. Students have before them a laboratory manual that requires them to follow certain specified steps, obtain specified readings, plug them into certain given equations, and calculate specified results to confirm a given proposition. The experimental work as defined becomes a series of instructions that are to be followed to obtain pre-ordained results. Experiments are not activity-oriented, but are yet another exercise in memorization.

Students do not themselves perform the experiments, but take notes that can be reproduced in examinations.


FOCUS ON PAKISTAN
JUDO
Colourful Scotland
WAPAHA

CITIZENS OF ALIEN WORLDS

7

"The imperative of national integration and sociopolitical harmony demands that a uniform education system be introduced."

CITIZENS OF ALIEN WORLDS

The Pakistan National Education Policy of 1969 lamented that there was an "almost a caste-like distinction between those who feel at ease in expressing themselves in English and those who do not". This situation continues to exist and is a product of the country's education system, which appears to suffer from a kind of 'educational apartheid'.

There are two broad streams of education, characterized basically by the medium of instruction. One stream uses English and the other uses Urdu. English-medium schools can be further divided into two broad categories. First, ‘elite’ schools run by missionary or other institutions, and private schools that charge at least a four-figure monthly tuition fee per child and whose total education costs per child can even approach five-figures. And second, 'non-elite' private schools that charge up to a three-figure monthly tuition per child. Urdu-medium educational institutions can also be classified into two broad categories. First, government schools and, in some cases, private schools, that charge nominal tuition per child. And second, *madrassahs*, (institutions of Islamic religious learning) that charge nominal or no tuition fees, and in many cases, even offer free boarding and lodging. There are several other overlapping sub-streams within the four categories: government model schools, cadet schools run by the military, schools run by religious, military and private foundations, individually-run *madrassahs*, etc. Since these sub-streams account for a very small percentage of the total number of schooled students in the country, they have not been included in the analysis.

Competing for the best.

Elite English-medium schools are relatively few in number, and low in coverage, as they operate mostly in urban areas. They are operated and managed professionally and focus on quality education. The private schools among them are run as medium-scale corporations, with a strong 'customer' focus and a 'brand image' commitment, and charge significantly higher tuition fees. Non-elite English-medium schools are generally privately owned and family-operated through a personalized management system. Of the students enrolled in private English-medium schools, about 2 per cent are in elite schools that charge annual fees of more than Rs. 20,000, while over 67 per cent are in non-elite schools that charge less than Rs. 2,500. The classification of English medium schools as elite or non-elite is explained in **box 7.1**.

Urdu-medium schools are largely government operated and provide education to about 70 per cent of the total school age population. In fact, the public sector is the main provider of education in Pakistan. In primary education, the public sector constitutes 73 per cent of total primary enrolment, with a larger proportion in rural areas. The share of public sector enrolment in rural areas is 82 per cent compared to 62 per cent in urban areas **(see table 7.1)**. Public schools are administered by the provincial Departments of Education, although their management has now been transferred to the district governments. *Madrassahs* cater to about one per cent of the student population and are regulated by their respective Boards.

TABLE 7.1 DISTRIBUTION OF PRIMARY ENROLMENT, 2002

	Urban	Rural	Overall
Government	62.4	81.8	73.0
Private	36.9	17.1	26.1
Madrassah	0.7	1.1	0.9
Total	**100**	**100**	**100**

Source: PIHS (2002)

Income is the primary determinant of whether a child goes to an English-medium or Urdu-medium school or to a *madrassah*. Upper income households generally send their children to English-medium schools and lower income households send their children, if at all, to Urdu-medium schools or *madrassahs*. At a further level of disaggregation, it can be said that elite English-medium schools are accessed by upper-income groups, non-elite English-medium schools by middle-income groups, and Urdu-medium schools and *madrassahs* by lower-middle and lower-income groups. However, the ideological content of the curricula does not follow the English-Urdu dichotomy. There is a separate division with respect to 'ideology'. The elite and non-elite English-medium schools and the Urdu-medium schools follow a secular curriculum, while the *madrassahs* offer religious education.

The objective of this analysis is not to present any stream of education as superior to the others but to highlight an alarming implication: students of these different streams hold such different worldviews and opinions that they seem to be living in different worlds. This has occurred partly because of differences in textbooks and methods of learning and partly because of differences in the discourses students are exposed to

Income is the primary determinant of whether a child goes to an English-medium or Urdu-medium school or to a madrassah.

inside and outside their schools. In many respects, these worldviews are even hostile to each other to an extent that has polarized society and impeded national cohesion.

BOX 7.1 IDENTIFYING ELITE VERSUS NON-ELITE ENGLISH-MEDIUM SCHOOLS

The analysis of student enrolment in different education streams in terms of income groups is based on data available from the Pakistan Integrated Household Survey (PIHS), 1999. PIHS provides the following data relevant for this analysis: household income, information on whether children go to Urdu-medium or English-medium schools or to *madrassahs*, fees paid per child, total expenditure on education, and ownership of selected assets.

The analysis required a number of definitional decisions. In this respect, income groups have been classified as follows:

- Households earning less than Rs. 50,000 per annum are classified as 'poor';
- Households earning between Rs. 50,000 and Rs. 100,000 per annum are classified as 'lower middle income';
- Households earning between Rs. 100,000 and Rs. 250,000 per annum are classified as 'middle income';
- Households earning over Rs. 250,000 per annum are classified as 'upper income'.

The classification of schools poses some definitional challenges. English-medium schools, Urdu-medium schools and *madrassahs* are self-defined. However, classifying English-medium schools into elite and non-elite categories presented some problems of definition. One possible approach was to classify households sending their children to English-medium schools on the basis of fees per student charged by schools, and to classify cases where the monthly fees are above Rs. 500 as elite, while those below Rs. 500 would be categorized as non-elite. Another possibility was to use per pupil household expenditure on education as the determinant of whether a child went to an elite or non-elite school. For example, cases where the monthly per pupil expenditure on education is above Rs. 1,000 could be classified as elite, and where it is below Rs.1,000, could be classfied as non-elite. Both possibilities appeared to be problematic, as there are institutionally run elite schools that offer high quality education comparable to privately run high fees elite schools that charge fees that are more in line with non-elite schools. A third possibility was to use a combination of per pupil household expenditure on education and a household asset measure that defines income stratification.

The third option was adopted and households that send their children to elite English-medium schools have been identified as those that incur a per-pupil education expenditure of more than Rs. 12,000 per annum and own a car; given that car ownership is a defining characteristic of upper-income households. Households that do not meet either condition and are reported to be sending their children to English-medium schools are considered to be sending them to non-elite schools.

THE HISTORICAL LEGACY

The region in which Pakistan is located has an ancient tradition of both formal and informal learning. However, this has varied between different socioeconomic strata. Those at the bottom of the social ladder generally received no formal education at all, while those in the upper echelons learned languages, literature, theology and other subjects. During the pre-colonial era, there were hundreds of *maktabs* (Persian schools), *madrassahs*, and schools imparting education in local languages. Given that Persian was the language of the Court, there was a majority of *maktabs*, ostensibly because knowledge of Persian offered greater opportunities for employment as functionaries of the Court.

Language became a symbol of the educational caste system.

Classroom in a Madrassah.

With the establishment of British rule, English was substituted for Persian as the official language. Access to the new corridors of power and privilege required a degree of proficiency in the English language. Several English-medium schools were set up, initially by missionaries, for the benefit of the native elite. Urdu had developed as the informal *lingua franca* of North and Northwest British India and was introduced as a medium of instruction in government schools. This created a new basis for socioeconomic stratification, with schooling and the medium of instruction corresponding to one's position in the hierarchy of wealth in the colonial state.

The poor continued to remain illiterate as there were no schools, or at least no affordable ones, that they could access. Some of them did, however, study in the *madrassahs*, which were free and also offered free food and lodging. Lower middle and middle income families sent their children to Urdu-medium or other local language schools, i.e., Sindhi-medium schools in Sindh. 'Native' officers serving in the British Indian bureaucracy and military, the traditional elite, and other upper income families sent their children to English-medium schools.

All higher education in colleges and universities was in English, which had three implications. First, those studying in Urdu-medium schools, Sindhi-medium schools, or *madrassahs*, found their entry into higher institutions of learning restricted. Second, they found that their avenues for upward economic and social mobility effectively closed. And third, as a consequence, they found themselves excluded from the corridors of political power. Language became a symbol of the educational caste system: the elite used English almost as their first language, alienating them from their non-English educated compatriots, and the poor were simply shut out. This historical legacy continues.

INCOME AND SCHOOLING

The strong relationship between a household's income group and the status and medium of instruction of their children's schools is confirmed by household level data provided by the Pakistan Integrated Household Survey (PIHS) 1998-99. A detailed examination of the distribution of students between elite English-medium, non-elite English-medium, Urdu-medium schools and *madrassahs* by income group, as presented in **table 7.2**, shows the following:

- The percentage of children enrolled in elite English-medium schools belonging to poor and lower-income households earning less than Rs. 100,000 per annum or Rs. 9,000 per month, is almost zero or negligible. Rather, upper-income households earning over Rs. 100,000 per annum dominate almost the entire student body of elite English-medium schools, with over two-thirds belonging to upper income households earning over Rs. 250,000 per annum. The distribution shows that elite English-medium schools are almost the exclusive privilege of high income groups.
- Among students enrolled in non-elite English-medium schools, nearly 20 per cent belong to the poor, while over 70 per cent belong to households earning between Rs. 50,000 and Rs. 250,000 per annum or between Rs. 8,000 and 20,000 per month. About 10 per cent of non-elite English-medium students belong to households earning over Rs. 250,000 per annum. The distribution shows that middle and upper-middle income households mostly send their children to non-elite English medium schools.
- Among students enrolled in Urdu-medium schools, 40 per cent belong to households earning less than Rs. 50,000 per annum and 38 per cent belong to families earning between Rs. 50,000 and Rs.

TABLE 7.2 DISTRIBUTION OF SCHOOL ENROLMENT BY EDUCATION SYSTEM AND BY INCOME

Income Group Annual (Rs.)	Elite English-Medium Schools	Non-elite English-Medium Schools	Urdu-Medium Schools	*Madrassahs*
Overall	**100.0**	**100.0**	**100.0**	**100.0**
Less than 50,000	0.0	18.9	40.4	43.0
50,000-100,000	1.5	35.3	38.1	29.7
100,000-250,000	32.1	35.8	18.1	15.6
More than 250,000	66.4	10.0	3.4	11.7
Urban	**100.0**	**100.0**	**100.0**	**100.0**
Less than 50,000	0.0	12.3	27.2	24.6
50,000-100,000	1.5	35.1	44.7	40.0
100,000-250,000	32.1	41.4	24.9	20.0
More than 250,000	66.4	11.2	3.2	15.4
Rural	**100.0**	**100.0**	**100.0**	**100.0**
Less than 50,000	0.0	38.7	51.5	61.9
50,000-100,000	0.0	35.9	32.6	19.0
100,000-250,000	33.3	19.1	12.4	11.1
More than 250,000	66.7	6.3	3.6	7.9

Source: PIHS (1998-99)

Middle and upper-middle income households mostly send their children to non-elite English medium schools.

Urdu-medium graduates have limited opportunities.

100,000 per annum. In other words, nearly 80 percent of students enrolled in Urdu-medium schools belong to households earning less than Rs. 9,000 per month. This percentage drops systematically as the income bracket rises, with only 3 per cent of students in Urdu-medium schools belonging to households earning over Rs. 250,000 per annum. Clearly, poor and lower middle income households send their children to Urdu-medium schools.

- Among students enrolled in *madrassahs*, 43 per cent belong to poor households earning less than Rs. 50,000 per annum and about 30 per cent belong to lower-middle income households earning between Rs. 50,000 and Rs. 100,000 per annum. In other words, nearly three-quarters of the students in *madrassahs* belong to poor or lower-middle class households. The remaining 27 per cent of students belong to upper-middle and upper income households earning over Rs. 100,000 per annum. It is notable that about 12 per cent of *madrassah* students belong to upper income households earning over Rs. 250,000 per annum.
- The urban-rural breakdown provides additional insights. While almost 20 per cent of students enrolled in English-medium schools belong to the poor on an aggregate level, this increases to almost 40 per cent for rural areas and less than 15 per cent in urban areas. Similarly, for Urdu-medium schools, the percentage of poor students is over 50 per cent in rural areas and less than 30 per cent in urban areas. The same rural concentration is evident in the case of *madrassahs* as well. On the other hand, the level stratification of students in elite English-medium schools is identical in urban and rural areas.

Evidence that the *madrassahs* cater primarily to the poor and lower income sections of the population is supported by other research. According to one survey of *madrassah* students, 89 per cent of respondents cited socioeconomic factors and 6 per cent cited religious factors for joining *madrassahs*. Another study found 80 per cent of *madrassah* students in Peshawar, Multan and Gujranwala to be sons of

small or landless peasants, rural artisans, rural labourers, small shopkeepers, and imams of village mosques. SPDC's own investigation has found that, in a majority of cases, parents admitted their children to *madrassahs* as they could not afford to feed them or educate them even in low-cost government schools.

Madrassahs are able to cater to the mass of poor students based on two factors. First, their own operating costs are extremely low compared to other private or even government educational institutions. Average annual cost of tuition, books, food and accommodation is reported to be as low as Rs. 6,000 per student or less. And second, *madrassahs* are financed liberally through philanthropy and, to some extent, government grants. A major factor in the increasing popularity of *madrassahs* among the poor can also be attributed to the 'welfare state' role they perform.

ROLE OF TEXTBOOKS

The identity and value system of children is strongly shaped by the content of their curricula and textbooks. Elite and non-elite English-medium and Urdu-medium schools follow curricula that may be described as secular, despite a heavy stress on 'Islamic Ideology' in officially prescribed textbooks used by students appearing for examinations in the Pakistani system. *Madrassahs* follow a curriculum that is distinctly religious. A comparison of the curriculum and textbooks of the different systems leads to disturbing conclusions.

Elite English-medium schools prepare students for the Ordinary and Advanced level examinations conducted by the University of Cambridge in the UK. The curriculum, textbooks and teaching methods of these schools are known to follow modern pedagogical standards and teachers are encouraged to be innovative and to promote thinking, exploring and questioning on the part of students. This is partly ensured through the choice of multiple textbooks and other reading materials. For example, the history component of Pakistan Studies comprises six recommended textbooks for students and 16 reference books for teachers. The teaching of classics – albeit, abridged versions – for English Literature, World History, etc., is extensive in order to broaden students' knowledge-base and awareness.

Greater diversity in the use of textbooks creates opportunities for discussion, promotes diversity in thoughts and ideas, and tends to establish the basis for a pluralistic and tolerant mindset. Elite English-medium school students are far more conversant with English language books and films and are exposed to discourses that are likely to give them a relatively more internationalist outlook. On the other hand, most such students appear to be unenthusiastic about subjects such as Urdu and *Islamiat* (teaching of the *Qur'an* and *Hadith*; Islamic history and jurisprudence) and are generally unfamiliar with Pakistani writers and poets and, in some cases, even Pakistani film and television stars.

Urdu-medium and non-elite English medium schools prepare students for the Secondary and Higher Secondary School Certificates examinations conducted by the provincial Boards of Secondary and Intermediate Examinations. These schools are known to take a rather staid and rigid approach to curriculum, textbooks and teaching methods.

The limited discourses to which Urdu-medium students are exposed are likely to lead to a somewhat parochial outlook with respect to both domestic and international social and political issues.

Centre of excellence in medical education.

The textbooks are prepared under the supervision of the provincial Textbook Boards along the guidelines of the curriculum approved by the Federal Ministry of Education. Generally, there is a single prescribed textbook per subject, e.g., English, Pakistan Studies, etc. Subjects like World History are not touched upon at all. Alternative reading material is neither sought nor encouraged. The prescribed textbooks tend to provide selective information or to even exclude information deemed undesirable and unnecessary to reflect the values and policies of the government in power. In any case, a single textbook leaves students little choice but to memorize facts and imbibe the given point of view. This approach does not create opportunities for discussion or dialogue and tends to establish the basis for a single-dimensional and exclusivist mindset. The limited discourses to which Urdu-medium students are exposed are likely to lead to a somewhat parochial outlook with respect to both domestic and international social and political issues.

The comparison of the two systems – the Cambridge system and the Pakistani system – is carried out by exploring the differences in the content and style of the history sections of the respective Pakistan Studies textbooks for Class 10. The textbooks are (i) Pakistan Studies, Punjab Textbook Board (Class 10), Lahore and (ii) Pakistan: A Historical and Contemporary Look (Pakistan Studies: History Component), Oxford University Press. The former is prescribed, while the latter is one of the recommended texts. Contents of both textbooks are presented in **box 7.2**.

The O' level textbook

The 190-page O' level textbook is divided into nine chapters of between 11 and 25 pages. The book is logically organized in chronological order and covers all the major periods, dynasties, and events from the Stone Age period up to 1988. Given that this is one of six recommended books, the level of detail and coverage is significant. While no history is neutral, the book is written in a non-partisan style, attempting to present facts rather than to indoctrinate.

BOX 7.2 CONTENTS OF O' LEVELS AND SSC PAKISTAN STUDIES TEXTBOOKS

Pakistan, A Historical and Contemporary Look
Pakistan Studies: History Component
Oxford University Press, 1999

Pakistan Studies, Class X
Punjab Textbook Board, Lahore, 2003
(History Component)

Centre of higher learning in Balochistan.

The first chapter is devoted to the ancient, pre-Islamic history of the region that now comprises Pakistan. It covers the Indus Valley civilization, the arrival of the Aryans and the development of Hinduism, the Persian and Greek invasions, and the interplay of power dynamics between the Greeks and the emerging Mauryan Empire up to the year 630 AD.

The Muslim period from the arrival of Mohammed bin Qasim in 712 AD to the founding of Pakistan in 1947 is covered in chapters 2 through 6. The second chapter details early Muslim rule in the region. It chronicles the circumstances leading to the Arab invasion under Mohammed bin Qasim, and the invasions of Mahmud of Ghazni and their respective efforts and challenges to consolidate Muslim rule. It discusses the establishment of the Delhi sultanate, and the reigns of the so-called Slave Dynasty, the Khiljis, the Tughluqs, and the Lodhis.

The third chapter covers the entire Mughal era from the Emperors Babur to Aurangzeb over a 200-year period. It details the major events, achievements, conflicts, and failings of each emperor and the role each played in shaping history. The circumstances and causes of the decline and fall of the Mughal Empire are also dealt with in some detail. One whole chapter is devoted to major thinkers, intellectuals and leaders of the region over a 300-year period from Shaikh Ahmad Sirhindi to Quaid-e-Azam, and documents their contribution to the development of social and political thought and the various movements in the region.

Chapters 5 and 6 record a momentous era covering over 300 years in the history of the region. It describes the rise of the East India Company since 1612 and the circumstances leading to the establishment of British colonial rule, including the 1857 War of Independence and the consequent rise of nationalist movements, leading to the founding of the Muslim League. It documents the torturous process of British government measures, the moves and counter-moves by the Congress and the Muslim League, and the numerous rounds of negotiations that had a profound bearing on events leading to the establishment of Pakistan. These include events such as the Morley-Minto Reforms, the Lucknow Pact, the Khilafat Movement, Jinnah's Fourteen Points, the Roundtable

Conferences, the Government of India Act of 1935, elections of 1937, adoption of the Pakistan Resolution, the Quit India Movement, Gandhi-Jinnah Talks, the Cabinet Mission Plan and the Radcliffe Award.

The period from the establishment of Pakistan to 1988 is covered in two chapters, dealing with the pre-1971 and post-1971 periods. Again, considerable attention is given to detailing the important events. The pre-1971 chapter covers the role of Quaid-e-Azam before and after independence, the question of accession of princely states and the genesis of the Kashmir dispute, and the matter of division of assets and waters of the river Indus. It details the initial attempts at framing the Constitution, the 1956 Constitution, the ensuing political crises, Martial Law of 1958, the 1962 Constitution, Ayub Khan's decade of development, the elections of 1970 under Yahya Khan, the East Pakistan crisis, and the break-up of the country.

The post-1971 chapter outlines the events during the regime of Zulfiqar Ali Bhutto, the 1973 Constitution, the economic reforms, the movement following the elections of 1977, Martial Law of 1977, the Islamization process, the war in Afghanistan, the brief Junejo period, and the death of Zia-ul-Haq in 1988. The last chapter is devoted to Pakistan's external relations with other important countries of the world.

The SSC textbook

The prescribed Pakistan Studies textbook for Class 10 devotes only 54 pages to history and is more noteworthy for what it excludes than what it includes. Given that this is the only text, the paucity of detail and coverage is surprising. Entire periods of history are missing and other events have been casually mentioned. No attempt has been made to identify circumstances leading to particular events or to establish the relationships between different events. There are factual errors and selective, even confusing, chronologies.

Non-elite school.

The SSC textbook appears to be less an attempt to inform students about facts of history as they occurred and more an attempt to indoctrinate.

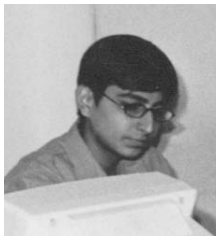
Interfering with the chronological order of historical events is tantamount to distorting the interpretation of history. No history, as stated earlier, is neutral; however, this book appears to be less an attempt to inform students about facts of history as they occurred and more an attempt to indoctrinate. A reading of the relevant portions of the book is likely to give the uninitiated reader the false view that the region's history was marked exclusively by religious struggles without providing any insights into the interplay of social/political/economic forces engaged in any such struggle.

There are innumerable repetitive statements of little or no historical significance. For example, on pages 17 and 18, it states: "The native inhabitants of the shore-lands embraced Islam as they were impressed by the Islamic character of these traders." One sentence later, it states again, "A large number of local people embraced Islam as they were impressed by the social life, fair treatment and tolerance of Muslims." And yet again, five sentences later, it repeats, "A large number of Hindus embraced Islam, impressed by their pious life, high character and fair treatment."

The history section of the book dispenses with the entire history of the region before 712 AD and begins with the arrival of Muslims in the sub-continent and the propagation of Islam. However, Mohammed bin Qasim is mentioned nowhere in the account. The narrative then jumps forward almost 300 years to Mahmud of Ghazni's incursions into Punjab. There follows a listing of Sufi saints from Islam Shaikh Islam Lahori to Shah Abdul Latif Bhattai over a 700-year period from 1000 to 1700. The narrative then jumps backwards about 500 years to Qutubuddin Aibak. After a page on the resulting influence of Islam on the culture of the region, the book almost omits the entire Mughal period from emperors Babur to Shah Jehan and jumps forward by 450 years to the Mughal Emperor Aurangzeb. There is no discussion of the causes of the decline and demise of the Mughal Empire. A brief mention of Nadar Shah, Shah Wali Ullah Dehlvi, Syed Ahmad Brailvi, etc., concludes the chapter on the history of the region prior to the commencement of the movement for Pakistan.

The book is completely silent on the British colonial period. Nor is there any reference to the Renaissance in Europe, the development of learning and growth of technology and industry, and the consequential need for cheap raw materials and captive markets as the motive for colonialism. There is no reference to the superior social and political organization that enabled a handful of small countries to occupy and dominate more than half the world. The omission deprives students from gaining a crucial lesson that independence and affluence are based on the power of knowledge and command over technology.

