

Shaping Education in Karnataka

Goals and Strategies

Government of Karnataka

Bangalore

February 2002

Preamble

The emerging knowledge-based economy, characterized by rapid technological changes and open and competitive economies, has placed education systems all over the world under tremendous pressure. Economic and social progress in the coming years will clearly depend on the quality of human resources—well-educated and healthy people capable of adapting to the knowledge and skill demands of the fast-changing economic scene. Though it is difficult to clearly envision the nature of things to come, education systems in most countries, developed as well as developing, are in a state of flux. The education system in Karnataka is also in the midst of this fluid situation, faced with rising expectations of the people on the one hand, and the pressures of an economy undergoing structural reforms on the other. The critical requirement at this point of time is to take a long-term view and initiate strategic measures, in both policy-making and operational spheres, in order to create an education system:

- that guarantees equitable access to high-quality education, formal and non-formal, that would equip the people of the State with the knowledge and skills necessary for economic growth as well as for living in harmony in a diverse, pluralistic society;
- that is based on a world-class curriculum offering global knowledge and enabling the State to compete in an international knowledge-based economy;
- that is strongly built on people's participation and institutional structures which are accountable to the stake-holders and are constantly adapting themselves to the evolving field reality; and
- that is organized through strategic partnership between public and private initiatives both for efficient management and for mobilizing adequate financial resources.

Transforming an established educational system, which is deeply entrenched in a hierarchical structure and largely aligned to existing social divisions, into an equitable, high-quality, flexible system is a stupendous challenge. However, Karnataka can meet this challenge effectively. Such optimism is not altogether unfounded. First, Karnataka has registered an impressive annual growth in GSDP of around 8 per cent, which is much higher than the performance of many other states. Karnataka has also emerged as one of the frontline states for attracting investment. Second, Karnataka has undergone a demographic transition during the last two decades, and the size of the age cohort entering the primary school has consistently declined since 1996. Third, the community at large as well as civil society organizations in the state have demonstrated tremendous enthusiasm to not only orchestrate supportive public opinion but also to share the financial burden through expanding private initiatives. Finally, the most important positive indicator is that the Government of Karnataka has already set up an Education Task Force and initiated a number of progressive measures to reform the system.

It is in this context that the present paper sets out a number of strategies cutting across different subsectors of the system with a view to assisting the Government in shaping the development of education in Karnataka into a vibrant movement contributing to overall social and economic progress. It is important that the state leadership breaks away from the typical “we-are-a-poor-state” syndrome and allocates much higher resources for educational development based on a long-term comprehensive vision. Mere allocation of additional funds will not be enough; however, they must be used wisely and to greater effect. It will need a combination of strong political will, committed leadership and mobilization of a wide range of human talent from within the society. We are confident that the State will rise to this challenge. The paper does not try to provide a complete set of recommendations because many necessary reforms have already been recognized by the Government. The paper highlights those aspects of the strategic reforms that need more thought and action to further deepen and sustain the reform process.

PREFACE

Government of Karnataka has identified Education as a sector critical to promoting growth and development of the state's human resources and thereby accelerating economic development cross-sectorally. The Government constituted a special Task Force on Education which has recommended several innovative policy initiatives directed towards improving school education. Since the State Government also intends to substantially increase investment in education through domestic as well as external financing, its next initiative was a sector report which would provide a comprehensive overview of the sector from pre-primary to tertiary education, viewing the educational process has a holistic process, grounded in social relations which shape the way it is accessed differentially on the basis of caste, class, gender and region. The sector report comprises 9 Sub Sector Studies, which provide a focussed, in-depth analysis of various sub-sectors, identify strengths and problem areas, set goals and suggest the strategic interventions required to achieve these objectives. The sub-sectors encompass various stages in the educational process, the principal providers of education services in the state, governance and equity issues.

The sub-sectors are:

- a. Early Childhood Development
- b. Elementary Education
- c. Secondary and Pre-University Education
- d. Collegiate Education
- e. Technical Education
- f. Teacher Education
- g. Equity in Education
- h. Role of Private Sector in Education
- i. Structure and Functions of Educational Management & Decentralisation

The present Strategy Paper in its draft form as developed by Dr. R Govinda, is a synthesis report based on these sub-sector studies. We are indebted to Dr. R Govinda who shouldered the responsibility of writing this paper in a short time.

We would like to acknowledge the contributions of:

Shri. S.M. Krishna, Chief Minister of Karnataka, who set the agenda for education and gave it primacy in the development strategies of the state;

Shri. H Vishwanath, Minister for Primary and Secondary Education and Dr. G Parameshwar, Minister of State for Higher Education and Medical Education who were always ready to provide guidance and advice during the preparation of the Report ;

Ms. Vatsala Watsa, former Principal Secretary (Higher Education) and Ms. Anita Kaul, former Secretary (Primary & Secondary Education) who designed and flagged off the entire exercise on behalf of the Government of Karnataka and were later ably supported by Shri R N Shastri, former Secretary (Primary and Secondary Education); the Chief Consultant of the sub-sector studies, Mrs. Lakshmi Krishnamurthy, Shri. T.M. Vijaya Bhaskar, Shri. K.P. Surendranath, Dr. M.R. Narayana, Prof. M.H. Dhanujaya, Prof. Ramesh Kanabargi, Dr. S.N. Prasad and Dr. A.S. Seetharamu for their incisive scholarship and painstaking research;

the members of the Review Committee, especially Prof. M.S. Lalithamma and Prof. C. Seshadri for their guidance;

Mr. Lukose Valltharai, Member-Secretary, who played a pivotal role in this undertaking, never lost sight of the objectives and always retained his sense of humour;

Mr. S.M. Shantharaju, Programme Officer, DPEP, who co-ordinated the entire process.

(MEERA SAKSENA)
Principal Secretary to the GoK
(Primary & Secondary Education)

(DR. MALATI DAS)
Principal Secretary to the GoK
(Higher Education)

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The strategy paper is the outcome of collective thinking and contributions of a number of people and the culmination of a number of empirical exercises carried out over a period of nearly two years. The paper essentially synthesizes the observations emerging from the various subsector studies and from a number of interactions with administrators in the Department of Education. The decision of Government of Karnataka to invest a substantial amount of funds to carry out studies by independent experts in the state is unique, demonstrating the government's eagerness to shape Karnataka Educational System in a professional manner. Let me, on behalf of all the 9 subsector study authors, express our appreciation and thanks for reposing faith in our professional capability and assigning this very important task.

On behalf of the Government of Karnataka, the exercise was steered by Dr. Malati Das, Principal Secretary, Higher and Technical Education in her