The chapter on the Pakistan Movement is also selective and omits key events that shaped the nature of the struggle for Pakistan and continue to influence domestic and regional issues. Only the following events are mentioned during the half-a-century-long movement (in the order presented in the book): the founding of the Muslim League in 1906, the founding of the Muhammedan Anglo-Oriental College in Aligarh in 1875, the Khilafat Movement following World War I, the Nehru Report, Jinnah's Fourteen Points, the Government of India Act 1935 (erroneously referred to as the ‘new constitution’), the 1937 elections, the Pakistan Resolution of 1940, the 1946 elections, the Cabinet Mission Plan, Direct



Action, and the establishment of Pakistan. With the exception of the Fourteen Points, which have been reproduced in full, all other events have been dealt with rather cursorily. There is a complete absence of any discussion or analysis on the forces that shaped social and political events, the process of the formation and growth of the Muslim League, the alliances made and broken, the protracted negotiations with the Congress and other Muslim organizations, or the moves and counter moves of the British government, the Congress and the Muslim League.

The brief nine-page history section of the chapter on post-independence Pakistan, titled 'The State and Government of Pakistan', covering half a century of the country's life, begins thus:

"In the beginning man lived in family units. When these family units could not meet their defence, economic and other needs many families merged themselves into a tribe. Later on, many tribes were united and formed a state. State means a country."

Thereafter, it describes the Objectives Resolution and constitution making process from the 1950's to 1973. It mentions the military takeover in 1977, the restoration of the amended constitution in 1985, and the election and dismissal of the National Assembly in 1985 and 1986 without mentioning Prime Minister Mohammed Khan Junejo. It then lists the two-time elections and dismissals of Benazir Bhutto and Nawaz Sharif, and the military takeover in 1999. The chapter's history section concludes: "Now the democracy has restorted (sic) in the country after the general election of 10th October 2002 …" . An eight-line section on the July 2001 Pakistan-India summit meeting at Agra, India is erroneously included in the chapter on "Pakistan's relations with Muslim countries" **(see box 7.3)**.

On the whole, uninitiated readers without access to other reading material are likely to remain ignorant of over a thousand years of the history of the region relating to the Aryans, Hindus, Buddhists, Mauryans, Mughals and British. They are unlikely to be cognizant of the interplay of political, social and economic forces that shaped events leading to the creation of Pakistan in 1947, the breakup of the country in 1971, and the repeated suspensions of democracy and military takeovers. It is improbable that they will be sufficiently aware of the profound and diverse influence of these eras and events on the culture and politics of the region, and consequently unlikely that they could fully understand the intricate dynamics of events occurring today in the country and the region. As a consequence, instead of being able to acknowledge diversity in points of view, they are likely to look at the world in over-simplified, uncritical, 'black and white' and 'us versus them' terms and to develop single-dimensional, exclusivist mindsets. At the same time however, given the poor intellectual standard of the material and its presentation in the textbook, students are also unlikely to be fully convinced of whatever position they hold or able to defend their position in an intellectual debate.

The *madrassah* curriculum

Madrassah is the Arabic word for school and first emerged as an organized system of education in present-day Iraq in the 11th century. The original curriculum consisted of two main branches of learning: revealed knowledge (*manqoolat*) and knowledge acquired through intellectual endeavour (*ma'aqoolat*,) and encompassing the following topics:

BOX 7.3 SAMPLE REPRODUCTIONS FROM THE SSC TEXTBOOK

Chapter 3

THE STATE AND GOVERNMENT OF PAKISTAN

In the beginning man lived in family units. When these family units could not meet their defence, economic and other needs many families merged themselves into a tribe. Later on, many tribes were united and formed a state. State means a country. A state is established on the basis of certain principles. To run the affairs of a state administrative and legal institutions are set up. These institutions are run by individuals in accordance with fixed and prescribed rules and regulations. In this way, individuals and institutions together constitute the Government. The collection of laws and rules and regulations which govern the conduct of Government and which determine the powers and

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He used his majority to eliminate the powers of the president to remove the government and the National Assembly.

Nawaz Sharif continued to increase his powers but he faced serious political and economic problems. On 12 October 1999, the military dismissed Nawaz Sharif's government and assumed power under the leadership of the Army Chief, General Pervez Musharraf. The Constitution was suspended and a Provincial Constitutional Order was issued. No martial law was imposed. The new military government promised to end corruption in the government, stop the misuse of state resources and patronage, improve the economy, strengthen the federation and conduct a through accountability of all those who held government appointments in the past.

Now the democracy has restorted in the country after the general election of 10th October 2002 General Pervez Musharaf was elected as president of Pakistan for five years & Mir Zafar ullah Jamali was elected as Prime Minister of the country.

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Chapter 8

PAKISTAN'S RELATIONS WITH MUSLIM COUNTRIES

Islam played a pivotal role in the Pakistan Movement. Islam is an integral part of the national identity of Pakistan. The Government and people of Pakistan feel a special attachment for the Muslims living in other countries of the world. The people of Pakistan have a strong desire to develop close and intimate relations with the Muslim countries. It is laid down in the constitution of Pakistan that Government of Pakistan would take suitable measures for developing brotherly relations with other Muslim countries.

Pakistan has always been a pioneer of Islamic brotherhood and promoter of the concept of Islamic Millat. According to this concept the Muslims all over the world are an international brotherhood and members of Islamic millat without any distinction of territory,

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Pakistan has always upheld the cause of unity and cooperation among the Muslim countries. She desires that all the Muslim countries should sink their differences and unite under one centre so that the concept of Islamic Millat should become a solid reality. That is why Pakistan has been associated With the establishment of the Islamic Conference and its growth and development from the very beginning.

Agra Conference 14 July 2001 to 17 July 2001:

It was the first conference (held in Agra) between president of Pakistan General Perveez Musharf and the Prime Minister of India Atil Bahari Vajpayee. It got a lot of popularity in Pakistan and India as well as in the world. General Perveez Musharf pleaded his case (issue of Kashmir) beautifully and bravery. It was appreciated all over the world but unluckily this burning issue is still pending.

Questions

A.

1. Review the relations of Pakistan with the Arab countries.
2. Write a note on the relations of Pakistan with Iran and Turkey. Describe the objects and performance of Economic Cooperation Organization (E.C.O).
3. Briefly describe the relations of Pakistan with any two of the following countries: Bangladesh, Indonesia, Malaysia.
4. Review the foreign policy of Pakistan with reference to the Palestine problems.
5. What are the basic principles of Islamic Conference. Describe its organizational structure.

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Source: *Pakistan Studies:* Class X, Lahore: Punjab Textbook Board, 2003

1. *Qur'an*: Tajweed, Qirat, Hifz and Tafseer (Correct recitation of *Qur'an*, Recitation of *Qur'an*, Memorization of *Qur'an* and Exegesis of the *Qur'an* respectively)
2. *Hadith* (Sayings of the Prophet, Peace be upon Him)
3. *Fiqah* and *Usul-e-Fiqah* (Islamic jurisprudence and its principles)
4. *Ilm-ul- Kalam* (Philosophy of religion)
5. *Tasawuf* (Mysticism)
6. *Nahw and Lughat* (Syntax and grammar)
7. *Mantiq* (Logic)
8. *Hisaab* (Arithmetic)
9. *Ilm-e-Hindsa* (Geometry)
10. *Ilm-ul-Hae'at* (Astronomy)
11. *Ilm-ul-Tabiaat* (Physical Sciences)
12. *Mausiqi* (Music)

The term '*madrassah*' has now come to be used exclusively for institutions of classical Islamic religious learning. They stand apart from other streams of education in the country, i.e., English-medium and Urdu-medium, in the sense that their curriculum is essentially religious.

The number of registered *madrassahs* in 2002 is reported to be 9,880. Information on unregistered *madrassahs* is not available. *Madrassahs* are regulated by five central boards representing the different sects/sub-sects: Barelvi, Deobandi, Ahl-e-Hadith, Shia and Jamaat-e-Islami **(see table 7.3)**. Interestingly, all the boards have their headquarters in Punjab.

TABLE 7.3 CENTRAL BOARDS OF *MADRASSAHS* IN PAKISTAN

Name of Board	Sect Sub-sect	Head Office	Date of Establishment
Wafaq-ul-Madaris	Deobandi	Multan	1985
Tanzim-ul-Madaris	Barelvi	Lahore	1960
Wafaq-ul-Madaris-al-Salafia	Ahl-e-Hadith	Faisalabad	1978
Rabta-tul-Madaris-al-Islamia	Jamat-i-tslami	Lahore	1986
Wafaq-ul-Madaris Pakistan	Shia	Lahore	1962

Source: Offices of respective Boards

The largest numbers of *madrassahs*, 7,000 or over 70 per cent, are under the Deobandi Wafaq-ul-Madaris, followed by nearly 1,600 *madrassahs* under the Barelvi Tanzim-ul-Madaris. There are over 400 *madrassahs* under the Shia Wafaq-ul-Madaris Pakistan. The number of *madrassahs* has grown rapidly since 1988. The largest (nearly nine-fold) growth has occurred for *madrassahs* under the Shia Wafaq-ul-Madaris Pakistan, albeit from a very small base, followed by four-fold growth under the Deobandi Wafaq-ul-Madaris, from an already large base. The number of *madrassahs* under the Barelvi Tanzim-ul-Madaris and Ahl-e-Hadith Wafaq-ul-Madaris-al-Salaria has doubled during this period **(see table 7.4)**.

The Boards determine the curriculum and syllabus, collect registration and examination fees, and prepare examination papers. The

TABLE 7.4 GROWTH IN NUMBER OF *MADRASSAHS*

Name	1988	2002
Wafaq-ul-Madaris	1,779	7,000
Tanzim-ul-Madaris	717	1,585
Wafaq-ul-Madaris-al-Salafia	161	376
Rabta-tul-Madaris-al-Islamia	97*	500*
Wafaq-ul-Madaris Pakistan	47	419
Total	**2,801**	**9,880**

Sources: Various Central Boards of *Madrassahs*
GOP (1998)
Report of Sindh Police, *Dawn*, January 16, 2003
*This figure, in GOP (1988), includes *madrassahs* in the 'other' category.

examinations are conducted by the *madrassahs*, but the Boards declare the results. The Boards offer a programme of education from primary to advanced levels. For example, the Wafaq-ul-Madaris offers a 17-year programme, spread over seven levels. The first level, *Ibtedaiyah*, covers a five-year period equivalent to the primary school level. The second level, *Mutawassitah*, covers a three-year period and is equivalent to the middle school level. The third to the sixth levels each have a duration of two years. The third level, *Thanwiyah-e-Aammah*, is equivalent to the secondary school level. The fourth level, *Thanwiyah-e-Khassah*, is equivalent to the higher secondary school level. The fifth level, *Aaliah*, is equivalent to the Bachelor's level, the sixth level, *Aalemiyah*, is equivalent to the Master's level. The final one-year level, *Takmeel*, can be considered to be equivalent to the post-Master's level **(see table 7.5)**.

TABLE 7.5 LEVELS OF EDUCATION IN WAFAQ-UL-MADARIS

Level	Duration	Equivalence
Ibtedaiyah	5 years	Primary
Mutawassetah	3 years	Middle
Thanviyah-e-Ammah	2years	Secondary
Thanviyah-e-Khassah	2 years	Higher Secondary
Aaliah	2 years	Bachelors
Aalemiyah	2 years	Masters
Takmeel	1 year	Post Masters

Source: Nayyar (1998)

The syllabi and textbooks of *madrassahs* belonging to the Sunni sect are based on a standardized curriculum called *Dars-e-Nizami* that was developed by Mullah Nizam Uddin in the 18th century. It was, however, argued that the memorization of medieval canonical text was not providing relevant education to Muslim society in the current competitive world and reform was called for. Thus, while the canonical text is still in use as a symbol of identity and continuity, *madrassahs* in Pakistan generally use a modified text.

Memorization of medieval canonical text was not providing relevant education to Muslim society in the current competitive world and reform was called for.

School day is over.

The curriculum includes understanding *Qur'anic* teachings, interpretation of the *Qur'an* and *Hadith*, Logic, Islamic Jurisprudence, Arabic Literature, and Arabic Grammar. Over the years, some *madrassahs* have made changes in their curricula to accommodate the teaching of secular subjects, such as Pakistan Studies, Mathematics and General Science. The extent of emphasis on these subjects varies considerably. For example, in some limited cases, *madrassah* students appear for the regular SSC examination conducted by the official Board, while in other cases, the examination for these subjects is conducted orally. The debate on reform of the *madrassah* curriculum continues to date, with one view being that *madrassahs* need to incorporate the teaching of physics, chemistry, biology, computer sciences and information technology as well. A syllabus of a *madrassah* affiliated to the Deobandi Wafaq-ul-Madaris is shown in **box 7.4**.

Two aspects of *madrassah* education are noteworthy from the perspective of the development of a mindset and worldview. One relates to teaching at elementary levels and the other at advanced levels.

- The *madrassahs* are well-organized institutions and students follow a regulated, though somewhat regimented, schedule. While there are substantial variations, a survey of over a dozen *madrassahs* enables the presentation of a generalized view of *madrassah* routine. A typical day starts with *Fajr* (dawn) prayers, followed by recitation of the Holy *Qur'an*. Regular classes commence soon after breakfast and continue until *Zohr* (afternoon) prayers and lunch. Classes may then continue or students may be allowed time for a short siesta. There is a break for play after *Asr* (late afternoon) prayers. *Magreb* (at sunset) prayers are followed by a class until *Isha* (night) prayers. Students then revise the day's learning before going to bed around 11:00 p.m. The meals are modest and the students live, study and sleep on the floor together in the same hall, packing off their bedding in a corner during the day. Discipline is strict. Deviations from rules, even by the younger students, are generally not tolerated and corporal punishment is the norm.

BOX 7.4 SYLLABUS OF WAFAQ-UL-MADARIS MADRASSAHS

1. **Ibtidaiyah (Primary)**
   - *Noorani Qa'idah* (Beginners' textbooks for Arabic language)
   - *Nazirah Qur'an Kareem* (Recitation of *Qur'an*)
   - *Tajweed and Hafiz Part 30 Amma* (Correct recitation of *Qur'an*, memorization of Part 30 of *Qur'an*)
   - Urdu Language
   - Mathematics
   - Social Sciences
   - General Science
   - Practical Crafts
   - *Islamiyat*
   - Physical Training
   - Sindhi Language
   - Government primary school curriculum

2. **Mutawassitah (Middle)**
   - *Tajweed al-Qur'an* (Correct recitation of the *Qur'an*)
   - *Hadr* (Rapid recitation of the *Qur'an*)
   - *Ilm-ul-Tajweed* (The science of *Qur'anic* phonetics)
   - Persian Language
   - Good Handwriting (Calligraphy)
   - *Aqa'id* (Beliefs)
   - *Ibadaats* (Acts of worship)
   - *Mu'amalat* (Business Practice, Transactions)
   - Morality and Character
   - Social Sciences
   - Urdu Language
   - Mathematics
   - Science
   - English

3. **Thanawiyah-e-Aammah (Secondary)**
   - *Dars Nizami*
   - *Qirr'ah* (Phonetically modulated recitation of the *Qur'an*)
   - *Tafseer-ul-Qur'an* (Exegesis)
   - *Hadith Nabawi* (Sayings of the Holy Prophet-peace be upon him)
   - *Nahw* (Syntax)
   - *Sarf* (Morphology)
   - Arabic Literature
   - *Fiqah* (Islamic Jurisprudence)
   - *Mantiq* (Logic)

4. **Thanawiyah-e-Khassah (Higher Secondary)**
   - *Tafseer ul-Qur'an* (Exegesis)
   - *Hadith Nabawi*
   - *Fiqah* (Jurisprudence)
   - *Usul-ul-Fiqah* (Principles of Jurisprudence)
   - *Nahw* (Syntax)
   - *Sarf* (Morphology)
   - *Mantiq* (Logic)
   - Arabic Literature

5. ***'Aaliyah*** **(Bachelors)**
   - *Tafseer-ul-Qur'an* (Exegesis)
   - *Hadith Nabawi*
   - Ilm-ul-Faraid (Science of Inheritance)
   - *Usul-ul-Fiqah*
   - *Ilm-ul-Balaghah* (Rhetoric)
   - Arabic Literature
   - Logic
   - Philosophy
   - Arabic Composition
   - *Ilm-ul-Jadi* (Munaziarah or Debate)
   - *Ilm-ul-Kalam* (Scholastics)
   - *Ilm-ul-Arud* (Prosody)

6. **'Aalemiyah (Masters)**
   - *Taseer-ul-Qur'an* (Exegesis)
   - *Usul-ul-Tafseer* (Principles of Exegesis)
   - *Ilm-ul-Hadith* (Knowledge of the sayings of Holy Prophet-Peace be upon him)
   - *Usul al-Hadith* (Principles of *Hadith)*
   - *Fiqah*
   - *Usul al-Fiqah*
   - *Ilm-ul-Kalam* (Scholastics)
   - *Ilm-ul-Hai'at* (Astronomy)
   - Islam
   - Modern economy and business, etc.

- Comparative religion is taught at higher levels, i.e., *Aalemiyah*, in almost all *madrassahs*. Given the sectarian divide between various doctrines, the subject has also turned into a comparative inter-doctrinal debate. There has been a history of theological debates (*munazras*) between the various sects/sub-sects. On occasions this debate has taken the form of refutation of the beliefs of other doctrines and is referred to as *radd* or refutation. Some extreme positions have been adopted, with one sect/sub-sect refuting the other as heretical. Recorded instances of *radd* are available in well-known publications, as listed in **box 7.5**.

While *radd* texts are not found as prescribed or even recommended readings in the syllabi of any of the *madrassahs*, they are available in many of their libraries and are used as reference readings in comparative religion classes. Even without formally engaging in *radd*, *madrassahs* of

Elite English-medium students strongly support a free press, democracy, equal rights for women and minorities, and peace, while madrassah students attach significantly less weight to these issues.

BOX 7.5 SELECTED *RADD* TEXTS

1. Ludhianwi, Mohammad Yusuf. 1995. Ikhtilaf-e-Ummat aur Sirat-e-Mustaqim Karachi; Maktaba Ludhianwi.
2. Nadvi, Syed Abul Hasan Ali. Muslim Mamalik Mein Islamiat our Maghribiat Ki Kash Makash Karachi: Majlis-e-Nashriat-e-Islam.
3. Nomani, Mohamad Manzur. 2002 Futuhat-e-Nomania: Manzir-e-Ahl-e-Sunnat Lahore: Anjuman-e-Irshad ul Muslameen
4. Qadri, Arshad ul. 1998. Zalzala Lahore; Shabbir Brothers
5. Qasim, Muhammad Hidayat ul. Shi 'a Multan: Taleefat-e-Ashrafiya
6. Usmani, Muhammad Rafi. 1997 Europe Ke Teen Mu 'ashi Nizam Karachi: Idara-ul-Muarif
7. Zikria, Mohammad. 1975. Fitna-e-Maudoodiat Lahore: Maktaba ul Qasim

each sect/sub-sect impart only their own strict version of Islam as the true religion and implicitly – and occasionally even explicitly – refute other doctrines. Students in advanced classes are actually prepared for 'debates on controversial issues', which introduces the element of *radd* by default.

Given that *madrassahs* follow a curriculum heavily dominated by religious subjects, topics and texts, and secular subjects play a marginal role, it is likely that students receive a narrow unipolar view of the world. Also, since the teaching methods and the academic and residential environment in *madrassahs* are rigid and regimented, it is probable that students are unable or unwilling to be amenable to conduct that does not conform to prescribed norms. Moreover, given that refutation, or *radd*, of other doctrines is imbibed by the students, they are more prone to be intolerant of pluralistic ideas and thoughts. It is, thus, likely that the *madrassahs* produce mindsets that are one-sided and exclusivist and, in many cases, insular and self-righteous. However, unlike the non-elite English medium and, particularly, Urdu-medium schools, a *madrassah* education is of a relatively high quality. *Madrassah* graduates are, thus, likely to be fully convinced of whatever positions they hold and able to defend their positions in an intellectual debate.

Will they live in a harmonious world?

The conflicting opinions produced by Pakistan's education system do not bode well for the creation of a homogeneous society or for national integration.

DIVERGING WORLDVIEWS

The worldview of students studying in different education streams varies from what may be called relatively liberal to relatively conservative. A survey of 437 students studying in the four education streams in six cities – Peshawar, Islamabad, Lahore, Bahawalpur, Sukkur and Karachi – highlights the vastly different perceptions with respect to certain key domestic and international issues. Given, however, that the survey was non-random, the results may be read as representing broad orders of magnitude.

The differences in perceptions and outlooks are disturbing. The starkest difference is between students from elite English-medium schools and *madrassahs*, which stand diametrically opposed to each other in terms of their opinions on almost every issue, except equal rights to provinces. Elite English-medium students strongly support a free press, democracy, equal rights for women and minorities, and peace, while *madrassah* students attach significantly less weight to these issues. By and large, they do not support equal rights for women and minorities, or reduction of the defence budget, and strongly support implementation of the *shariah* (Islamic law), the liberation of Kashmir, and the country's nuclear status.

The extent of the differences can be discerned from the following statistics **(see table 7.6)**. Nearly two-thirds of the elite English-medium students support a free press and democracy as opposed to just over a quarter of the *madrassah* students who hold this view. Between 75 and 87 per cent of the former and between 12 and 18 per cent of the latter support equal rights for women and minorities. About 12 per cent of the elite English-medium students and between 63 and 98 per cent of the *madrassah* students support *jehadi* groups and the implementation of the *shariah*. Over two-thirds of the former and one-third of the latter support peace with India. The percentages of support for the liberation of Kashmir stand at 60 per cent and 99 per cent, respectively. About a quarter of the

TABLE 7.6 DIVERGENT OPINIONS OF STUDENTS FROM DIFFERENT EDUCATION STREAMS

	Elite English-medium students	Non-elite English medium students	Urdu-medium students	*Madrassah* students
Support free press	65.0	50.4	47.8	26.0
Support democracy	65.9	74.8	75.8	27.5
Support equal rights to provinces	87.6	91.6	91.4	77.1
Support equal rights to women	86.6	84.9	84.8	18.3
Support equal rights to minorities	75.1	60.5	55.4	12.4
Support *jehadi* groups	12.4	24.7	33.0	62.8
Implementation of *shariah*	12.6	56.6	65.6	97.7
Peace with India	68.6	61.7	64.4	32.8
Liberate Kashmir peacefully	62.9	88.2	90.6	99.2
Liberate Kashmir by force	25.9	28.5	31.6	59.9
Support nuclear status	65.0	73.1	79.8	96.2
Reduce defence budget	69.1	62.2	57.6	45.0

Source: SPDC Survey (2002)

former and nearly 60 per cent of the latter support liberation of Kashmir by force. About two-thirds of elite English-medium students and 96 per cent of the *madrassah* students support the nuclear status. And nearly 70 per cent of the former and less than half of the latter support a reduction in the defence budget. Support for equal rights to provinces is lowest among *madrassah* students, perhaps reflecting the 'centralized state' view of the religious political parties.

The positions held by students from non-elite English-medium and Urdu-medium schools are generally identical, although the outlooks of the Urdu-medium students are relatively more conservative than the non-elite English-medium school students. On the whole, the two categories of students stand in the middle of the two extremes, with a tilt towards the views held by elite English-medium school students. One difference is with regard to support for *jehadi* groups and implementation of the *shariah*, where the views of the Urdu-medium students are significantly more conservative. While a quarter of non-elite English-medium school students support *jehadi* groups, one-third of Urdu-medium students do so; and while over half of the former support implementation of the shariah, about two-thirds of the latter are of the same opinion.

On other counts, about half the non-elite English-medium and Urdu-medium students support a free press compared to nearly two-thirds of elite English-medium students and over one-quarter of *madrassah* students. Both categories register the highest support for democracy at about 75 per cent. The percentage of non-elite English and Urdu-medium school students supporting equal rights for women and the provinces, is about the same as for elite English-medium students. Their support for equal rights to minorities is somewhat less than that expressed by elite English-medium school students, but significantly higher than that of *madrassah* students. While the non-elite English and Urdu-medium schools students are closer to the *madrassah* students on the issue of liberating Kashmir, they are closer to the elite English-medium school students with respect to doing so by force. They are also closer to elite English-medium school students on the questions of nuclear status and defence budgeting.

The conflicting opinions produced by Pakistan's education system do not bode well for the creation of a homogeneous society or for national integration. Different groups subscribe to different value systems and hold and cherish different perceptions of the kind of society they would like Pakistan to be **(see box 7.6)**. The resulting schisms have, perhaps, laid the foundation for continuing political instability and conflict, manifested by sectarian, ethnic, and other types of violence.

New nations that emerged after the era of colonialism embarked on a conscious and organized process of nation building. A uniform education system constituted the fountainhead of all such efforts. Pakistan, it appears, made no such effort. This is evident from the fact that society has been allowed to be divided into at least four very different strata and appears to exist on at least as many emotional and intellectual wavelengths.

The imperative of national integration and sociopolitical harmony demands that a uniform education system be introduced. Three fundamental decisions are in order. Society must decide: (i) whether the country should have a curriculum that is basically, but not mutually

BOX 7.6 DIVERGING VIEWS ON GOVERNANCE

The '*madrassah*' view of governance

Islam provides the basic principles for the conduct of public affairs. However, given that there is more than one sect/sub-sect in Islam, there are a number of variants with respect to details. Some of these differences are substantial even in doctrinal terms. There is, however, a dominant view in Pakistan, which is presented here.

The basic principle of the Islamic political system is that sovereignty over all of the universe and humankind belongs to *Allah* and the purpose of the Islamic state is to establish and maintain the rule of *Allah*. The position of humankind is that of *Allah's* vicegerent, or representative on earth. The principle of the sovereignty of *Allah* denies the legal and political independence of human beings, individually or collectively.

Allah's commandments are the Law. Given that *Allah* is all knowing and man's knowledge and understanding is limited, man cannot be permitted to challenge or alter the laws decreed by *Allah*. The legitimacy of any law or action is judged according to the provisions of Islam and not by popular opinion. Islam ordains a monocratic, centralized and unitary state, where the responsibility for governance is entrusted to an *Amir*, or *Khalifah*, elected by a body of pious and knowledgeable individuals, i.e., religious scholars and notables.

The basic qualifications for someone to be elected an *Amir* are that he should command the confidence of the largest number of people in respect of his moral character, knowledge of the laws and spirit of Islam, and the quality of statesmanship. In short, he should be virtuous and able. The *Amir* is not an autocrat, because he abides by the edicts of *Qur'an*, *Sunnah* and *Shariah* and does not take decisions according to his own will. He is advised to consult with the *Ahl-e-Shoora*, or members of his consultative body, so that all aspects of an issue under discussion become apparent and he can take a decision according to his best capabilities and with trust on *Allah*.

The '*secular*' view of governance

Democracy as a system of governance has its origins in the west. However, except for those holding the '*madrassah*' worldview, it is not considered a western artifact. This is evident from the fact that while 66 per cent of elite English-medium students support democracy, 75 per cent of Urdu-medium students do so. There are several variants of democracies in the world. There is, however, a standard – if somewhat idealized – pattern, which is presented here.

The 'secular' view in Pakistan holds that sovereignty is to be exercised through their elected representatives in Parliament. Parliament is the supreme body, where questions of law and policy are decided according to the values, opinions and interests of the people. Governance is considered to be a matter of collective management of public affairs, where decisions are taken democratically by majority vote.

The legitimacy of any law or action is judged according to the Basic Law, or Constitution, and/or popular will. Public participation is an important component of democracy, where the people have a right to participate and have a decisive say in the affairs of government and civil society. Public participation includes standing for elections, voting in elections, holding and attending public meetings, joining civil and/or political organizations, petitioning and protesting. Decisions by the government can be challenged and even overturned. Pluralism of ideas and opinions and positions and platforms on different social and political issues are a hallmark of democratic systems.

There is more than one foci of power. The executive branch of government is bound – in varying degrees in different countries – by the decisions of the legislative branch. In federal countries, there is a delineation of authority between the various tiers of government. The electorate, comprising almost the entire adult population, elects governments and legislative bodies at various levels, mostly through a system of universal adult franchise.

exclusively, secular or religious; (ii) whether the basic medium of instruction is to be English or Urdu; and (iii) whether the class-based segregation that now exists, with one set of schools catering to students from upper-income groups and another catering to lower-income groups, should give way to a more egalitarian regime.

APPENDICES

A.1

CHRONOLOGY OF KEY EVENTS IN THE SOCIAL SECTORS: 2002-03*

EDUCATION

January 6, 2002	The Sindh Private Education Institutions (Regulation and Control) Ordinance 2001 is promulgated **(see box A1.1)**.
March 6, 2002	The President promulgates an ordinance making primary education compulsory in the Islamabad Capital Territory (ICT).
June 20, 2002	The promulgation of the *Madrassah* Registration Ordinance 2002 regulates schools by bringing them under the normal education system of the country.
September 25, 2002	The Asian Development Bank (ADB) approves a $75 million loan to improve public elementary education in Sindh.
December 3, 2002	USAID grants a four-year $60 million award to the Research Triangle Institute for the implementation of its Education Sector Reform Assistance (ESRA) Project for Pakistan.
January 05, 2003	The Punjab Cabinet resolves to provide free education up to secondary school level in all provincial and district government schools from the next academic session.
January 14, 2003	The Sindh Education Department reports that Sindh has 38,885 primary schools in the public sector, of which 13,537 schools are without electricity, 5,901 are without water, 12,791 are without toilets, and 1,131 schools have no boundary walls.
January 22, 2003	The NWFP Cabinet makes education up to matriculation free of cost in government institutions.
February 06, 2003	Chitral district reports a 98 per cent literacy rate, the highest in the NWFP, in the 6-10 age group. According to a report prepared by the provincial education department, it also has the second lowest dropout rate in the province.
February 26, 2003	The Sindh Government reports an increase of about 0.1 million in primary class enrolments in the towns/*talukas* selected for implementation of the compulsory primary education ordinance during the last eight months.
February 28, 2003	Balochistan Assembly adopts a resolution to provide free education up to matriculation in the province.
March 05,2003	According to the Sindh Education Management Information System (SEMIS) school census report 2001-02, only about 20 per cent of the total population in the 4-9 year age group is enrolled in government run primary schools.
April 05, 2003	The number of illiterate people in Pakistan has increased from 10 million in 1951 to 50 million at present as revealed at a meeting of the International Partners Forum for Education For All in Dakar.

*** Sources:** Government, NGO and media reports.
Note: Events in 2003 include reports upto and inclusive of June.

BOX **A1.1**

The Sindh Private Educational Institutions (Regulation and Control) Ordinance 2001

The Sindh Private Educational Institutions (Regulation & Control) Ordinance 2001 was promulgated to provide for the regulation and control of privately managed educational institutions in the province. These institutions include universities, colleges, schools, technical institutions, professional, vocational and commercial institutions imparting any type of education by any system of education or medium of instruction. Among the regulations are the following:

- No institution in the private sector shall be established or continued except in accordance with this ordinance.
- Any person intending to establish or continue any existing institution shall make an application to the registering authority in the prescribed form by such documents and fee as may be prescribed. The registering authority means, that in the case of schools, the director of school education of the region, or in the case of technical education or vocational education, the director of technical education, or in any other case, any person or authority appointed by the government.
- Any existing institution may continue to function for a period not exceeding 90 days from the commencement of this ordinance and where an application is made under sub-section (1), until the application is rejected, or if any appeal is preferred under section 9, until the decision of the appeal.
- No donation, from a student, voluntary or otherwise, for development projects of an institution shall be permissible.
- The registering authority shall not interfere with the fee structure of an institution but fees shall not be increased during the course of an academic year while the facilities allowed to a student at the time of admission shall not be subsequently withdrawn or reduced.
- On the cancellation or suspension of the certificate of registration, the registering authority may, without prejudice to any action that may be taken under the Sindh Private Schools (Management and Control) Act 1974, make such orders and take such action with respect to the completion of the current education terms as may be considered necessary.
- This ordinance also repeals the Unrecognised Educational Institutions Ordinance 1962, and amends Sindh Board of Technical Education Ordinance 1970, and states that in section 12 in sub-section (2) in clause (1) the words "and also to regulate the development of technical, industrial and commercial education below degree level by compulsory registration thereof" shall be omitted.

April 09, 2003	Pakistan is identified as one of the 28 countries unlikely to achieve the six goals adopted by Education For All (EFA) by 2015.
June 11, 2003	The Pakistan Education and School Atlas shows male literacy at 60 per cent and female literacy at 36 per cent.

HEALTH

January 02, 2002	UNICEF reports that 10 to 20 per cent of children in the country under five years of age are suffering from Vitamin A Deficiency (VAD).
January 20, 2002	Pakistan is identified as the 7th most populous country in the world **(see box A1.2)**.
June 14, 2002	The Economic Survey 2001-02 estimates the ratio of health care professionals to population to be 1,516 people per doctor, 31,579 per dentist and 3,639 per nurse.
November 14, 2002	The World Health Organization (WHO) estimates Pakistan to rank 4th in countries having an alarming number of diabetic patients.
December 1, 2002	The Sindh AIDS Control Programme discloses that although there are only 2,000 reported cases of AIDS in Pakistan, including 600 in Sindh, it is widely believed that the actual number is in the region of 70,000.
January 03, 2003	Pakistan is on the verge of banishing polio from the country; in 2002, 76 cases were reported compared to 180 in 2001.
January 05, 2003	WHO reports that the Directly Observed Short Course (DOTS) coverage for tuberculosis has risen from 8 per cent in 2000 to nearly 70 per cent and universal coverage is expected during the year 2003.

BOX **A1.2**

State of The World's Newborn - Pakistan

The report, "State of the World's Newborn - Pakistan", was conducted by Save the Children in 2002. Out of over 53 million babies in the country, nearly 270,000 die before they are one month old, roughly ten times higher than that in the developed countries. The report says that nearly 60 per cent of these deaths occur during the first few days after birth and a vast majority of them are preventable through available and cost effective means. The risk factors contributing to the high neonatal mortality in the country are the high percentage of home deliveries unattended by skilled care; the birth interval being less than 24 months; the number of pregnancies being greater than 6 per women, and maternal or paternal illiteracy.

Though Pakistan is the seventh most populous country in the world, it has the second highest number of newborn deaths and the fourth highest rate of neonatal mortality. The report says that emerging evidence of the relationship of low birth weight with long-term chronic diseases in adult life such as diabetes, hypertension and coronary artery disease, makes it one of the most important and potentially preventable public health conditions. Other infections such as diarrhoea, acute respiratory infections, sepsis and meningitis still represent potentially lethal problems for neonates.

Save the Children (USA) is currently partnering with the Ministry of Health, UNICEF, WHO, and Japan International Cooperation Agency (JICA) to immunize 5 million women in nearly 57 districts of the country against tetanus – a disease that claims the lives of more than 20,000 newborns annually.

February 05, 2003	Save the Children and the Sindh Women Health Project stated that of the 32 million local women that fall in the 15-49 reproductive age group, 30 die every minute due to childbirth complications.
February 12, 2003	The United Nations Integrated Regional Information Network reports that about 40 per cent of the annual 1.5 million blood transfusions in Pakistan are not screened for HIV.
March 22, 2003	Among the 22 high burden tuberculosis-affected countries in the world, Pakistan ranks 8th.
March 24, 2003	The United Nations Development Programme (UNDP) finds that on average 65 per cent of the extremely poor are ill, suffering from an illness on average every 95 days.
March 29, 2003	About 30 per cent of all mortality recorded by hospitals is attributed to infectious diseases.
April 06, 2003	WHO reveals that 177 people in every 100,000 die in Pakistan from TB every year. Of these patients, 52 per cent are females and 48 percent males.
May 07, 2003	Rs. 26.3 billion is earmarked for various health preventive programmes in the next five to nine years, in response to the fact that the public health sector in Pakistan caters only to 20 per cent of the total 145 million population.
May 10, 2003	More than 1.5 million people suffer from epilepsy in the country with only 30 per cent of such people knowing of their ailment.

WOMEN & CHILDREN

February 8, 2002	ADB allocates $150,000 to help the government implement the National Policy and Plan of Action to Eliminate Child Labour.
August 22, 2002	40 per cent of children under five are malnourished and 25 per cent of babies are born under weight according to standards established by WHO for developing countries.
December 5, 2002	20 per cent of women in Pakistan die during childbirth **(see box A1.3)**.

January 02, 2003	An alarming 30 per cent increase is recorded in the runaway cases, pertaining to children fleeing homes, in 2002 as compared to the previous year according to the Edhi Foundation.
January 03, 2003	Madadgar police research reveals that as many as 1,615 cases of physical and sexual abuse were reported against children in 2002.
February 20, 2003	Around 17 per cent of all tuberculosis cases confirmed in Pakistan were found to be in children less than five years of age.
March 30, 2003	Malaria kills one child every 40 seconds in NWFP.
April 11, 2003	About 42 per cent children in the country are either underweight or anaemic due to poor diet and lack of awareness among parents of the nutritional needs of their children in the early stages of life.
April 29, 2003	Childhood blindness is the second largest cause of blindness in the world: over 80,000 blind children out of around 1.5 million worldwide live in Pakistan.
May 08, 2003	It is reported that about 11,000 offenders, including 2000 juvenile offenders, are spending their lives behind bars in the various prisons of the NWFP.
May 21, 2003	About 45 per cent of Pakistani women develop anaemia during pregnancy.
May 22, 2003	The number of children engaged in various forms of labour reaches 3.5 million in the country.
May 24, 2003	The Pakistan Medical Association affirms that 30,000 pregnant women die in the country every year due to lack of medical facilities.
May 30, 2003	As many as 77 per cent of working women are employed in the informal employment sector of Pakistan and receive meagre salaries.
June 16, 2003	The Ministry of Labour, Manpower and Overseas Pakistanis decides to give about Rs. 80 million as scholarships to 5,000 children of workers all across the country.
June 22, 2003	Every day 600 children die of diarrhoea in Pakistan, and over 2 million fall victim to acute respiratory tract infections when simple hand washing with soap could prevent them from contracting such infectious diseases.
June 29, 2003	A survey by UNICEF and ILO certifies that the student dropout ratio in

BOX **A1.3**

State of The World Population Report 2002

At least 200 out of every 1,000 women die during the delivery process in Pakistan where the infant mortality rate per 1,000 lives is still 87, says the State of the World Population Report 2002. The report, which focuses on People, Poverty and Possibilities said 50 out of every 1,000 women between 15 and 19 years become pregnant. It is noted that the HIV prevalence between the ages of 15 and 24 in Pakistan is 0.06 among males and 0.05 among females.

The life expectancy among males is 61.2 and 60.9 among females, while the percentage of illiteracy among males is 41 per cent and 70 per cent in females. The total population of the country has been reported at 148.7 million while the average population growth rate from 2000 to 2005 has been estimated at 2.5 per cent. The gross national income (GNI) per capita Purchasing Power Parity (PPP) for 2000 was $1,860. In India it is $2340 and in Bangladesh $1590. The report says donors should encourage partnerships among governments and NGOs with particular attention to incorporating the views of the poor in the design, implementation and monitoring of programmes. The provision of reproductive health, pre- and post-natal care, safe delivery, family planning and prevention of sexually transmitted infections (STIs) and HIV/AIDS is most effective as part of an integrated package.

The report states that poverty is the main threat to the well being of elderly people. Many of the 400 million people over 65 years of age in developing countries live below the poverty line. To meet the millennium development goal of halving extreme poverty by 2015, poverty reduction strategies must focus on the poorest and most vulnerable older persons, especially women, and on breaking the poverty cycle that runs from one generation to the next.

June 29, 2003	A survey by UNICEF and ILO certifies that the student dropout ratio in Sialkot district's primary schools has been reduced to 0.7 per cent from 45 per cent.

POVERTY

March 30, 2002	Over 600,000 people are benefiting from *Zakat* funds in Punjab.
May 23, 2002	The EU is contributing $50 million to underpin Pakistan's Poverty Reduction Strategy, and in particular, to support its efforts to upgrade Pakistan's financial services sector.
May 31, 2002	The Islamic Development Bank (IDB) announces it will provide $250 million assistance to Pakistan in the next three years for various social projects, particularly education, health and poverty alleviation.
June 25, 2002	The World Food Programme allocates $26 million under the Poverty Reduction Strategy Programme in Pakistan to initiate health and community development projects for girls in rural areas in the next two years.
July 5, 2002	The International Monetary Fund approves $114 million tranche (bonds) for Pakistan under its Poverty Reduction Growth Facility (PRGF).
July 29, 2002	Pakistan is ranked 138th out of the 173 countries assessed for its annual Human Development Index **(see box A1.4)**.
August 13, 2002	About 47 million people are living below the poverty line in Pakistan, with more than 12 million were added to the ranks of the poor between 1993 and 1999, says an Asian Development Bank report.
September 14, 2002	The average annual income of a labourer in the agriculture sector in Punjab is about Rs. 15,000, roughly half of the national per capita income.
September 17, 2002	The government and the Asian Development Bank sign a $204 billion agreement to reduce the incidence of poverty to less than 15 per cent by 2011.
November 29, 2002	*Zakat* cheques worth Rs.16.5 million are distributed among 662 people in Sindh. This year, Rs. 860 million has been allocated as the *Guzara* allowance, out of which Rs. 430 million has been distributed.
January 07, 2003	The government decides to offer an additional 1.5 per cent profit rate to pensioners on all the National Saving Schemes (NSS).
January 09, 2003	The government reports a record Rs. 161 billion was spent during the current financial year for development of the social sector.
February 05, 2003	The Pakistan Poverty Alleviation Fund (PPAF) disburses over Rs. 2.5 billion in more than 75 districts of the country through 35 partner organizations. The fund has undertaken 3,000 projects since April 2000.
April 16, 2003	At least one-third of Pakistan's population is under the poverty line owing to the macroeconomic policies regarding withdrawal of subsidies on food, education and health, as reported by the International Labour Organization.
April 18, 2003	35 people, eight of them women, commit suicide during the first quarter of the year, resulting in one reported case every third day.

BOX A1.4

Deepening Democracy in A Fragmented World

The UNDP Human Development Report 2002, entitled *Deepening Democracy in a Fragmented World*, found that 56.8 per cent of Pakistanis over 15 years of age are illiterate, that 84.6 per cent of the population earned less than $2 a day, and that the infant mortality rate is 85 per 1000 live births. However, between 1990 and 1999 Pakistan climbed three places in the ranking. According to the UNDP index, during this period Pakistan had made headway in tackling under nourishment, but is far behind in reducing infant mortality rates. Pakistan is ranked in the bottom 36 countries grouped under 'low human development', along with Nepal, ranked 142 and Bangladesh, ranked 145. The majority of countries in the lowest group are African states.

The report found new democratic hopes, unmet by elected governments, lead to public disgust for the system and regression to military rule. The example of Pakistan is often cited, where corrupt and inefficient elected governments in the 1990s were exposed and hammered by a free press.

While 140 of the world's nearly 200 countries hold multi party elections, only 82 are fully democratic, with institutions such as a free press and independent judiciary. The report calls for a new wave of democracy building to give ordinary people a greater say in both national and global policy making.

June 13, 2003	The rate of unemployment in the country has increased from 5.89 per cent in 1998 to 7.82 per cent in 2003 as per a labour force survey of the Federal Bureau of Statistics.

ENVIRONMENT

May 10, 2002	The UNDP announces it will provide $40 million for environment projects.
November 24, 2002	A World Bank study estimates the environmental cost to six sectors of Pakistan's economy at $1.8 billion, and the cost of urban air pollution at $369 million per year.

POPULATION

June 14, 2002	The Economic Survey 2001-02 shows that Islamabad has registered the highest population density increase in the country in recent years, estimated at 1026 persons per square kilometre.
November 29, 2002	One-third of the country's population lives in urban areas as indicated in the Pakistan Human Condition Report. **(see box A1.5)**.
February 05, 2003	The United Nations Fund For Population Activities (UNFPA) acknowledges that the population of the country reached 144.5 million in December 2002, with a growth rate of 2.1 per cent.
February 23, 2003	UNFPA, under its seventh country programme (2004-08), will provide $30 million ($6 million per year) to the government of Pakistan.

WATER

January 01, 2003	A report on the Status of Safe Drinking Water Availability in Sindh reveals that 25 to 80 per cent of the water supplied to the major cities of the Province is not considered safe for drinking
January 02, 2003	About 10 to 12 million gallons of water is wasted in the capital every day, which is the highest among Pakistani cities, says the State of Consumer Rights Report 2001 launched by the Consumer Rights Commission of Pakistan (CRCP) in collaboration with Action Aid Pakistan.

April 22, 2003	The provincial government provides Rs. 5 billion for the revamping and remodelling of the irrigation system in Sindh.
May 05, 2003	The World Bank approves an interest free loan of $78 million under the On-Farm Water Management Project to improve the irrigation system in Sindh.

MISCELLANEOUS

January 13, 2002	Built for 17,413 inmates, Punjab jails are over-crowded with 46,993 prisoners, almost three times more than the capacity of these buildings.
January 14, 2002	Rs. 1800 million is released for the schemes in the second phase of the Khushhal Pakistan Programme (KPP).
August 29, 2002	The Prevention and Control of Human Trafficking Ordinance 2002 is approved.
September 6, 2002	A study by SPDC reveals that about 53 per cent of registered organizations in the non-profit sector are inactive, closed or untraceable. **(see box A1.6)**
October 2, 2002	All 380 approved schemes of the Khushhal Pakistan Programme, Phase I, are completed in 1999-2000, with a total of 15,723 persons employed through these schemes.
Janauary 14, 2003	There are approximately 18 million illegally held weapons in Pakistan compared to some 2 million weapons in the hands of legally licensed owners as quoted in the Small Arms Survey, 2002.
March 19, 2003	The human rights situation in the country remains dismal in the year 2002 **(see box A1.7)**.

BOX **A1.5**

Pakistan Human Condition Report Report 2002

One-third of the country's population now lives in urban areas, mainly due to the increasing pressure on agricultural land, which created unemployment in the rural areas and a consequent migration to urban areas. The Pakistan Human Condition Report 2002 was prepared by the Centre for Research on Poverty Reduction and Income Distribution, under the auspices of the planning division. This transformation is evident from the dramatic change in urban population from 6 million in 1951 to 10 million in 1961, 17 million in 1972, 24 million in 1981 and 43 million in 1998. In other words, the 1951 reported population of 6 million increased almost seven times by 1998.

Another important point to note is that the higher urban growth rate did not decrease the population of the rural areas, which also kept increasing from 28 million in 1951 to 88 million in 1998. This meant that the urban population had increased by 605 per cent, while the rural population grew by 217 per cent in the last five decades.

The report, which agrees with the World Bank and the Asian Development Bank that poverty increased during the 1990s, calls on the government to increase the minimum wage rate from Rs. 2,500 to Rs. 3,150 per month. It further advocates that the legal applicability of the minimum wage should be extended to cover the non-formal sector, which provides 64 per cent of total employment in Pakistan. It further states that since the take home pay of lower level (grade 1) government servants is below the household poverty line, consideration should be given to formally linking it to the evolving household poverty line after adjusting for the average number of earners per household in the Rs. 2,501 - Rs. 4,000 income group, in conjunction with the on-going right sizing of the public sector.

The Report focuses on the issues of the measurement of deprivations faced by the poor in physical and economic access to food, education, health, safe environment, safe drinking water and sanitation along, with gender inequality. The report suggests that the official 'poverty line' be replaced by 'poverty bands' so as to articulate specific policies that address the needs of the vulnerable poor, the transient and the absolute poor.

On the policy front, the report highlights three critical priorities that the reform programme should incorporate: the creation of a social safety net, human development and well-coordinated rural strategy along with good governance. It points out that the head count ratio indicates that in 1998-1999, 30.6 per cent of Pakistan's population was experiencing absolute poverty on a daily basis. To counter poverty, the key lesson is that Pakistan needs to further develop its institutional capacity for measuring and monitoring the impact of its policies and actions on the specified output and outcome indicators.

BOX **A1.6**

The Non-profit Sector in Pakistan

Fifty-three percent of non-profit organizations are inactive, closed or untraceable, revealed a 2002 study titled *Dimensions of the Non-profit Sector in Pakistan* conducted by the Social Policy and Development Centre (SPDC). The study was the first of a series of working papers being produced by SPDC as part of an international research initiative – the Johns Hopkins Comparative Non-profit Sector Project – spearheaded by the Centre for Civil Society Studies, Johns Hopkins University, USA. The study, which encompassed more than 2,000 non-profit organizations, was aimed at evaluating the size, structure and scope of this sector. The study also determined the relationship that the non-profit sector had with the international community, local community and businesses.

The study defined as non-profit organisations (NPOs) only those organisations that had an institutional presence and structure: "They are institutionally separate from the state. They do not return profits to (their) members, managers and directors. They are in control of their affairs. They attract some level of voluntary contribution." Twelve districts were selected for the primary survey: Faisalabad, Rawalpindi, Multan, Sargodha, Sialkot, Gujranwala, Lahore, Karachi, Hyderabad, Sukkur, Peshawar and Quetta, covering about 43 million people.

Though various ordinances registered non-profit organizations in the past, three acts effectively cover approximately 80 to 90 per cent of the registered domains. These acts are the Voluntary Social Welfare Agencies Ordinance 1961, the Societies Registration Act 1860 and the Companies Ordinance (Section 42) 1984.

The most important pattern of non-profit activity was shown to be the dominance of education. This sector retains 71 per cent of the total estimated non-profit employment. Organizations that provide primary education alone have a share of 25 per cent of the total employment in the non-profit sector. The share of organizations providing religious education is about 17 per cent, while the organizations providing secondary and higher education employ nearly 28 per cent of the total labour force employed by the non-profit sector. The second largest sector in terms of paid employment was health, which provided about 11 per cent of non-profit sector employment. The domination of education and health activities is evident from the data. Most of their revenues come from fees and user charges. The fee component alone has a share of 34 per cent in the total non-profit sector cash revenue.

April 07, 2003	According to the NGO Resource Centre, more than 45,000 social development organizations (SDOs), with the help of their more than 475,000 employees and volunteers, are carrying out development projects involving nearly Rs.16.5 billion in the country annually.
June 16, 2003	The government earmarks Rs. 483 million under the Public Sector Development Programme (PSDP) for police reforms for the fiscal year 2003-2004.
June 20, 2003	The government decides to increase the pensions of disabled industrial workers by 53 per cent, which will cost an additional expenditure of Rs. 5.45 million to the national exchequer.

BOX **A1.7**

The State of Human Rights in 2002

The Human Rights Commission of Pakistan (HRCP), in its annual report on the State of Human Rights in 2002, stated that legislative and executive measures were being taken which curtailed citizens' rights, such as amendments in the Anti Terrorism Act (ATA).

The report said that people's disenchantment with the judiciary was also contributing to the law and order situation in the country, and that people were going back to primitive methods for settling their disputes. The past year was difficult for women and children, as a number of women became victims of *jirga* decisions, acid burning, kidnapping and honour killings. The intensity of crime against women has increased, with a gang rape having been carried out on the orders of a tribal *jirga*. A woman was also sentenced to death by stoning for the first time in at least 15 years.

In terms of law and order, the HRCP report said there were nine major incidents of terrorism, all directed at Western missions, or foreign or Christian places of worship or work. It said that extra-judicial killings increased as compared to the previous year. At least 236 people were killed in such encounters. More than 50 fell victim to target killing.

Regarding jail conditions, the report said that over 90,000 people remained behind bars at badly overcrowded jails. Hundreds accused of involvement in militant activities were jailed, in almost all cases illegally. An amendment in the Anti-Terrorism Act permitted suspected militants to be held for up to a year without charge.

It said that the Christians in the country faced increased militant violence during a year in which at least 38 died in terrorist attacks. Ahmedis continued to face severe discrimination and remained placed on a separate voting list. It said that blasphemy laws continued to be used to settle petty disputes, with clerics in several cases inciting mobs against those whom they accused of blasphemy.

The report also said restrictions remained imposed on freedom of movement, which was used as a means of preventing political gatherings. Movement of clerics was in many cases restricted as a means of preventing sectarian violence. It reported that journalists across the country complained of increased harassment and intimidation, often by personnel of intelligence agencies, and at least four new laws were enacted to restrict press freedoms and prevent access to information.

A.2

SELECTED BOOK REVIEWS

Continuity and Change: Socio-Political and Institutional Dynamics in Pakistan,
Zaidi S. Akbar (ed), City Press: Karachi 2003.

Continuity and Change consists of essays by Pakistani authors that have been published in a special edition of the *Economic and Political Weekly*. The essays vary from purely political perspectives on the country to issues as diverse as structural adjustment, urbanization and the state's history curriculum. While the essays are notable for having been penned by well-known social scientists, their depth of analysis varies considerably. For instance, Hamza Alavi's excellently researched and well presented article on the ideological and social underpinnings of the Pakistan Movement, is in stark contrast to Ayesha Jalal's whimsical "A Letter to India, in Manto's Spirit", which is heavy on satire and short on substance. Overall, there is often a tenuous connection between these essays, though the editor S. Akbar Zaidi states that they all illustrate the "overbearing, omnipresent, role of Pakistan's military" in the changing fortunes of the country.

The real value of this book lies in its ability to present the views of eminent social scientists on subjects of their choice. For instance, one essay delves purely into the problematic issue of the representation of pre-Partition history in the national curriculum, given that the custodians of the 'Pakistan Ideology' have manipulated the official interpretation of this period to suit their interests. Other essays highlight reasons for the failure of democracy, stressing the powerful influence of the Pakistan Army, as well as the civil-military regime's need to perpetuate a federal system by repressing regional language and political movements.

Of particular interest to those in the development field will be Shahrukh Rafi Khan's study of structural adjustment programmes as well as an essay by Siddiqa Agha on the political economy of defence. Khan's essay describes the genesis as well as a description of the latest Poverty Reduction And Growth Facility programme undertaken by the Pakistani government. He critiques various liberalization measures imposed by International Financial Institutions (IFIs) as further contributing to the country's economic downturn. In his opinion, the government's real focus should be on land reform, strengthening the revenue collection system and eliminating vested interests from the system in order to allow competition to flourish. Ayesha Siddiqa Agha's piece on the "Political Economy of Defence" links the involvement of the Pakistani military in power politics with its ability to apportion a large chunk of the state financial pie for itself. In her view, resources are diverted from development into military expenditure, which allows the army to indulge in not only pure defence expenditure, but also to intervene in construction, transportation and other sectors of the economy. She also disagrees with the present regime's claims that it was forced to seize power to protect the economic development of the country. She cites figures to show that prior to 9/11 the economy had already deteriorated under the military leadership.

An eclectic collection of essays, *Continuity and Change* will broaden the reader's understanding of a range of selected issues related to the politics and economics of the country.

Shelter for the Shelterless: The Story of Khuda Ki Basti,
Ismail, Aquila (ed), City Press: Karachi 2002.

Khuda Ki Basti is a successful public housing scheme, established in 1986 at a distance of two hours from Hyderabad City, which aims at providing homes to urban low-income groups. Much of the scheme's success is attributed to the flexible approach followed by the Hyderabad Development Authority, which recognized that

subsidized public housing schemes have been hijacked by speculators in the past, and thus found innovative ways to cater to the needs of low-income groups.

The book focuses on two aspects of *Khuda Ki Basti* or 'God's settlement'. First, it provides a descriptive account of the methodology and implementation of the scheme. Second, it evaluates the scheme and contrasts it with other low income housing schemes in the country. Material for the book has largely been culled from documents and assessments by 'experts and development consultants', including the man responsible for initiating the scheme, Tasneem A. Siddiqui.

Three key measures ensured that the scheme was 'poor friendly'. Ease of access was ensured by providing virtually unserviced land and by eliminating house construction standards for the allottees. Permanent occupancy of the plot was made a necessary condition and full ownership documents were only granted when the allottees had built a house. Another innovative feature was that services were to be provided on an incremental basis, as and when the beneficiaries were able to pay for them. This last measure was intended to circumvent problems of cost recovery.

How successful has the scheme been in targeting lower income groups? It emerged from the evaluation that about 54 per cent of the respondents surveyed earned less than Rs.1500 a month, 32 per cent between Rs. l500 and Rs. 3000, and 14 per cent above Rs. 3000. The author points out that while World Bank reports claim that their sites-and-services projects have reached down to beneficiaries in the 17th percentile of income distribution, *Khuda ki Basti* has been able to reach out to people who are in the 10th percentile, which is no mean feat. However, replication of the scheme in other parts of Pakistan would be a much harder task for two main reasons. First, it was felt that the official who initiated this scheme and his team were imbued with 'missionary zeal' which was lacking in other government officials. The pioneering nature of their work was the result of being able to understand "the issues [involved in providing shelter for low-income groups], their causes and their possible solutions". Second, it was felt that land could only be provided at a low price if state land or wasteland was available, which would make this type of the scheme unfeasible for certain parts of the country.

Despite the reservations of some experts about the replicability of the scheme, the author points to one successful replication in Karachi and feels that the concept of incremental development is gaining recognition in government circles. The book provides an accessible account of the rationale underlying the scheme as well as the practical challenges faced by planners in implementing an unusual and ultimately successful urban low-income housing scheme.

Social Impacts and the Constraints of Micro credit in the Alleviation of Poverty: A Qualitative Study of the Micro credit Program Orangi Pilot Project-Orangi Charitable Trust, Karachi,
Rehman, Naheed, and Ismail, Aquila (eds). OPP/OCT: Karachi 2003.

Rehman and Ismail's study of the Micro credit programme for both the Orangi Pilot Project and the Orangi Charitable Trust (OPP-OCT) attempts to place the scheme in the context of both its social impacts and social constraints. Although the sample size is rather small – 44 clients were interviewed between 1999 and 2000 – this does not detract from the fact that qualitative assessments are invaluable in providing necessary insights for practitioners and policymakers engaged in the field of poverty alleviation and micro credit.

OPP-OCT's Micro credit Programme is not modelled on its famous counterpart, the Grameen Bank, as it does not lend to the 'poorest of the poor'. Instead the Programmme seeks to reach out to the entrepreneurially minded 'working poor', in other words, families with ongoing business ventures who are in need of working capital, or families who possess skills but lack seed money to start a venture. As the director of OPP-OCT states, "Credit is not a welfare activity, but rather a market based activity and we need to make clients competent and self-reliant." The programme does envisage spill over benefits to poor labour in terms of

increased employment, due to the productivity enhancing nature of the loans on business activity.

The major social impacts of the micro credit programme were clear cut and positive despite the fact that OPP-OCT had no built in social or cultural agenda of change in its mandate or a social package to complement the provision of loans. Borrowers had undertaken loans in times of financial hardship. As a consequence, one of the major impacts of using the loans was the improved nutrition and better emotional and mental health of the borrowers. Another benefit was that the expansion of the business due to further loans widened the net of beneficiaries as more labour was employed. By setting up their own businesses, borrowers won for themselves a measure of dignity that had eluded them when they worked as employees in other people's businesses.

Even more striking was Rehman and Ismail's identification of the 'social constraints' under which the Programme operated. Political instability, ranging from ethnic violence in the Orangi area to general countrywide instability, negatively impacted on the borrowers' business ventures and their ability to pay back loans. Poor employment prospects meant that children were withdrawn from school to help at home, thus casting in doubt the link between micro credit and enhanced schooling. Equally alarming has been the rise of rapid inflation: while the maximum loan amount has remained frozen throughout the period surveyed, the costs of raw materials and household items has increased, leading to a decrease in repayment rates. Illness or death in the family was a source of great concern to borrowers as it lowered their income and consequently their ability to pay back loans, given that 'every rupee counts' and any pause in the work cycle can have a devastating impact on their finances. The spectre of dowry also haunts these lower income families: it was estimated that Rs.100,000 was needed for an average dowry, without which daughters would be unable to attract suitors. Sadly there was a clear trade off between educational spending on girls and their dowries. This study underlines the fact that poverty alleviation schemes need to be seen in the context of the economic and social constraints that limit the ability of households to run the businesses successfully and use their credit enhanced savings for the direct amelioration of various forms of deprivation.

The Unplanned Revolution: Observations on the Process of Socioeconomic Change in Pakistan,
Hasan, Arif, City Press: Karachi 2002.

The change in Pakistan since 1947 in terms of demographic composition, economy and social structure has been profound in nature and yet this 'revolutionary' change remains unacknowledged by the state. This has resulted in the creation of a disturbing dichotomy in the development process of the country, which is manifested in the presence of a dual governance structure, amongst other things. This is the central premise of Arif Hasan's book. To illustrate his theory, Hasan uses his experience of fieldwork to demonstrate the nature of change in rural and urban areas and points out that the state has failed to incorporate the new sociopolitical ground realities into its policymaking.

Hasan chronicles the socioeconomic conditions prevailing in selected towns and districts of the country. His intention is to illustrate the changing patterns in these communities, drawing attention to the replacement of the subsistence economy with modern modes of production. Since the state is unwilling or unable to help, small farmers, fishermen and the employees/self employed of the informal sector, are forced to depend on middlemen/private entrepreneurs for credit, hire of machinery, transportation and even the provision of services traditionally the prerogative of the government. This results in the exploitation of these classes, which have little choice but to acquiesce to this informal arrangement, as their very survival depends on it.

Hasan is of the view that it is imperative for the state to reflect this new scenario in its political and planning process, thereby meeting the aspirations of the low/middle income urban and rural classes and countering the influence of the middlemen. While he does not propose a

blueprint for these changes, he does indicate the broad parameters required for change. Political accommodation of these classes can be achieved through genuine devolution (as opposed to the 2001 plan, which still gives the provincial assemblies certain powers of veto over the lower tiers).

Hasan also focuses on migration as one of the major causes of the changes in Pakistani society. He believes that Partition created an aggressive upwardly mobile migrant culture, which led to the 'opportunistic political and social culture' prevailing in Pakistan today, as migrants had no roots and little respect for traditional values. In Punjab this new migrant culture had already been introduced through the creation of canal colonies between 1870 and 1920.

Hasan's observations on life, livelihoods and local economies, from Tharparkar to the Northern Areas, adds a personal perspective to the literature on development. However, his book suffers from the rather random nature of the communities chosen – as well as the fact that many of the communities were visited only once. The only major Pakistani city examined by the author is Karachi, which cannot claim to be representative of other major cities. As well, Hasan's analysis of the causes of the 'unplanned revolution' is at times simplistic and contentious and is not substantiated by enough research.

Green Pioneers: Stories from the Grassroots,
City Press for UNDP: Karachi 2002.

Green Pioneers tells the story of twenty individuals and organizations that are making a difference to Pakistan's rapidly eroding natural resource base. Their interventions include saving endangered species, protecting agricultural land from overuse, saving the country's cultural heritage, and educating children about the environment. In this sense, *Green Pioneers* covers an array of path breaking solutions to protect the environment, often against great odds. What these individuals and organizations all share in common are funds received from the UNDP's Global Environmental Facility Small Grants Programme.

It is heartening to hear of efforts such as those undertaken to protect the Himalayan Brown Bears, a little known species that would never even have been heard of, had it not been for two enterprising environmentalists. Their love of trekking in the Deosai Plains led them to the discovery that the bears were in danger of extinction due to hunting and they lobbied to have the Deosai Plains declared a national park. Their second step was to have an NGO appointed as an honorary warden of the park thus enabling formal conservation efforts and the setting up of protected areas for the bears. However, they also had to contend with the wrath of the local hunting 'mafia' who tried to turn the villagers against them. The success of their efforts will ultimately rest on increased involvement of the Wildlife Department and the goodwill of the villagers. Nonetheless, without the dedication and sheer perseverance of these two individuals, the world would never have been alerted to the endangered status of the bears.

The stories in this book frequently illustrate how crucial poverty alleviation or social programs are for environmental efforts to succeed at the grassroots. The efforts of SUNGI (an NGO based in Hazara) to protect the regions' diminished timber resources were combined with income generating activities for poor people. Similarly, Zafar Iqbal Lund's Sufi-based advocacy of organic farming incorporates the practical dimension of setting up a savings bank for small farmers so they can obtain insecticides directly from manufacturers instead of being exploited by middlemen.

While the interventions documented in this book encompassed many different areas of natural resource protection, they also highlight how the success of these initiatives depended so heavily on the unrelenting dedication of the pioneers themselves. Through their hard work and persistence, they attracted national and international attention to their causes, and consequently, funds and assistance. While their single minded devotion to their respective projects is commendable, it raises questions as to the sustainability of their work in the future. Unless able successors are found, or

institutional capacity is created to carry on their work, their struggle may be meaningless. An interesting finding is that local participation in conservation efforts may not only involve the lower and middle-income groups but may also sometimes be supported and spearheaded by local leaders with a sense of pride in their heritage. However, the latter phenomenon needs to be extended to more areas of the country before it will make a sizeable impact on the environment.

Green Pioneers is a valuable contribution to the development literature as it publicizes the practical efforts undertaken to encourage sustainable development in the country. It is also a tribute to the dedication and innovation of the pioneers themselves and each story is fascinating as well as heart warming.

Literacy Trends in Pakistan
UNESCO: Islamabad 2002.

This draft report by UNESCO contains information on broad trends in literacy in Pakistan, and by providing district-wise breakdowns, attempts to locate the problem of literacy at the grassroots level. Much of the data has been culled from government documents such as the 1989 Population Census and international publications.

UNESCO hopes that by providing Inter-district comparisons of literacy and participation rates at the primary level, it will help regional planners under the new devolution plan. The report contains some useful sections pertaining to definitions of literacy in Pakistan. It contrasts the changing definitions of literacy in the different census years, noting that since 1951, this definition has improved and evolved. It also provides comparisons with other countries and with international standards. One interesting table spells out the aims and target groups of Adult Literacy Plans in Pakistan within different Five Year Plans. As the Director of UNESCO mournfully notes in her preface to the report, "Pakistan is one of the countries of the world where the highest number of illiterates are concentrated." Therefore, the provision of an adult literacy component in the government's Education Sector Reforms is fully supported by UNESCO.

District wise data on literacy has been provided for three years: 1981, 1998 and 2001 (projected trends). In some districts, the data is missing for 1981 as well as 2001. Nevertheless with the 1998 data being available for all districts, UNESCO has been able to classify districts from Very Low Literacy to Very High Literacy, thus demonstrating which districts have made progress between 1981 and 1998 by shifting from one class to another. Notable in this regard are the achievements of Jhelum and Gujrat that have leapt from Low Level Literacy to Very High Level Literacy in two decades. While the report offers simple analysis of the statistical information provided, an in-depth consideration of the causes and consequences of the state of literacy in the country is not forthcoming

The report also establishes that the relationship between a mother's education and her average number of children is negative. Illiterate women have 4.72 children, on average, as compared to literate and secondary school certificate holders who have between 3.63 and 3.24 children. The provision of data on fertility trends is a welcome addition, as it will provide planners with a micro perspective on which districts to target to promote female education in order to lower fertility rates.

The report is an easily accessible handbook on selected district-wide educational data. The information is simply presented and UNESCO lets the facts speak for themselves by eschewing complex explanations and policy recommendations.

A.3

AN INTEGRATED SOCIAL POLICY AND MACROECONOMIC PLANNING MODEL

THE NEED FOR AN INTEGRATED MODEL

Historically, Pakistan's development planning models have not explicitly recognized the interdependence between social sector development, intergovernmental revenue-sharing transfers and the macroeconomy. The macroeconometric model of the Pakistan Institute of Development Economics was developed primarily to address the policy issues facing the macroeconomy and was updated in 1992 to include 97 equations. The model, developed by the Applied Economics Research Centre, explicitly incorporates linkages between federal and provincial governments, but its scope is limited to resource mobilization.

Recognizing this reality, the Social Policy and Development Centre (SPDC) has identified a pressing need for Pakistan to develop a macroeconomic model that explicitly incorporates the impact of public expenditure, which is close to 25% of the GDP. SPDC has been working diligently over the past few years to develop such a model.

STRUCTURE AND LINKAGES OF THE MODEL

The Social Policy and Development Centre has developed a unique economic model which can be used as an effective planning tool for social sector development. This model integrates the social, public finance and macroeconomic dimensions of the economy under one interrelated system.

Called the Integrated Social Policy and Macroeconomic (ISPM) Planning model, it provides the basic framework for analyzing the implications of SAP and numerous other economic and non-economic policy decisions on the long-term development of Pakistan's social sectors.

The model is highly disaggregated and covers all three levels of government. It is capable of predicting outcomes in great detail, even at the level of individual social service provision. Such a disaggregation of the model at the provincial level in terms of revenues and expenditures on social services (e.g., schools, hospitals, doctors, teachers, enrolments, etc.) is required to analyze the impact of SAP on the macroeconomy.

The model is based on consistent national level data from 1973 onwards and is estimated by single equation regression techniques. It consists of 265 equations, of which 129 are behavioural and the rest are identities. These equations are subsumed into 22 interrelated blocks. The blocks, along with their size in terms of equations and identities, are listed in **table A3.1**.

Although the model is broadly Keynesian in spirit, the specification of individual blocks and equations is based on a pragmatic approach. It captures the reality and non-market clearing aspects of Pakistan's economy. Thus, the macroeconomic block is essentially supply driven. In addition, the social sector indicators are also resource determined.

The model is both dynamic and rich in specification. The nature of linkages across the model varies. In some cases, the linkage is simultaneous, in which equations in a block not only determine equations in another block, but are also determined by them. Examples include the linkages between the macro production and input block, the production and macro expenditure blocks, and the fiscal revenues and expenditure blocks.

These simultaneous equations may be behaviourally determined or may just be identities. The broad links **(see chart A3.1)** of the model can be traced as follows.

Macro → Public Finance

The key link here is that developments in the macroeconomy influence the growth of the tax bases (including divisible pool taxes) and thus affect the fiscal status of different governments. The overall rate of inflation in the economy also affects the growth of public expenditure.

Public Finance → Social Sector Development

The availability of resources, both external and internal, determines the level of development and recurring outlays to social sectors by

CHART A3.1

BASIC STRUCTURE OF THE ISPM MODEL

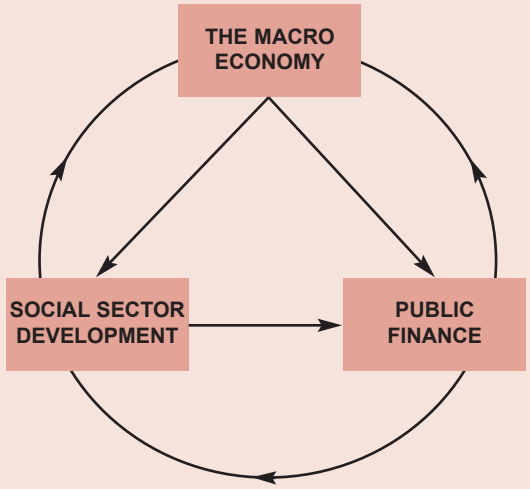


TABLE A3.1

INTEGRATED SOCIAL POLICY AND MACROECONOMIC (ISPM) MODEL

		Total Number of Behavioural Equations	Total Number of Identities	Total Number of Equations
A	Macroeconomic Production Block	6	14	20
B	Macro Input Demand Block	7	10	17
C	Macroeconomic Expenditure Block	10	10	20
D	Federal Revenue Block	5	7	12
E	Federal Expenditure Block	9	8	17
F	Federal Deficit Block	1	3	4
G	Provincial Revenue Block	7	5	12
H	Provincial Expenditure Block	12	5	17
I	Provincial and Total Budget Deficit	0	3	3
J	Local Revenue Block	3	4	7
K	Local Expenditure Block	10	6	16
L	Trade Block	5	4	9
M	Monetary Block	1	1	2
N	Price Block	4	5	9
O	Human Capital Index Block	27	27	54
P	Public Health Index Block	12	11	23
Q	Index of Economic Infrastructure Block	0	4	4
R	Index of Fiscal Effort Block	0	4	4
S	Poverty	2	3	5
T	Gender Inequality	1	1	2
U	Educated Unemployment	6	0	6
V	Malnutrition	1	1	2
	TOTAL	**129**	**136**	**265**

different levels of government, especially provincial and local.

Social Sector Development → Macroeconomy

Higher output of educated workers and their entry into the labour force raises the human capital stock and could contribute to improvements in productivity and a higher growth rate of output in the economy. Similarly, an improvement in public health standards may also have a favourable impact on production.

Public Finance → Macroeconomy

The level of government expenditure could exert a demand side effect on national income, while the size of the overall budget deficit of the federal and provincial governments (combined) influences the rate of monetary expansion and consequently the rate of inflation in the economy.

Social Sector Development → Public Finance

A vital link in the model is between the rate of social sector development and the state of public finances, especially of provincial governments, in terms of implications for the level of debt servicing and recurring expenditures.

Macroeconomy → Social Sector Development

Demographic and other socio-economic changes affect the demand for social sector facilities such as schools and hospitals, and thus influence the level of social sector outputs.

Linkages within macroeconomics, fiscal and social sector blocks

Apart from these broad linkages among different modules, there are also links between different blocks within each module.

An example of a major linkage within the macro module is the two-way linkage to and from the macro production block and macro input blocks. This link is due to the dependence of sectoral value added to the factors of production and input demand functions on the value of production. Macro production determines macro expenditure, as private consumption is influenced by income.

The two-way link between the macro production block and the trade block is due to the fact that the value of imports and exports determines and is determined by economic production activity. The trade gap affects the level of money supply.

Important linkages in the fiscal module consist of the simultaneous dependence of revenues of various levels of government and their expenditures. Non-tax receipts of governments have been made a function of the recurring expenditure on particular services via cost recovery ratios. Similarly, the level of government expenditure is affected by the government's level of resource generation.

Important vertical links between levels of government include fiscal transfers in the form of divisible pool transfers and non-development grants (in line with the feasible level of decentralization) from provincial to local governments. The link between the budget deficits of the federal and provincial governments and their revenues and expenditures is obvious.

FORECASTING AND POLICY ANALYSIS TOOL

Given the richness in structure and the complex web of interrelationships and interactions it embodies, the ISPM model can be used both as a forecasting tool for the medium and long-term, and for undertaking policy simulations to analyze the consequences of particular policy actions by the federal or other levels of government.

For example, if the federal government decides to pursue a policy of higher tax mobilization and opts for a

rigorous fiscal effort, the model can forecast the impact, not only on federal finances, but also on the fiscal status of the provincial governments. In this scenario, it could also forecast key macroeconomic magnitudes such as growth in the gross domestic product and the inflation rate. With respect to other specific policy issues, the model can also:

- provide short and medium-term projections of the quantum of revenue transfers to the provincial governments by the federal government under different scenarios;
- determine the impact of different rates and patterns of economic growth on provincial tax bases and revenues;
- determine the impact of changes in provincial expenditure priorities on fiscal status, levels of service provision and the overall macroeconomy;
- determine the impact of education expenditures by provincial governments on sectoral inputs (schools, teachers), enrolments, outputs, entry into the labour force and literacy rates;
- determine the impact of health expenditures by provincial governments on sectoral inputs (beds, rural health centres, doctors, nurses, paramedics) and on the health status of the population;
- determine the impact of higher levels of resource mobilization by provincial governments on federal transfers, sectoral levels of expenditure and fiscal status; and
- determine the impact of SAP-type programmes on the level and quality of service provision and on the financial position of provincial governments.

MONETARY BLOCK UPDATED TO THE ISPM MODEL

The monetary block has been enriched so as to endogenize the rate of interest as a product of the equilibrating process of money supply and money demand. In order to achieve this objective, demand and supply money equations are specified, along with an equilibrium condition. The updated module consists of the following equations:

1. Demand for Real Balances

$$L_t = \left(\frac{M}{P}\right)^d = L\left[GDP,\ TBR,\ PI\right]$$

$$M_t = M^s = mm.B = NCG + NCPS + NCO + NFA$$

2. Supply of Real Balance

$$mm = mm\left[\frac{CC}{DD}, \frac{TD}{DD}, \frac{DSB}{DD}, \frac{RFCD}{DD}, TBR\right]$$

$$B = B\left[PSBR,\ I_G,\ TBR,\ DR\right]$$

3. Sluggish Adjustment of Money Market

$$M_t = K\left[M_{t-1} - L_t\right]$$

4. Relation Between SR and LR Interest Rates

$$LTI = F\left[CMR,\ TBR,\ ER\right]$$

The previously mentioned equations (**see box A3.1** for a definitions) constitute a description of Pakistan's monetary sector that takes into consideration the following monetary transmission mechanisms:

- Estimating the level of aggregate money demand that is consistent with the monetary authorities' growth, inflation and interest rate targets.
- Estimating the money multiplier that is consistent with (a) the preferences of the general public regarding holding money in its various forms and (b) the target interest rate.
- Establishing a target for net foreign assets (NFA) that is consistent with the balance of payments forecast.
- Establishing a target for net credit to the government sector (NCG) that is consistent

BOX A4.1

DEFINITIONS OF VARIABLES

BDOV	Budget Deficit Overall (as defined in SPDC model)
CAG1	Current Account Gap (as defined in SPDC model)
CC	Currency in Circulation (= Currency issued - Currency in tills of Banks - Currency held by SBP)
CMR	Call Money Rate
DD	Demand Deposits
DISC_RATE	Discount Rate
DSB	Deposits of Scheduled Banks at State Bank of Pakistan (Reserves of Commercial Banks, held by SBP against demand and time deposits)
ER	Exchange Rate (as defined in SPDC model)
IGR	Real Government Investment (as defined in SPDC model)
INTA	Interest Rate on Advances (as defined in SPDC model)
LEN_RATE	Lending Rate (average interest rate on advances as computed in SBP report)
M2	Broad Money M2 (CC + DD + TD + OD + RFCD = NDA + NFA = Money Multiplier * M.Base)
MM	Money Multiplier (Ratio of Broad Money to Base Money)
NCGS	Net Credit to Government (Includes Credit for Commodity Operations, Credit for Budgetary Support, Zakat Fund Adjustment, Use of Privatization Proceeds)
NCGSE	Net Credit to Government Sector Enterprise (or Net Credit to Autonomous Bodies, after 1993) Includes Credit to WAPDA, OGDC, KESC, PTCL, PIA, Pak-Steel)
NCGT	Net Credit to Government Sector Total (Obtained as NCGS + NCGSE)
NCO	Other Items Net (Includes value of non-liquid assets of the banking system and SBP + Capital gains or losses on foreign exchange reserves)
NCPS	Net Credit to Private Sector (Obtained as NCPS_CB + NCPS_NBFI)
NCPS_CB	Net Credit to Private Sector by Commercial Banks
NCPS_NBFI	Net Credit to Private Sector by NBFIs (Includes Credit from ADBP, IDBP, PICIC, HBFC, ICP, SBFC, BEL, EPF, Pak-Libya Holding, Pak-Kuwait Investment, Saudi-Pak, NDFC, NDLC, RDFC)
NDA	Net Domestic Assets (= NCGS + NCGSE + NCPS_CB + NCPS_NBFI + NCO = NCGT + NCPS + NCO)
NFA	Net Foreign Assets in Rupee Terms (Obtained from Monetary Survey of SBP, also equal to average annual exchange rate * Foreign assets in dollar terms, where foreign assets in dollar terms must come from BOP module)
OD	Other Deposits at SBP (Includes Deposits of Government)
PI	GDP Deflator (as defined in SPDC model)
B	Base Money (Obtained as CC + CC_SB + DSB = total liabilities of SBP)
RFCD	Resident Foreign Currency Deposits
TB_RATE	Treasury Bill Rate (average rate on 6-month T-bills as computed in SBP report)
TD	Time Deposits
UCBP	Use of Cash Balances by Provinces (as defined in SPDC model)
WALR	Weighted Average Lending Rate (weighted average of interest rate on all advances, provided by SBP)
YDR	Real GDP Demand Side (as defined in SPDC model)

with public sector borrowing requirements (PSBR) and some reasonable assumptions with respect to the change in other items, net credit to others (NCO).

- Considering the appropriate rate of interest that determines the demand for net credit to the private sector (NCPS), given the total availability of domestic credit and the requirements of the public sector.

The model solves for the values of seven endogenous variables. The **table A3.2** shows the actual and forecasted (projected) values of some of the variables for the last decade. These are plotted in the graphs below. A diagramatic representation of key relationships between the variables is shown in **chart A3.2**.

The purpose of the model was to endogenize the interest rate, which has been successfully accomplished. The projected value of interest rates, both short and long term, are very close to their actual values. This serves to evaluate the effectiveness of monetary policy and relative efficacy of monetary and fiscal policies in stimulating growth and reduction in poverty.

MONETARY GROWTH

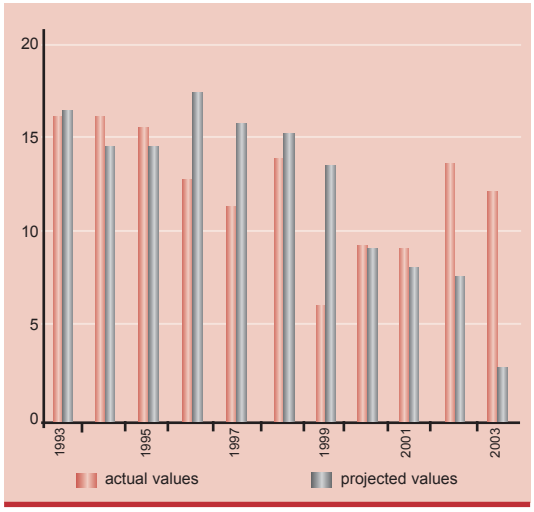
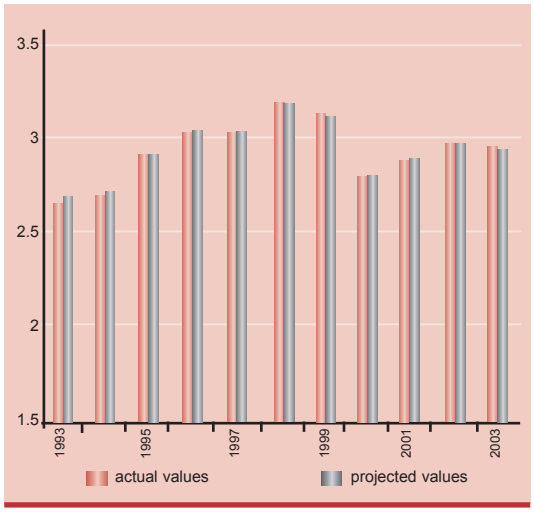


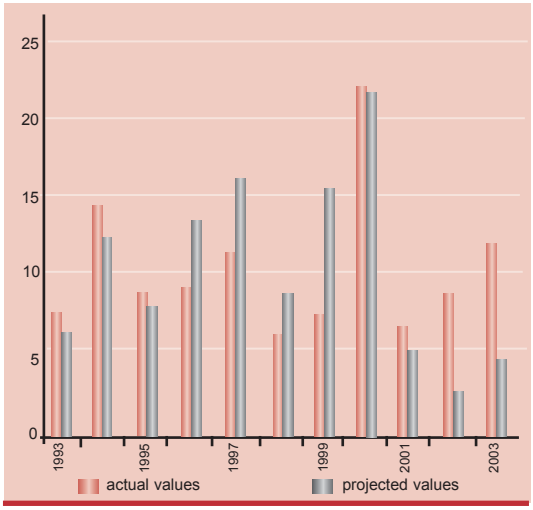
TABLE A3.2

Years	Growth in M2		Money Multiplier		Base Growth	Money	Call Money Rate		LR Interest Rate	
	Actual	*Projected*	*Actual*	*Projected*	*Actual*	*Projected*	*Actual*	*Projected*	*Actual*	*Pojected*
1993	16.35	16.91	2.66	2.69	7.54	6.19	9.81	9.05	12.46	13.26
1994	16.67	14.30	2.72	2.74	14.42	12.35	9.18	10.91	13.45	13.90
1995	15.91	14.35	2.92	2.91	8.97	8.34	10.33	11.22	13.91	13.84
1996	12.94	17.83	3.03	3.05	9.19	13.15	11.16	12.03	14.26	14.40
1997	11.51	15.84	3.03	3.04	11.26	16.14	12.97	12.16	14.71	15.13
1998	13.57	15.34	3.26	3.25	6.26	8.68	12.23	11.01	15.42	14.82
1999	5.97	13.78	3.22	3.20	7.43	15.34	7.84	8.55	14.46	13.79
2000	8.96	8.66	2.81	2.80	22.38	22.01	8.52	6.55	13.22	12.49
2001	8.58	7.64	2.86	2.87	6.87	5.22	8.96	7.67	13.32	13.31
2002	13.80	7.30	3.00	3.00	9.20	2.70	6.74	6.38	13.25	12.46
2003	11.80	2.80	2.98	2.96	12.86	4.41	2.10	2.24	9.00	9.97

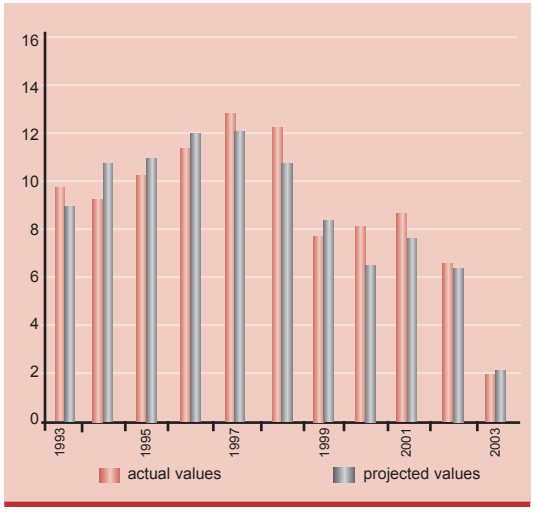
MONEY MULTIPLIER



GROWTH IN BASE MONEY



SR INTEREST RATE



LR INTEREST RATE

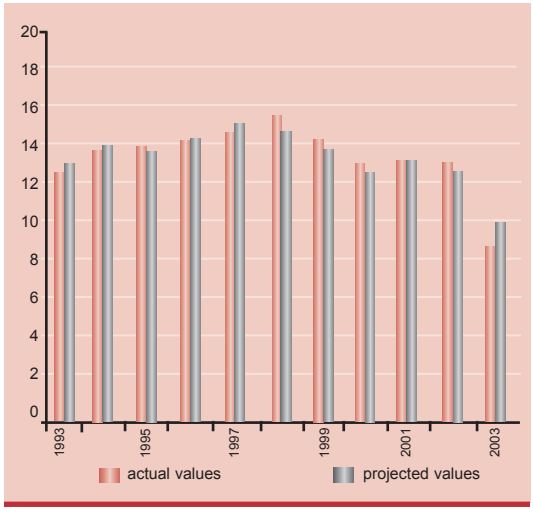


CHART A3.2

FORECASTING PAKISTAN'S MONETARY SURVEY : DIAGRAMATIC REPRESENTATION OF KEY RELATIONSHIPS

A.4

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FUTURE

SELECTED SOCIAL DEVELOPMENT INDICATORS

POPULATION 1

Year	Total population by sex (Thousands)			Rural population by sex (Thousands)			Sex ratio	Population growth rate (per cent)	Provincial share (per cent)
	Total	Male	Female	Total	Male	Female			
P U N J A B									
1975	40526	21628	18898	30229	16078	14152	114	2.79	58.98
1980	46429	24453	21975	33746	17688	16058	111	2.70	58.00
1985	52961	27716	25245	37883	19724	18159	110	2.61	57.52
1990	60151	31320	28831	42390	21954	20436	109	2.53	57.26
1995	68021	35242	32779	47174	24299	22874	108	2.44	57.23
2000	76589	39488	37101	52206	26741	25465	106	2.35	57.42
2003	81490	42111	39380	51450	26474	24976	107	2.04	57.32
S I N D H									
1975	15660	8332	7328	9183	4809	4374	114	3.60	22.79
1980	18576	9777	8799	10575	5468	5107	111	3.28	23.20
1985	21695	11389	10306	11993	6193	5799	111	2.96	23.56
1990	24946	13116	11830	13386	6947	6438	111	2.64	23.75
1995	28240	14861	13378	14682	7653	7029	111	2.32	23.76
2000	31474	16569	14905	15821	8276	7544	111	2.00	23.60
2003	33671	17764	15906	17829	9469	8360	112	2.10	23.68
N W F P									
1975	9204	4790	4414	7869	4068	3801	109	3.36	13.40
1980	10813	5632	5181	9192	4757	4435	109	3.14	13.51
1985	12568	6515	6053	10618	5468	5150	108	2.92	13.65
1990	14452	7448	7004	12131	6209	5921	106	2.70	13.76
1995	16442	8423	8019	13708	6972	6736	105	2.48	13.83
2000	18506	9420	9086	15321	7740	7581	104	2.26	13.87
2003	19708	10062	9646	16495	8386	8110	104	2.12	13.86
B A L O C H I S T A N									
1975	3318	1758	1560	2781	1464	1317	113	6.97	4.83
1980	4237	2235	2002	3572	1871	1701	112	3.10	5.29
1985	4857	2574	2283	4017	2113	1904	113	2.58	5.28
1990	5496	2926	2569	4426	2339	2087	114	2.37	5.23
1995	6155	3287	2868	4808	2547	2261	115	2.17	5.18
2000	6823	3649	3174	5145	2727	2418	115	1.96	5.11
2003	7310	3908	3402	5615	3000	2615	115	2.02	5.14
P A K I S T A N									
1975	68708	36508	32200	50062	26419	23643	113	3.26	100.00
1980	80055	42097	37958	57085	29784	27301	111	2.92	100.00
1985	92081	48194	43887	64511	33499	31012	110	2.74	100.00
1990	105044	54810	50234	72332	37449	34883	109	2.57	100.00
1995	118857	61814	57044	80372	41472	38900	108	2.40	100.00
2000	133392	69125	64266	88493	45484	43009	108	2.23	100.00
2003	142179	73845	68335	91394	47313	44080	108	2.06	100.00

Definitions:
- **Sex Ratio:** The number of males per hundred females.
- **Provincial Share:** The percentage share in total population of Pakistan (four provinces combined).

Source:
SPDC Database

DEMOGRAPHIC PROFILE 2

Year	Crude death rate			Crude birth rate			Infant mortality rate			Natural growth rate			Life expectancy (years)
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	
PUNJAB													
1976-79	9.5	11.7	11.1	41.4	42.5	42.2	80	107	100	3.2	3.1	3.1	
1984-86	8.6	12.5	11.0	39.8	44.6	42.7	88	131	120	3.1	3.2	3.2	57.6
1987-89	8.3	11.5	10.6	37.6	43.0	41.4	93	119	105	2.9	3.2	3.1	57.8
1990-92	7.9	11.2	10.2	33.5	41.2	38.9	83	129	110	2.6	3.0	2.9	58.0
1996	7.1	9.9	9.1	30.9	37.2	35.3	64	100	86	2.4	2.7	2.6	60.0
1997	7.8	9.9	9.2	30.3	35.8	34.1	n.a	n.a	n.a	2.3	2.6	2.5	60.9
1999	7.4	9.0	8.3	28.6	32.5	30.8	n.a	n.a	n.a	2.1	2.4	2.3	62.3
2000	7.0	8.7	8.0	25.2	32.1	29.0	71	89	82	1.8	2.3	2.1	n.a
SINDH													
1976-79	6.1	11.5	9.2	33.7	43.9	39.5	57	83	74	2.8	3.2	3.0	
1984-86	8.5	13.0	10.6	40.2	45.3	42.5	86	138	114	3.2	3.2	3.2	55.1
1987-89	7.8	13.7	10.8	35.4	43.3	39.4	76	145	113	2.8	3.0	2.9	54.4
1990-92	7.1	13.2	10.1	34.7	44.0	39.3	68	138	98	2.8	3.1	2.9	55.4
1996	7.3	9.9	8.6	32.8	37.9	35.5	54	126	87	2.6	2.8	2.7	55.4
1997	6.5	10.9	8.8	29.3	37.8	33.7	n.a	n.a	n.a	2.3	2.7	2.5	59.1
1999	6.2	9.7	7.9	31.9	37.1	34.5	n.a	n.a	n.a	2.6	2.7	2.7	62.5
2000	5.9	9.8	7.8	25.0	32.6	28.7	61	83	73	1.9	2.3	2.1	n.a
NWFP													
1976-79	9.0	11.1	10.7	41.0	43.6	43.2	100	111	109	3.2	3.3	3.2	
1984-86	10.1	9.8	9.7	38.8	46.3	44.2	146	83	93	2.9	3.7	3.4	58.7
1987-89	7.3	9.7	9.3	38.1	46.9	45.5	67	80	76	3.1	3.7	3.6	59.3
1990-92	7.5	10.1	9.7	34.0	44.7	43.1	74	94	90	2.6	3.5	3.3	59.6
1996	7.3	8.9	8.6	30.1	36.7	35.6	77	81	80	2.3	2.8	2.7	56.6
1997	7.6	9.2	8.9	31.3	34.7	33.9	n.a	n.a	n.a	2.4	2.5	2.5	57.5
1999	7.7	9.4	8.8	30.0	30.4	30.2	n.a	n.a	n.a	2.2	2.1	2.1	56.6
2000	6.8	8.1	7.6	29.3	30.3	29.9	71	82	78	2.3	2.2	2.2	n.a
BALOCHISTAN													
1976-79	6.4	7.2	7.1	33.1	36.9	36.3	44	69	66	2.7	3.0	2.9	
1984-86	8.4	13.8	12.1	45.4	45.6	45.9	101	166	155	3.7	3.2	3.4	50.4
1987-89	8.7	11.4	11.0	44.4	44.3	44.4	104	117	114	3.6	3.3	3.3	51.0
1990-92	7.9	12.0	11.5	35.5	45.6	44.1	88	128	117	2.8	3.4	3.3	51.5
1996	4.2	7.5	6.8	25.4	35.1	32.9	81	89	87	2.1	2.8	2.6	57.8
1997	7.1	7.7	7.5	29.6	33.4	32.5	n.a	n.a	n.a	2.2	2.6	2.5	62.7
1999	8.6	9.8	9.5	28.9	29.2	29.1	n.a	n.a	n.a	2.0	1.9	2.0	57.3
2000	6.9	7.0	7.0	28.8	29.2	29.0	86	92	89	2.2	2.2	2.2	n.a
PAKISTAN													
1976-79	8.2	11.4	10.5	38.4	42.7	41.5	74	101	94	3.0	3.1	3.1	
1984-86	8.7	12.2	10.8	40.1	45.1	43.0	92	126	116	3.1	3.3	3.2	56.9
1987-89	8.1	11.6	10.5	37.0	43.7	41.6	85	117	106	2.9	3.2	3.1	57.1
1990-92	7.6	11.4	10.2	34.0	42.5	39.8	77	125	105	2.6	3.1	3.0	57.3
1996	7.1	9.6	8.8	31.3	37.1	35.2	64	94	85	2.4	2.8	2.6	63.0
1997	7.3	9.6	8.9	30.1	35.6	33.8	73	89	84	2.3	2.6	2.5	60.1
1999	7.1	9.2	8.3	27.8	32.2	30.2	72	88	82	2.1	2.3	2.2	61.3
2000	6.7	8.8	7.8	25.8	31.8	29.1	69	87	80	1.9	2.3	2.1	n.a

Definitions:
- **Crude birth rate:** The number of live births per thousand population in a year
- **Crude death rate:** The number of deaths per thousand population in a year
- **Infant mortality rate:** The number of deaths of children under 1 year per thousand live births in a year
- **Natural growth rate:** ([Crude birth rate]-[Crude death rate])/10
- **Life expectancy:** The number of years a newborn infant would live if prevailing patterns of mortality at the time of birth were to stay the same throughout the child's life

Source:
GOP, Pakistan Demographic Surveys, Federal Bureau of Statistics (various issues)

DEMOGRAPHIC PROFILE 3

Year	Percentage of live births in medical institutions			Fertility rate (per woman)			Sex ratio (%)			Dependency ratio			Contraceptive prevalence rate (%)
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	
P U N J A B													
1976	4.9	0.7	1.8	7.3	7.1	7.1	111	107	108	96	98	98	n.a
1979	4.6	0.6	1.6	7.4	7.3	7.3	110	107	108	96	100	99	9.3
1985	0.0	0.0	8.2	6.3	8.0	7.2	107	104	105	94	101	98	n.a
1990	18.2	4.7	8.2	5.2	6.6	6.1	106	103	104	89	98	95	13.0
1996	28.9	9.4	14.3	4.6	5.9	5.4	106	105	105	91	97	95	26.8[a]
2000	33.6	13.1	21.1	3.6	4.9	4.3	108	104	106	73	91	82	n.a
S I N D H													
1976	33.6	0.6	12.4	5.4	7.3	6.4	112	116	114	87	97	93	n.a
1979	32.4	0.2	11.2	5.1	7.3	6.3	112	117	115	84	98	92	9.6
1985	0.0	0.0	19.1	5.9	7.5	6.6	107	114	110	91	103	96	n.a
1990	41.4	4.1	20.7	5.2	6.9	6.0	109	109	109	87	103	95	12.0
1996	48.0	8.8	26.7	4.9	6.2	5.5	108	113	111	87	99	93	23.4[a]
2000	41.1	13.4	25.9	3.6	4.9	4.3	109	111	110	79	100	88	n.a
N W F P													
1976	4.6	0.2	0.9	6.6	6.9	6.8	108	101	102	94	108	106	n.a
1979	4.5	0.6	1.3	7.3	6.7	6.7	109	100	101	100	115	112	9.4
1985	0.0	0.0	3.8	7.0	8.4	7.8	107	102	104	99	110	105	n.a
1990	19.5	3.7	5.6	5.0	6.9	6.6	107	102	103	90	113	109	9.0
1996	25.1	12.3	13.6	4.4	5.8	5.5	107	102	103	91	114	110	18.7[a]
2000	42.0	21.3	28.6	4.3	4.7	4.5	106	103	104	81	105	96	n.a
B A L O C H I S T A N													
1976	19.8	0.8	2.9	5.9	7.3	7.1	106	108	108	86	91	90	n.a
1979	17.9	0.6	4.1	7.6	4.9	5.2	101	115	113	92	95	94	4.3
1985	0.0	0.0	2.6	6.6	6.5	6.6	114	109	111	105	109	107	n.a
1990	26.2	6.7	9.0	5.2	7.6	7.3	110	105	106	103	115	113	2.0
1996	17.6	6.4	7.7	4.0	6.1	5.6	109	115	113	109	108	108	7.1[a]
2000	76.6	4.6	30.2	4.7	4.5	4.6	119	112	114	96	106	102	n.a
P A K I S T A N													
1976	13.7	0.6	4.1	6.6	7.1	6.9	111	108	109	93	99	97	5.2
1979	13.0	0.5	3.8	6.6	7.1	6.9	110	108	109	92	101	98	n.a
1985	19.8	2.5	10.1	6.2	7.8	7.1	108	106	107	94	103	100	9.1
1990	26.8	4.6	10.6	5.2	6.7	6.2	107	104	105	89	102	98	12.0
1996	35.1	9.7	16.4	4.7	5.9	5.5	107	106	106	90	101	97	23.9[a]
2000	38.7	13.9	23.8	3.7	4.9	4.3	109	106	107	76	96	86	n.a

[a] For contraceptive prevalance rate, fiscal years are used (eg., 1976-77)

Definitions:

- **Percentage of births in medical institutions:** The number of births in medical institutions as a percentage of total births
- **Fertility rate:** The average number of children that would be born to a woman if she were to live to the end of her childbearing age and bear children at each age in accordance with prevailing age-specific fertility rates
- **Sex ratio:** The number of males per hundred females
- **Dependency ratio:** Dependent population (those under 15 and over 64) as percent of the working-age population (aged 15 to 64)
- **Contraceptive prevalence rate:** The percentage of currently married women aged 15-49 years who are currently using a family planning method

Sources:

1. GOP, Pakistan Demographic Surveys, Federal Bureau of Statistics (various issues)
2. Pakistan Contraceptive Prevalence Surveys, Population Welfare Division, Ministry of Planning and Development, Islamabad
3. Pakistan Integrated Household Survey (various issues)

EDUCATION 4

Year	Literacy Rate			Mean years of schooling			Combined enrolment rate			Enrolment rate (Primary)		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
PUNJAB												
1975	31.5	12.3	22.7	2.1	0.4	1.3	29.7	14.8	22.8	57.8	32.9	46.0
1980	35.6	15.7	26.3	2.7	0.6	1.7	26.9	14.9	21.2	54.5	34.1	44.8
1985	40.0	19.5	30.3	3.2	0.9	2.1	30.6	17.3	24.3	63.3	39.9	52.1
1990	45.5	24.2	35.4	3.3	1.0	2.2	36.4	23.6	30.3	74.1	53.8	64.3
1995	52.9	30.3	42.1	3.9	1.4	2.7	36.0	27.0	31.6	80.7	63.1	72.2
2001	61.8	40.0	51.1	9.0	4.7	3.5	38.2	30.7	34.5	86.1	71.2	78.9
SINDH												
1975	39.1	19.8	30.4	3.1	0.9	2.1	26.9	13.5	20.7	52.2	23.2	38.3
1980	39.3	21.2	31.0	3.1	0.9	2.2	29.1	14.9	22.5	58.2	25.5	42.3
1985	41.6	23.5	33.3	3.9	1.4	2.7	32.3	16.2	24.7	63.6	28.7	46.5
1990	45.6	26.9	36.9	4.4	1.5	3.0	32.5	13.1	23.3	63.7	20.8	42.9
1995	51.7	31.5	42.3	4.7	2.0	3.4	31.6	17.3	24.8	87.2	49.4	69.0
2001	57.6	37.8	48.3	10.4	5.9	4.3	34.5	24.0	29.4	73.4	50.0	62.2
NWFP												
1975	23.9	5.2	15.1	1.9	0.2	1.1	33.4	9.9	22.3	68.6	22.3	46.3
1980	25.3	6.2	16.3	2.5	0.4	1.5	32.1	8.9	21.3	69.9	20.5	46.1
1985	29.5	8.5	19.5	2.5	0.3	1.3	33.2	9.0	21.8	73.0	21.4	48.2
1990	36.1	12.0	24.5	2.6	0.3	1.5	43.5	12.1	28.5	93.9	27.9	62.1
1995	45.3	17.0	31.5	3.1	0.4	1.7	46.3	17.7	32.5	90.9	47.3	69.8
2001	58.0	22.7	40.4	8.0	1.7	2.5	41.1	32.9	37.2	100.1	60.9	81.3
BALOCHISTAN												
1975	13.2	3.7	9.0	1.2	0.1	0.7	13.4	4.4	9.4	29.7	9.0	19.6
1980	14.6	4.0	9.8	1.9	0.4	1.2	13.4	4.2	9.3	30.7	8.0	19.6
1985	18.1	5.6	12.5	1.5	0.3	1.5	18.9	6.8	13.5	44.0	13.8	29.6
1990	23.1	8.2	16.3	1.9	0.3	1.1	26.0	9.1	18.4	59.9	19.9	41.2
1995	30.4	11.9	21.9	1.8	0.2	1.1	30.1	13.1	22.4	67.0	28.6	49.6
2001	42.6	18.7	31.4	5.3	1.0	1.7	31.0	19.7	25.8	65.4	47.8	57.6
PAKISTAN												
1975	31.4	12.6	22.8	2.2	0.5	1.4	28.7	13.4	21.6	56.6	27.8	42.8
1980	34.0	15.1	25.2	2.7	0.6	1.8	27.3	13.5	20.8	56.2	28.5	42.8
1985	37.9	18.3	28.7	3.2	0.9	2.1	30.7	15.4	23.4	63.7	32.9	48.9
1990	43.2	22.4	33.3	3.4	1.0	2.3	35.9	18.8	27.7	73.7	40.0	57.5
1995	50.5	27.9	39.7	3.9	1.4	2.7	36.1	22.7	29.6	82.9	55.6	69.8
2001	63.0	38.0	50.5	8.2	3.4	3.0	37.3	28.9	33.2	83.9	63.5	74.2

Notes:
1. Figures for Pakistan represent the four provinces combined
2. Literacy rate is estimated using 1998 population census
3. Primary and secondary school enrolment represents enrolment in the government sector only
4. Tertiary enrolment is the sum of intermediate college, degree college, and university enrolment
5. Degree college enrolment is the sum of general degree college, post graduate college and professional degree college enrolment

Definitions:
- **Literacy rate:** The number of literate persons as a percentage of population aged 10 and above
- **Mean year of schooling:** Average number of years of schooling received per person aged 25 and above
- **Combined enrolment rate:** The number of students enroled in all levels as a percentage of the population aged 5 to 24
- **Enrolment rate (primary):** The number of students enroled in primary level classes (I to V) as a percentage of the population aged 5 to 9

Sources:
1. Development Statistics of Provincial Governments (various issues)
2. Education Statistics of Provincial Governments (various issues)
3. GOP, Pakistan School Statistics, Central Bureau of Education (various issues)
4. GOP, Pakistan Education Statistics, Central Bureau of Education (various issues)
5. National and Provincial Education Management Information Systems (various issues)
6. GOP, Labour Force Survey, Federal Bureau of Statistics (various issues)
7. GOP, Census Report of Pakistan, Population Census Organization (various issues)
8. Facts & Figures Pakistan 2002, Ministry of Education, EFA Wing

EDUCATION 5

Year	Pupil-teacher ratio (Primary)			Percentage of cohort reaching Class V			Availability of primary schools		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
P U N J A B									
1975	43.4	39.6	42.0	52.1	31.2	43.8	176	258	207
1980	41.5	41.1	41.3	50.6	29.1	41.3	177	251	206
1985	36.1	43.3	38.4	44.1	28.0	37.2	129	256	169
1990	38.6	46.7	41.5	46.2	26.9	37.0	136	199	160
1995	35.9	49.9	40.9	50.0	32.8	41.3	149	221	176
2001	60.2	40.2	49.4	46.8	34.1	40.6	157	250	191
S I N D H									
1975	27.9	20.6	25.3	36.8	43.5	38.6	136	661	220
1980	35.3	25.8	31.9	37.7	46.0	40.0	154	802	255
1985	40.2	30.1	36.5	36.2	41.9	37.9	129	633	210
1990	40.4	20,1	32.6	40.6	51.6	42.9	81	519	138
1995	22.0	27.1	23.4	38.5	35.4	37.5	82	416	134
2001	25.8	28.8	26.8	42.5	46.5	43.8	74	374	119
N W F P									
1975	52.5	52.2	52.4	40.4	37.5	39.7	196	510	279
1980	68.8	54.8	65.2	27.9	30.9	28.5	209	547	297
1985	50.9	48.9	50.5	23.5	20.3	22.8	207	541	294
1990	44.7	36.5	42.6	22.0	17.5	21.0	116	357	172
1995	36.8	41.8	38.1	21.2	20.9	21.1	83	287	126
2001	34.7	38.2	35.9	73.2	62.5	69.3	99	200	131
B A L O C H I S T A N									
1975	35.2	40.2	36.2	20.1	23.5	20.8	165	686	262
1980	38.3	53.9	40.7	22.9	21.8	22.7	197	857	315
1985	40.4	84.0	45.7	15.9	25.2	17.8	121	895	207
1990	23.6	41.0	26.1	14.2	26.8	16.5	93	869	159
1995	20.7	38.3	23.8	17.5	11.3	15.6	85	426	133
2001	66.7	55.4	62.0	39.6	43.2	40.9	90	206	120
P A K I S T A N									
1975	39.6	34.4	37.8	45.2	33.7	41.3	167	343	221
1980	42.6	37.4	40.8	41.3	32.2	38.1	176	352	232
1985	39.1	40.4	39.5	36.1	29.5	33.8	136	348	192
1990	38.7	38.9	38.8	36.5	27.9	33.4	112	268	156
1995	30.7	42.5	34.4	37.3	30.4	34.5	110	267	153
2001	42.9	37.6	40.6	49.4	40.0	45.3	112	257	154

Definitions:

- **Pupil-teacher ratio (primary):** The ratio of pupils enrolled in primary level classes (I to V) to the number of teachers in primary schools
- **Percentage of cohort reaching Class V:** The percentage of children starting primary school who reach Class V
- **Availability of primary schools:** The ratio of population aged 5 to 9 to the number of primary schools

Sources:

1. Development Statistics of Provincial Governments (various issues)
2. Education Statistics of Provincial Governments (various issues)
3. GOP, Pakistan School Statistics, Central Bureau of Education (various issues)
4. GOP, Pakistan Education Statistics, Central Bureau of Education (various issues)
5. National and Provincial Education Management Information Systems (various issues)

EDUCATION 6

Year	Availability of primary school teachers			Ratio of boys to girls (Primary)	% of female teachers (Primary)	Enrolment rate (Secondary)			Pupil-teacher ratio (Secondary)			Ratio of boys to girls (Secondary)	% of female teachers (Secondary)
	Male	Female	Total			Male	Female	Total	Male	Female	Total		
PUNJAB													
1975	75	120	91	1.9	36.0	29.6	10.0	20.8	28.5	8.5	18.9	3.6	48.0
1980	76	120	92	1.7	36.6	26.2	9.9	18.7	24.9	8.2	18.7	3.1	49.5
1985	57	108	74	1.7	32.6	28.4	12.0	20.8	26.7	8.6	18.1	2.7	53.5
1990	52	87	65	1.5	35.7	35.6	18.4	27.4	15.4	14.2	15.0	2.2	33.3
1995	50	84	62	1.3	35.9	39.5	24.2	32.2	14.6	16.6	15.3	1.8	33.2
2001	70	56	63	1.3	53.6	32.3	24.7	28.6	13.7	7.5	10.1	1.4	56.8
SINDH													
1975	53	89	66	2.5	35.6	22.1	14.3	18.7	21.2	14.3	18.2	1.9	43.3
1980	61	101	75	2.4	36.3	24.4	15.5	20.3	24.2	17.2	21.2	1.9	42.7
1985	63	105	78	2.3	36.6	29.1	16.8	23.5	30.3	19.4	25.6	2.0	43.5
1990	63	97	76	3.3	38.1	30.3	17.3	24.3	27.1	17.7	23.1	2.0	42.8
1995	34	80	47	2.0	28.5	26.8	16.5	22.0	24.8	19.5	22.6	1.9	40.4
2001	35	58	43	1.6	35.7	30.7	25.1	28.1	18.5	8.3	12.3	1.4	61.0
NWFP													
1975	76	234	113	3.3	23.4	24.3	3.9	15.1	17.7	16.7	17.6	7.6	12.2
1980	98	267	141	3.7	25.5	20.9	3.4	13.0	14.6	9.1	13.6	7.5	17.6
1985	70	228	105	3.7	22.1	21.9	3.7	13.5	14.0	10.3	13.4	7.0	16.2
1990	48	131	69	3.6	25.3	32.4	6.2	20.2	15.8	13.2	15.4	5.9	16.8
1995	38	101	55	2.5	26.0	41.7	11.4	27.4	18.8	17.9	18.6	4.1	20.7
2001	35	63	44	1.8	33.7	45.2	18.1	32.2	29.5	16.6	24.4	2.7	39.7
BALOCHISTAN													
1975	119	446	184	3.5	20.1	7.8	2.2	5.4	7.0	6.7	6.9	4.8	17.6
1980	125	672	207	4.0	15.1	7.3	2.6	5.3	6.7	5.8	6.5	3.7	23.5
1985	92	607	155	3.5	12.2	9.3	3.9	7.1	5.9	6.7	6.1	3.2	21.5
1990	40	206	64	3.4	14.4	13.2	4.7	9.6	5.7	6.8	5.9	3.9	17.8
1995	33	127	50	2.5	17.8	22.2	7.2	15.9	8.5	9.3	8.6	4.3	16.4
2001	102	116	108	1.7	41.4	19.4	12.3	16.4	4.4	5.8	4.8	2.2	25.7
PAKISTAN													
1975	70	124	88	2.2	34.1	26.1	9.7	18.8	24.0	10.0	18.1	3.3	41.7
1980	76	131	95	2.1	34.9	23.9	9.8	17.5	21.7	10.0	16.7	2.9	42.8
1985	61	123	81	2.1	31.7	26.5	11.5	19.6	23.1	10.6	17.5	2.7	45.0
1990	53	97	68	2.0	33.4	32.6	15.7	24.7	16.3	14.7	15.8	2.4	31.9
1995	42	87	56	1.6	31.1	35.9	19.8	28.3	16.0	16.9	16.3	2.0	31.6
2001	51	59	55	1.4	44.2	33.1	23.3	28.4	15.2	8.1	11.4	1.6	54.3

Definitions:

- **Availability of primary school teachers:** The ratio of population aged 5 to 9 to the number of primary school teachers
- **Ratio of boys to girls (primary):** The ratio of male students to female students enrolled in primary level classes (I to V)
- **Percentage of female teachers (primary):** The number of female teachers as a percentage of total teachers in primary schools
- **Enrolment rate (secondary):** The number of students enrolled in secondary level classes (VI to X) as a percentage of the population aged 10 to 14
- **Pupil-teacher ratio (secondary):** The ratio of pupils enrolled in secondary level classes (VI to X) to the number of teachers in secondary schools
- **Ratio of boys to girls (secondary):** The ratio of male students to female students enrolled in secondary level classes (VI to X)
- **Percentage of female teachers (secondary):** The number of female teachers as a percentage of total teachers in secondary schools

Sources:

1. Development Statistics of Provincial Governments (various issues)
2. Education Statistics of Provincial Governments (various issues)
3. GOP, Pakistan School Statistics, Central Bureau of Education (various issues)
4. GOP, Pakistan Education Statistics, Central Bureau of Education (various issues)
5. National and Provincial Education Management Information Systems (various issues)

EDUCATION 7

Year	Percentage of cohort reaching Class VI			Percentage of cohort reaching Class X			Availability of secondary schools			Availability of secondary school teachers		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
PUNJAB												
1975	87.0	62.0	79.8	41.6	36.6	40.5	906	1705	1147	96	85	91
1980	91.8	66.9	84.1	32.8	35.6	33.5	947	1749	1200	95	83	89
1985	88.6	71.3	83.1	34.5	33.6	34.2	857	1569	1088	94	72	82
1990	88.2	81.2	85.8	34.7	33.2	34.2	706	998	819	43	78	55
1995	87.9	78.1	84.0	44.2	41.0	43.0	647	946	762	37	69	47
2001	83.5	85.5	84.3	32.0	32.2	32.1	280	909	421	42	30	35
SINDH												
1975	70.5	88.3	75.8	52.5	46.5	50.4	942	2066	1241	96	100	97
1980	70.6	88.0	76.1	56.0	47.0	52.7	1059	2472	1431	99	111	104
1985	81.8	89.2	84.2	52.7	48.3	51.3	1023	2687	1431	104	116	109
1990	83.5	94.5	86.9	46.9	45.2	46.4	938	1876	1220	90	103	95
1995	67.2	78.2	70.7	55.6	54.8	55.3	988	1890	1268	93	118	103
2001	56.5	68.4	60.7	57.8	65.2	60.4	367	1728	577	60	33	44
NWFP												
1975	60.1	27.1	52.5	50.3	47.3	50.0	987	3457	1455	73	431	117
1980	65.0	32.6	57.8	45.3	44.6	45.2	1092	3602	1597	69	271	105
1985	74.3	49.5	69.5	34.4	29.9	33.7	1041	3533	1541	64	281	99
1990	77.8	67.9	76.0	40.8	28.9	38.9	869	2811	1284	49	212	76
1995	96.0	72.8	89.8	46.6	36.0	44.3	802	1903	1105	45	157	68
2001	98.5	82.1	93.5	45.8	50.8	47.0	323	1228	500	65	92	76
BALOCHISTAN												
1975	72.7	49.5	67.4	42.1	40.9	41.9	905	2906	1277	90	308	128
1980	65.3	73.8	66.8	32.0	47.6	35.0	867	3183	1253	92	221	123
1985	72.2	54.6	67.1	37.4	29.2	35.5	769	2635	1097	63	169	86
1990	80.7	43.8	69.5	26.7	32.8	27.9	546	2086	791	43	146	62
1995	81.3	76.7	80.3	46.5	29.8	42.9	559	2117	808	38	129	54
2001	68.3	66.7	67.8	36.9	44.9	38.9	456	1328	628	23	47	29
PAKISTAN												
1975	79.4	63.2	74.9	44.5	40.1	43.5	924	1954	1208	92	103	97
1980	82.3	69.0	78.4	38.9	39.9	39.1	983	2084	1295	91	102	96
1985	84.6	73.7	81.3	38.6	37.7	38.4	907	1947	1205	87	92	89
1990	85.0	85.8	85.3	37.9	35.7	37.2	757	1288	937	50	94	64
1995	84.6	77.6	82.1	46.6	42.7	45.3	719	1201	886	44	86	57
2001	79.2	80.5	79.7	39.0	40.1	39.4	309	1079	468	46	35	40

Definitions:

- **Percentage of cohort reaching Class VI:** The percentage of children finishing primary school who reach Class VI
- **Percentage of cohort reaching Class X:** The percentage of children enrolled in Class VI who reach Class X
- **Availability of secondary schools:** The ratio of population aged 10 to 14 to the number of secondary schools
- **Availability of secondary school teachers:** The ratio of population aged 10 to 14 to the number of secondary school teachers

Sources:

1. Development Statistics of Provincial Governments (various issues)
2. Education Statistics of Provincial Governments (various issues)
3. GOP, Pakistan School Statistics, Central Bureau of Education (various issues)
4. GOP, Pakistan Education Statistics, Central Bureau of Education (various issues)
5. National and Provincial Education Management Information Systems (various issues)

HEALTH 8

Year	Population (in thousands) per						
	Hospital bed	Doctor (Total)	Doctor (Female)	Other medical personnel	Nurse	Paramedic	Rural health facility
P U N J A B							
1975	2.6	14.0	27.0	11.3	12.1	10.6	414
1980	2.3	9.4	19.4	9.3	9.3	9.4	218
1985	2.1	4.1	8.7	7.6	5.6	9.6	92
1990	2.1	2.7	5.6	7.6	3.8	11.3	61
1995	2.2	2.4	4.4	7.9	3.3	12.5	62
2000	2.3	2.1	3.2	n.a.	2.6	n.a.	62
S I N D H							
1975	3.1	7.9	11.9	39.5	59.3	19.7	340
1980	2.9	5.0	8.0	25.4	32.9	17.8	200
1985	2.9	1.9	3.0	25.8	35.7	15.9	180
1990	2.7	1.2	1.9	19.6	29.8	9.4	95
1995	2.8	1.0	1.5	14.5	22.1	6.8	71
2000	2.9	0.8	1.0	21.9	14.1	6.3	72
N W F P							
1975	1.6	8.7	26.1	17.2	29.0	5.5	437
1980	1.7	6.2	18.7	22.6	40.2	5.0	255
1985	1.5	3.6	10.3	7.0	11.5	2.5	76
1990	1.5	2.6	6.7	9.3	15.8	2.7	65
1995	1.6	2.2	5.0	6.0	9.1	2.9	63
2000	1.6	2.0	3.9	n.a.	6.2	n.a.	65
B A L O C H I S T A N							
1975	2.9	19.5	30.0	14.6	24.9	4.3	253
1980	2.2	11.4	22.5	22.5	41.1	3.8	255
1985	1.9	4.7	11.5	17.0	30.9	3.0	122
1990	1.8	3.5	7.8	13.1	23.9	2.2	38
1995	1.7	2.8	5.7	13.1	24.4	1.8	35
2000	1.6	2.4	3.8	6.3	16.6	n.a.	35
P A K I S T A N							
1975	2.5	11.2	21.0	13.3	16.9	9.7	388
1980	2.3	7.4	14.6	11.0	13.5	8.6	221
1985	2.1	3.1	6.2	7.5	8.2	6.8	99
1990	2.1	2.1	4.0	6.3	5.9	6.7	64
1995	2.1	1.8	3.1	5.7	5.0	6.4	61
2000	2.2	1.5	2.2	n.a.	3.8	n.a.	62

Notes:
1. Number of nurses and paramedics of provincial governments only
2. Data representing institutions run by armed forces and private sector are not included

Definitions:
- **Hospital Bed:** Total population in thousands divided by total number of beds in hospitals and dispensaries.
- **Doctor (total):** Total population in thousands divided by total number of registered medical doctors.
- **Doctor (female):** The female population in thousands divided by total number of registered female medical doctors.
- **Nurse:** Total population in thousands divided by the total number of nurses.
- **Paramedic:** Total population in thousands divided by the total number of paramedic personnel;
- **Rural Health Facilities:** Rural population in thousands divided by [No. of RHCs] + [No. of BHUs/5].

Sources:
1. Pakistan Statistical Yearbook (various issues)
2. Pakistan Medical and Dental Council, Islamabad
3. Development Statistics of Provincial Government (various issues)
4. Pakistan Nursing Council, Islamabad

LABOUR FORCE AND EMPLOYMENT 9

Year	Labour force participation rate									Percentage of literates in labour force		
	Urban			Rural			Total					
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Urban	Rural	Total
P U N J A B												
1975	71.6	4.0	39.8	78.8	9.0	46.1	77.0	7.6	44.6	48.5	19.6	25.9
1979	71.6	5.6	40.0	79.0	14.4	47.9	77.2	12.2	46.0	53.3	26.2	31.9
1985	72.1	4.6	40.0	78.2	11.3	45.7	76.5	9.4	44.1	54.0	28.9	35.2
1991	67.3	10.8	40.1	73.6	17.6	46.1	71.7	15.6	44.3	57.9	31.5	38.3
1995	65.7	8.6	38.1	72.3	16.1	44.9	70.4	14.0	42.9	65.7	34.3	44.7
2000	68.2	11.8	40.9	74.8	19.0	47.1	72.7	16.8	45.2	66.3	38.5	47.2
2002	69.1	13.4	42.4	72.9	22.9	48.2	71.6	19.9	46.3	67.1	44.0	50.8
S I N D H												
1975	67.1	3.7	37.6	85.2	6.0	49.1	75.6	4.8	43.1	56.9	23.5	38.4
1979	69.7	5.1	39.4	89.1	24.6	58.9	79.5	15.5	49.9	52.7	19.9	31.5
1985	69.7	3.5	38.2	85.0	13.2	52.1	77.4	8.2	45.1	57.6	22.3	37.1
1991	65.7	5.9	37.9	76.6	9.5	45.7	70.9	7.6	41.6	65.0	34.9	49.1
1995	62.8	5.2	35.9	73.8	6.0	43.1	68.7	5.6	39.7	68.4	30.1	48.2
2000	60.4	3.9	33.9	73.9	10.2	44.5	67.0	6.9	39.1	72.1	32.8	53.0
2002	65.1	5.5	37.2	76.6	6.8	44.3	70.4	6.1	40.5	72.9	43.2	58.0
N W F P												
1975	70.8	3.3	38.4	75.9	3.8	39.9	74.9	3.8	38.6	43.7	18.1	22.8
1979	65.3	5.2	37.3	73.8	4.3	38.8	72.2	4.4	38.5	48.1	25.6	26.0
1985	71.5	4.4	39.7	80.4	6.8	43.9	79.0	4.4	43.3	49.5	20.3	24.5
1991	66.1	5.1	36.2	70.1	10.2	41.0	69.5	9.3	40.2	51.2	28.6	32.0
1995	61.1	4.3	33.7	64.7	11.0	37.2	64.1	10.0	36.7	52.8	30.3	33.8
2000	62.8	7.4	36.0	66.0	13.1	39.3	65.4	12.1	38.7	56.4	33.5	37.4
2002	62.4	7.0	36.1	65.8	7.2	36.5	65.2	7.2	36.4	61.8	44.3	47.2
B A L O C H I S T A N												
1975	68.2	2.1	37.9	79.4	1.0	45.7	82.5	1.1	44.6	40.5	14.2	17.5
1979	63.3	2.9	36.8	84.1	3.1	47.5	80.3	3.1	45.9	41.6	14.0	18.0
1985	69.3	1.8	37.8	81.4	7.0	45.9	79.4	6.2	44.5	55.5	17.3	22.6
1991	63.1	4.7	36.8	74.3	6.2	43.7	72.7	5.9	42.6	54.8	18.2	22.9
1995	59.8	4.2	34.7	70.0	7.3	41.1	68.3	6.6	40.0	49.1	20.0	25.0
2000	59.1	5.0	34.0	71.1	5.1	40.3	69.0	5.1	39.2	58.5	23.6	29.7
2002	59.8	6.2	35.2	70.1	6.0	41.5	68.0	6.0	40.2	63.7	27.9	34.3
P A K I S T A N												
1975	69.6	3.5	38.8	79.8	7.6	45.9	76.7	6.4	43.8	51.2	19.8	28.1
1979	70.3	5.3	39.6	80.1	14.3	48.7	77.3	11.8	46.1	47.2	24.3	31.1
1985	71.1	4.1	39.3	79.8	10.7	46.5	77.1	8.7	44.2	45.0	26.0	33.9
1991	66.6	8.6	39.0	73.6	14.8	45.2	71.3	12.8	43.2	60.2	31.2	39.6
1995	64.3	7.0	37.0	71.3	13.3	43.1	69.1	11.4	41.3	64.3	34.1	43.3
2000	65.0	8.8	38.1	73.1	16.1	45.1	70.4	13.7	42.8	67.4	36.1	46.5
2002	66.9	10.0	39.9	72.2	16.8	45.2	70.3	14.4	43.3	68.7	43.1	51.3

Note:
1. Unemployed persons classified as persons of age 10 and above, looking for work

Definition:
● **Labour force participation:** The number of persons in the labour force as a percentage of the population of 10 years and above

Source:
Pakistan Labour Force Survey, Federal Bureau of Statistics, Government of Pakistan (various issues)

LABOUR FORCE AND EMPLOYMENT 10

Year	Percentage of labour force in			Percentage of labour force in			Percentage of labour force in		
	Agriculture	Industry (Urban)	Services	Agriculture	Industry (Rural)	Services	Agriculture	Industry (Total)	Services
PUNJAB									
1975	7.4	35.2	57.4	69.1	15.7	15.2	55.6	20.0	24.4
1979	6.4	35.6	58.0	63.5	19.0	17.5	51.6	22.5	25.9
1985	8.6	34.5	56.9	62.5	18.2	19.3	49.1	22.2	28.7
1991	9.4	29.1	61.5	62.6	17.4	20.0	48.9	20.4	30.7
1995	5.7	29.8	64.5	60.7	16.7	22.6	47.2	19.9	32.9
2000	6.5	32.1	61.4	66.4	13.2	20.4	50.2	18.3	31.5
2002	5.7	34.0	60.2	57.9	17.5	24.7	42.8	22.2	34.9
SINDH									
1975	7.4	35.2	57.4	69.1	15.7	15.2	55.6	20	24.4
1979	4.3	35.7	60.0	84.0	6.4	9.6	55.8	16.8	27.4
1985	5.2	33.5	61.3	82.9	6.6	10.5	50.3	17.9	31.8
1991	4.9	34.2	60.9	71.7	10.2	18.1	40.2	21.6	38.3
1995	5.2	27.8	67.0	69.8	11.3	18.9	42.4	18.3	39.4
2000	3.6	33.3	63.0	73.6	7.4	18.9	42.6	18.9	38.5
2002	3.9	31.1	65.0	69.5	8.6	21.9	37.6	20.0	42.9
NWFP									
1975	14.0	23.8	62.2	73.0	10.7	16.3	62.1	13.1	24.8
1979	7.3	24.2	68.4	56.1	17.1	26.8	48.0	18.3	33.8
1985	8.7	25.3	66.1	64.8	14.2	21.0	56.7	15.8	27.4
1991	7.9	25.7	66.4	58.0	14.6	27.4	50.5	16.3	33.3
1995	8.1	20.4	71.5	57.5	12.6	29.9	50.5	13.7	35.8
2000	8.1	20.2	71.7	54.1	16.5	29.5	46.8	17.1	36.2
2002	6.8	24.0	69.2	51.4	16.3	32.3	44.2	17.57	38.26
BALOCHISTAN									
1975	22.4	12.8	64.7	75.4	5.1	19.5	68.8	6.1	25.1
1979	6.0	17.7	76.3	69.9	10.7	19.5	60.6	11.7	27.7
1985	8.9	23.2	67.9	64.4	11.9	23.7	56.7	13.4	29.8
1991	11.4	17.7	70.8	68.1	7.9	24.0	60.9	9.2	29.9
1995	11.6	15.9	72.4	63.1	9.3	27.6	55.5	10.3	34.3
2000	5.7	17.4	76.9	63.2	10.3	26.5	54.6	11.4	34.0
2002	8.8	20.7	70.5	58.7	12.0	29.3	50.2	13.46	36.3
PAKISTAN									
1975	6.2	33.6	60.2	72.1	13.1	14.8	54.8	18.5	26.7
1979	5.7	34.5	59.8	67.4	15.9	16.8	52.7	20.3	27.0
1985	7.4	33.3	59.3	66.7	15.2	18.1	50.6	20.1	29.3
1991	7.6	30.7	61.7	63.8	15.4	20.8	47.5	19.8	32.7
1995	5.8	28.3	66.0	61.9	14.9	23.2	46.8	18.5	34.7
2000	5.7	31.5	62.8	65.8	12.5	21.6	48.4	18	33.6
2002	5.2	32.2	62.7	59.0	15.5	25.4	42.1	20.77	37.14

Source:
Pakistan Labour Force Survey, Federal Bureau of Statistics, Government of Pakistan (various issues)

LABOUR FORCE AND EMPLOYMENT 11

Year	Labour force unemployment rate								
	Urban			Rural			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
PUNJAB									
1975	3.5	1.8	3.5	1.7	0.7	2.0	2.1	0.9	2.1
1979	5.5	16.4	6.2	3.0	8.8	4.3	3.5	9.7	3.5
1985	6.8	6.5	6.7	3.7	1.5	4.3	4.5	2.0	4.5
1991	7.3	31.8	10.4	4.6	14.6	7.5	5.4	18.0	5.4
1995	7.0	24.6	8.9	4.3	8.3	6.0	5.0	11.2	5.0
2000	9.6	31.1	12.6	5.9	10.9	6.9	7.0	15.3	8.5
2002	8.6	23.0	10.8	6.2	12.0	7.6	7.0	14.4	8.5
SINDH									
1975	1.8	0.6	1.8	0.4	0.0	1.0	1.0	0.5	1.0
1979	3.5	13.8	4.0	0.6	0.2	1.8	1.8	2.2	1.8
1985	4.3	0.6	4.2	1.5	0.0	2.5	2.7	0.3	2.7
1991	4.0	16.7	4.9	1.3	10.7	3.5	2.6	13.1	2.6
1995	2.6	14.2	3.3	1.2	18.3	2.7	1.8	16.7	1.8
2000	3.1	20.1	4.0	1.5	11.0	2.5	2.2	13.7	3.2
2002	5.9	22.8	7.1	2.2	17.0	3.2	4.0	19.8	5.2
NWFP									
1975	2.4	2.5	2.5	2.0	0.0	2.0	2.0	0.5	2.0
1979	4.4	7.0	4.6	3.0	7.5	3.5	3.3	7.3	3.3
1985	6.2	4.3	6.1	3.8	0.0	3.9	4.2	0.3	4.2
1991	6.0	28.6	7.5	5.1	12.1	6.2	5.2	13.4	5.2
1995	6.1	39.1	8.1	4.3	23.0	7.3	4.6	24.1	4.6
2000	9.6	32.9	11.9	8.1	31.2	12.0	8.4	31.4	12.0
2002	12.2	39.0	14.6	10.8	30.8	12.8	11.0	32.1	13.1
BALOCHISTAN									
1975	0.4	0.0	0.4	0.1	0.0	0.1	0.2	0.0	0.2
1979	2.3	0.8	2.2	1.4	28.3	2.2	1.5	23.5	1.5
1985	4.2	0.0	4.1	1.1	0.0	1.5	1.6	0.0	1.6
1991	2.7	17.4	3.6	1.1	4.7	1.6	1.3	6.0	1.3
1995	1.4	27.2	2.9	2.2	25.7	3.9	2.1	25.8	2.1
2000	5.4	32.3	7.2	4.8	44.2	7.1	4.9	42.2	7.1
2002	8.8	58.0	12.7	4.9	31.8	6.7	5.6	37.4	7.8
PAKISTAN									
1975	2.8	1.8	2.7	1.4	0.6	1.7	1.8	0.7	1.8
1979	4.6	14.6	5.2	2.4	6.4	3.6	3.0	7.6	3.0
1985	5.8	4.1	5.7	3.2	0.8	3.7	4.0	1.4	4.0
1991	5.9	27.7	8.2	3.9	13.7	6.3	4.5	16.8	4.5
1995	5.3	22.6	6.9	3.6	11.7	5.4	4.1	13.7	4.1
2000	7.5	29.6	9.9	5.4	14.0	6.9	6.1	17.3	7.8
2002	7.9	24.2	9.8	6.1	14.1	7.6	6.7	16.5	8.3

Source:
Pakistan Labour Force Survey, Federal Bureau of Statistics, Government of Pakistan (various issues)

PUBLIC FINANCE 12

Year	Government expenditures (Rs. per capita) on[a]						Public expenditures on social sectors as % of total				
	Education	Health	Physical planning & housing	Other social sector	Total social sectors	Total expenditure	Education	Health	Physical planning & housing	Other social sector	Total social sectors
P U N J A B											
1975	178	50	66	5	299	837	21	6	8	1	36
1980	174	68	95	10	347	908	19	7	11	1	38
1985	270	93	77	14	454	1224	22	8	6	1	37
1990	357	133	82	24	596	1479	24	9	6	2	40
1995	454	109	80	24	668	1597	28	7	5	2	42
2000	400	108	86	25	619	1587	25	7	5	2	39
2001	387	107	55	11	560	1527	25	7	4	1	37
2002	358	110	28	10	507	1563	23	7	2	1	32
S I N D H											
1975	218	52	81	19	371	986	22	5	8	2	38
1980	228	49	66	9	352	1047	22	5	6	1	34
1985	287	75	88	11	461	1333	22	6	7	1	35
1990	401	141	86	27	656	1865	22	8	5	1	35
1995	545	130	82	20	777	2490	22	5	3	1	31
2000	498	153	46	24	722	2302	22	7	2	1	31
2001	475	129	44	30	677	2420	20	5	2	1	28
2002	538	160	44	19	759	2661	20	6	2	1	29
N W F P											
1975	176	72	42	33	291	990	18	7	4	3	29
1980	233	102	72	16	424	1218	19	8	6	1	35
1985	404	145	79	20	639	1791	23	8	4	1	36
1990	551	187	94	46	844	2401	23	8	4	2	35
1995	754	217	136	34	1184	2618	29	8	5	1	45
2000	734	184	121	41	1082	2608	28	7	5	2	41
2001	545	158	70	50	796	2236	24	7	3	2	36
2002	522	156	59	31	779	2245	23	7	3	1	35
B A L O C H I S T A N											
1975	171	61	42	9	284	1779	10	3	2	1	16
1980	167	59	38	45	308	1775	9	3	2	3	17
1985	364	145	145	60	714	2536	14	6	6	2	28
1990	525	241	254	65	1085	3416	15	7	7	2	32
1995	715	316	269	119	1419	3786	19	8	7	3	37
2000	828	217	368	104	1516	3613	23	6	10	3	42
2001	707	237	527	61	1533	3982	18	6	13	2	38
2002	748	266	435	43	1492	3902	19	7	11	1	38
P A K I S T A N											
1975	180	52	62	8	302	897	20	6	7	1	34
1980	188	66	80	12	346	995	19	7	8	1	35
1985	288	96	81	15	479	1353	21	7	6	1	35
1990	391	143	91	24	649	1743	22	8	5	1	37
1995	514	135	95	34	779	2000	26	7	5	2	39
2000	477	130	93	30	731	1942	25	7	5	2	38
2001	433	122	76	19	650	1904	23	6	4	1	34
2002	423	130	55	17	625	1944	22	7	3	1	32

[a] at constant prices of 2001-2002

Note:
1. Per capita expenditure is based on the 1998 head count

Definitions:
- **Expenditures:** Represents both current and development, combined
- **Physical planning & housing expenditures:** Consists of expenditure on public health services and urban town planning and regulatory services, housing and physical planning

Source:
Annual Budget Statements of Provincial Governments (various issues)

SHELTER 13

Indicators	Unit	Years 1980	1989	1998
R U R A L				
Growth rate of housing units	%		2.0	2.2
Persons per housing unit	No.	6.6	6.7	6.5
Rooms per housing unit	No.	1.8	2.0	2.1
Persons per room	No.	3.6	3.4	n/a
Nature of tenure				
Owned	%	83	91	87
Rented	%	2	2	2
Rent-free	%	15	7	11
Quality of construction				
Pucca (baked bricks/blocks/stone)	%	30	49	45
Semi-pucca (unbaked bricks/earthbound)	%	59	46	45
Kutcha (wood/bamboo and others)	%	11	5	9
Housing unit with:				
Electricity	%	15	51	61
Inside piped water	%	3	9	13
Gas piped	%	0	1	2
U R B A N				
Growth rate of housing units	%		3.3	3.1
Persons per housing unit	No.	7.0	6.9	6.6
Rooms per housing unit	No.	2.2	2.3	2.4
Persons per room	No.	3.2	3.0	n/a
Nature of tenure				
Owned	%	68	79	68
Rented	%	22	18	23
Rent-free	%	10	3	9
Quality of construction				
Pucca (baked bricks/blocks/stone)	%	79	89	85
Semi-pucca (unbaked bricks/earthbound)	%	18	10	13
Kutcha (wood/bamboo and others)	%	3	1	2
Housing unit with:				
Electricity	%	71	92	93
Inside piped water	%	38	60	58
Gas piped	%	20	42	56
O V E R A L L				
Growth rate of housing units	%		2.4	2.5
Persons per housing unit	No.	6.7	6.7	6.5
Rooms per housing unit	No.	1.9	2.0	2.2
Persons per room	No.	3.5	3.3	n/a
Nature of tenure				
Owned	%	78	89	81
Rented	%	8	5	9
Rent-free	%	14	7	10
Quality of construction				
Pucca (baked bricks/blocks/stone)	%	44	61	58
Semi-pucca (unbaked bricks/earthbound)	%	48	35	35
Kutcha (wood/bamboo and others)	%	9	4	7
Housing unit with:				
Electricity	%	31	64	71
Inside piped water	%	13	25	27
Gas piped	%	6	14	19

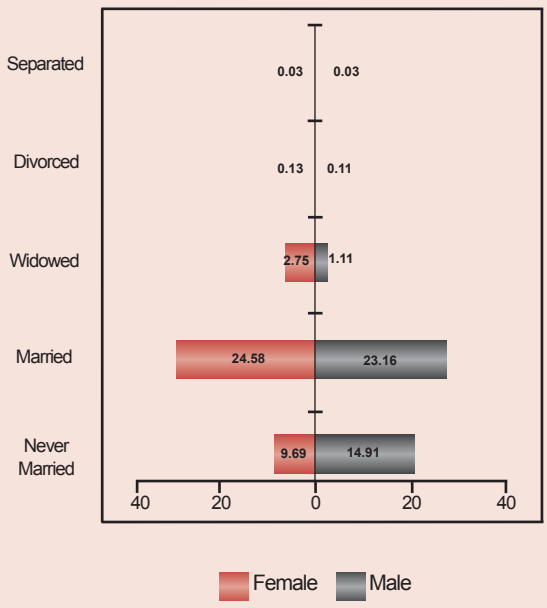
Note:
1. Gas piped and Gas cylinder are combined for the year 1980, while for 1989 and 1998 only the term 'gas' is mentioned

Sources:
1. GDP Housing Census Report, Population Census Organisation (PCO) (1980)
2. GDP Survey of Housing and Housing Facilities in Pakistan, FBS(1989)
3. GDP Census Bulletin of Pakistan, Population and Housing Census, PCO (1998)

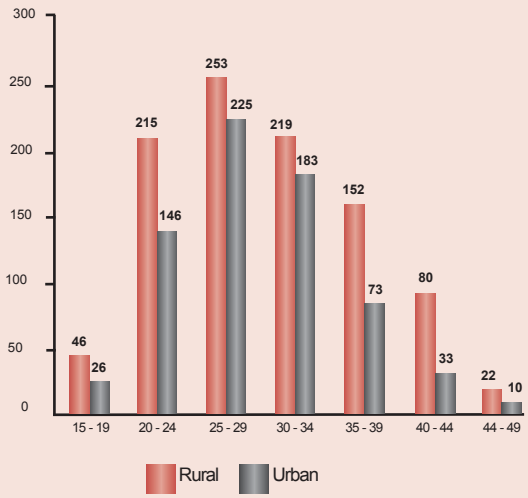
SELECTED GENDER INDICATORS 1

POPULATION BY AGE GROUP AND SEX

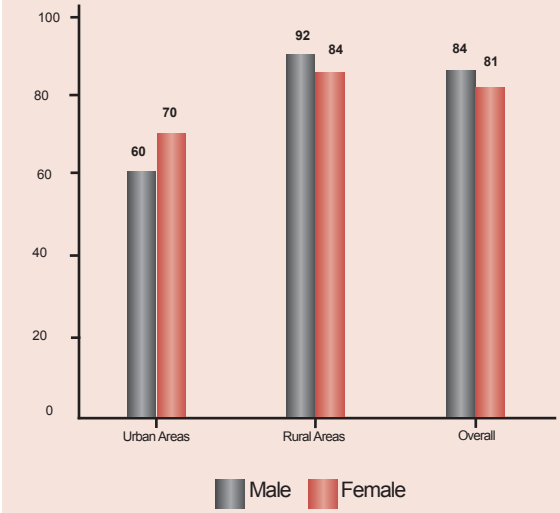
MARITAL STATUS OF WOMEN AND MEN AGED 15 YEARS AND ABOVE



FERTILITY RATE IN SPECIFIC AGE GROUPS (PER 1000 WOMEN)



INFANT MORTALITY RATE



Definitions:

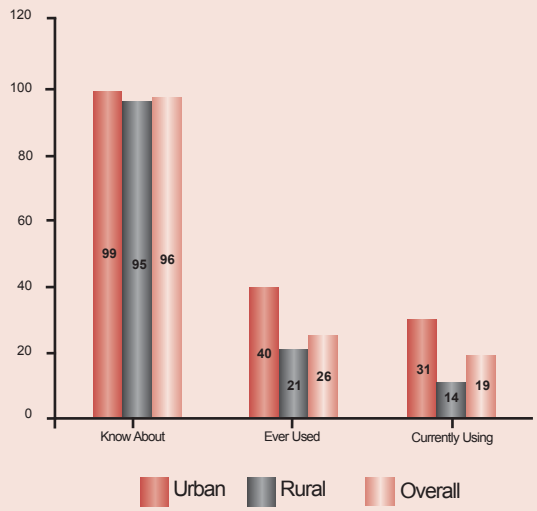
- *Crude Birth Rate:* The number of live births per thousand population in a year
- *Infant Mortality Rate:* The number of death of children under 1 year of age per 1000 live births per year

Sources:

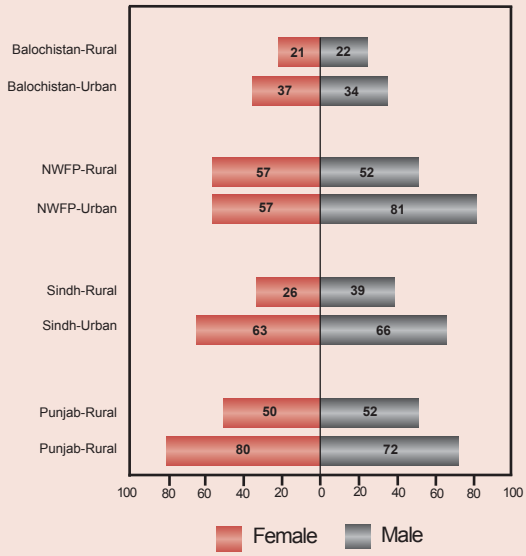
1. Pakistan Housing Census Report 1998
2. Pakistan Demography Survey 2001
3. Pakistan Integrated Household Survey (PIHS) 2002

SELECTED GENDER INDICATORS 2

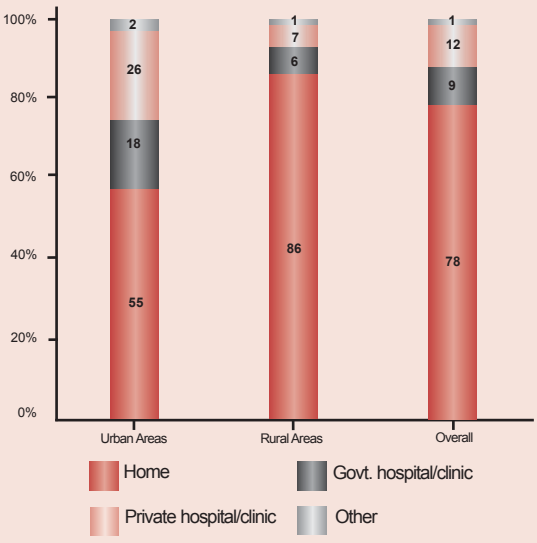
AWARENESS AND USE OF FAMILY PLANNING METHODS (PERCENTAGE), 2001-02



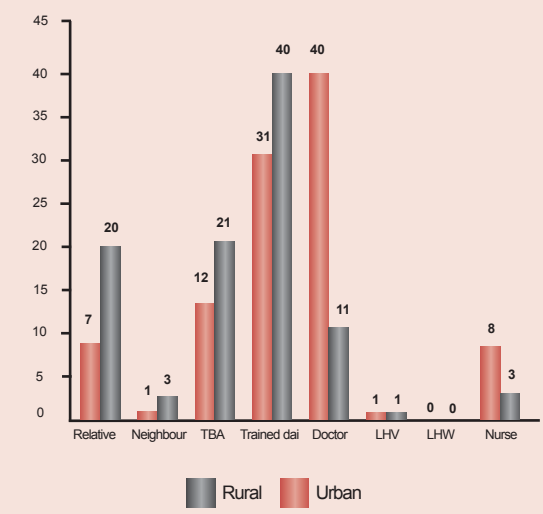
FULLY IMMUNIZED CHILDREN AGED 12-23 (RECALL AND RECORD), 2001-02



PLACE WHERE CHILD WAS DELIVERED (PERCENTAGE DISTRIBUTION), 2001-02



PERSON THAT ASSISTED WITH DELIVERY, 2001-02



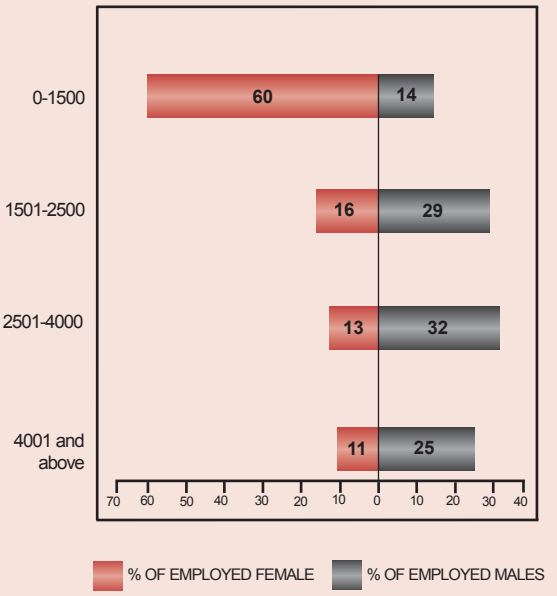
Definitions:

- *Fertility Rate:* The average number of children that would be born to a woman if she were live to the end of her childbearing age and bear children at each age in accordance with prevailing age-specific fertility rates
- *TBA:* Trained birth attendent
- *Trained dai:* Trained traditional birth attendent
- *LHV:* Lady health visitor
- *LHW:* Lady health worker

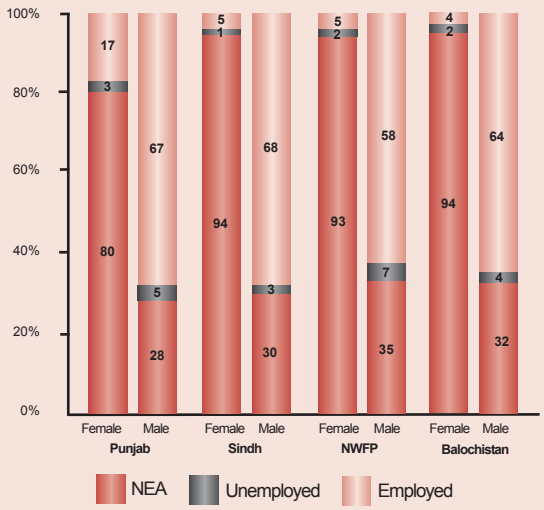
Source:
Pakistan Integrated Household Survey (PIHS) 2002.

SELECTED GENDER INDICATORS 3

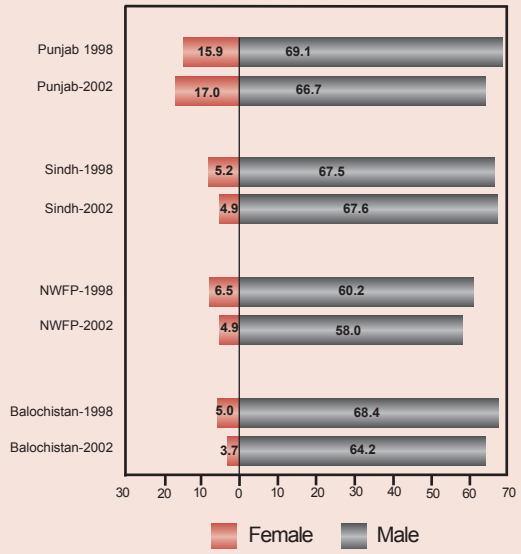
PERCENTAGE DISTRIBUTION OF WOMEN & MEN BY EARNING (IN Rs.), 2001-02



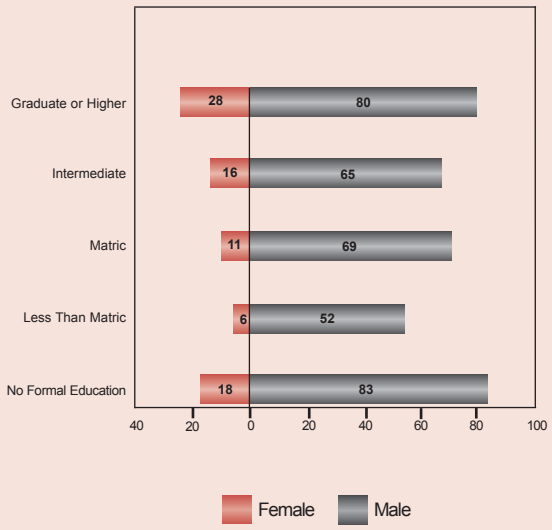
PERCENTAGE DISTRIBUTION OF WOMEN AND MEN BY EMPLOYEMENT STATUS*



PERCENTAGE OF EMPLOYED WOMEN AND MEN* 1997-98 AND 2001-02



PERCENTAGE OF EMPLOYED WOMEN AND MEN* 2001-02



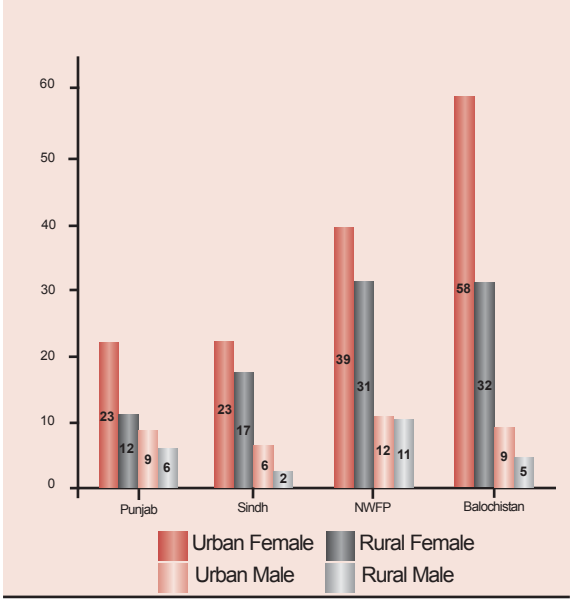
Note:
* Aged 10 years and older

Definition:
- *NEA:* Not Economically Active; Those who are neither employed nor unemployed

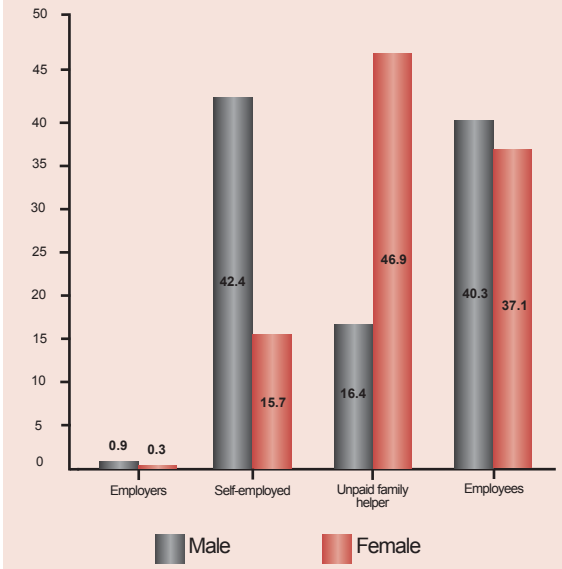
Source:
Labour Force Survey 2001-02

SELECTED GENDER INDICATORS 4

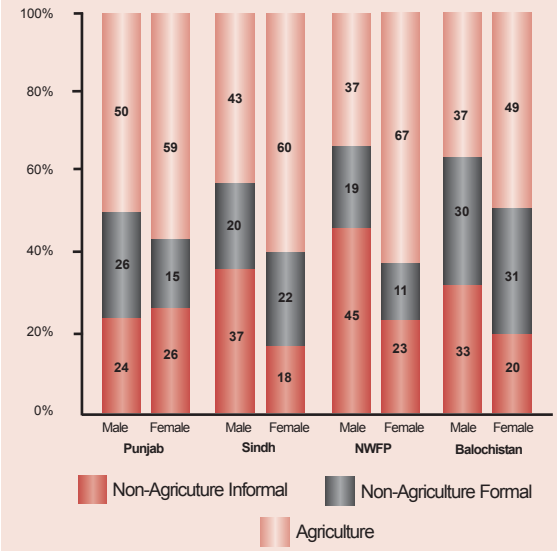
UNEMPLOYMENT RATE* BY SEX AND BY REGION 2001-02



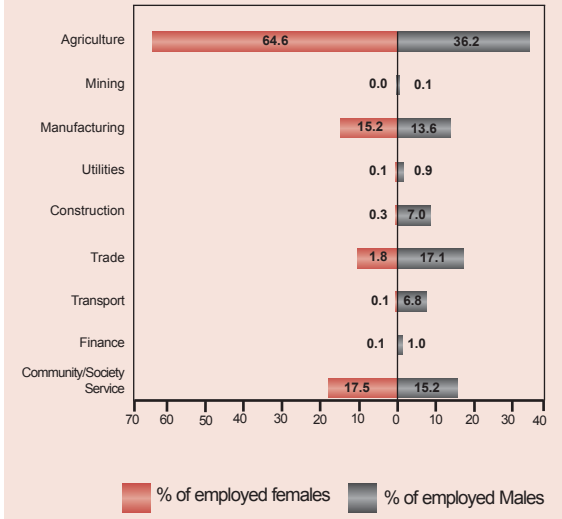
PERCENTAGE OF WOMEN AND MEN* ENGAGED IN VARIOUS ECONOMIC ACTIVITIES



PERCENTAGE OF EMPLOYED WOMEN AND MEN* 1997-98 AND 2001-02



PERCENTAGE DISTRIBUTION OF EMPLOYED WOMEN & MEN* BY INDUSTRY, 2001-02



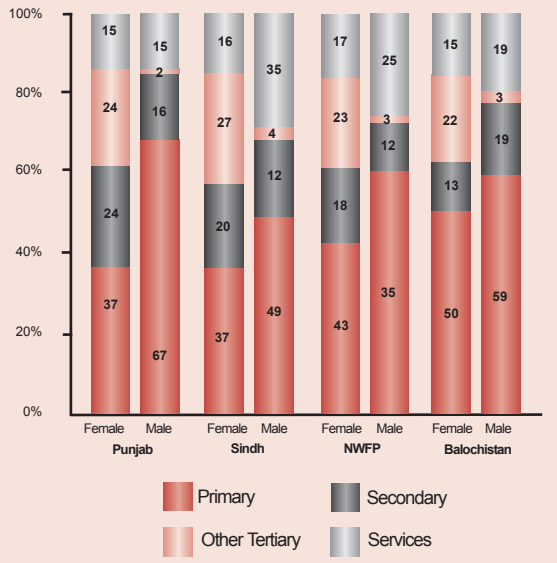
Note:
* Aged 10 years and older

Definition:
● *Unemployement Rate:* The number of unemployed person 10 years and above divided by total labour force

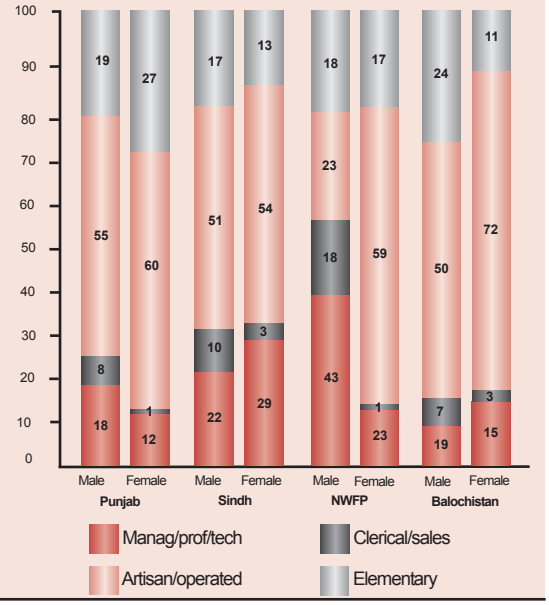
Source:
Labour Force Survey 2001-02

SELECTED GENDER INDICATORS 5

PERCENTAGE DISTRIBUTION OF EMPLOYED WOMEN AND MEN* BY INDUSTIAL SECTOR



PERCENTAGE DISTRIBUTION OF EMPLOYED WOMEN AND MEN* BY OCCUPATION, 2001-02



PERCENTAGE DISTRIBUTION OF EMPLOYED WOMEN & MEN* BY OCCUPATION, 2001-02

PERCENTAGE DISTRIBUTION OF WOMEN & MEN* IN THE NON-AGRICULTURE, 2001-02

Definitions:
- *Primary:* Includes both agriculture and mining
- *Secondary:* Includes manufacturing, utilities and construction.
- *Service:* Includes personal and community service
- *Other Tertiary:* Includes trade, transport and financial services.
- *Manag/prof/tech:* Includes managers, professionals, associate professionals and technicals
- Clerical and sales: Includes clerical, service and sales workers.
- Artisan and Operator: Includes skilled agriculture workers, craft workers and operators

Note:
* Aged 10 years and older

Source:
Labour Force Survey 2001-02

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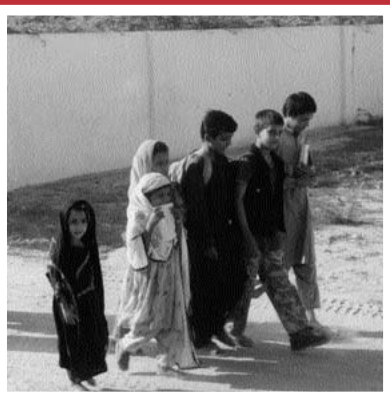

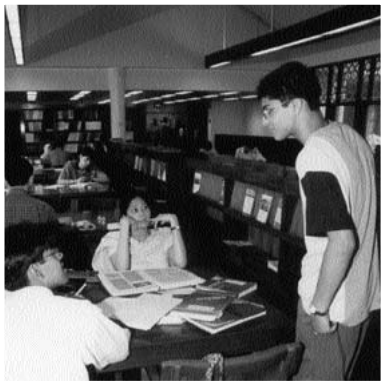

The state of education in Pakistan is far from satisfactory. There has however, been some recognition of this problem and efforts have been made to improve the educational profile. The discussion has, however, remained largely confined to the subjects of enrolment, particularly at the primary level, and resource allocations. While both these topics are important, there are other crucial underlying problems that have generally not found place in the debate on education. Several questions arise. How critical is the state of education in Pakistan? Where does Pakistan stand in relation to other countries in the region? How unequal is the distribution of educational opportunities? Is land inequality a barrier to education? Why is education important for economic growth and development? Where does Pakistan stand with respect to knowledge-based economies? How has macroeconomic policy impacted education? Which level of education has higher rates of return? What are the underlying problems with the primary education curriculum? How are examinations the bane of science education? How have the different streams of education created divergent worldviews?

The State of Education, SPDC's fifth annual review of Social Development in Pakistan, endeavors to answer all these questions. It attempts an in-depth examination and analysis of the global as well as sectoral aspects of education in Pakistan and identifies the necessary areas of intervention with a view to raising the human resource level of the country.

SPDC

Social Policy and Development Centre
15-Maqbool Co-operative Housing Society
Block 7 & 8, Karachi 75350, Pakistan
Tel: (92-21) 111-113-113
Fax: (92-21) 4534285
E-mail: spdc@cyber.net.pk
http://www.spdc-pak.com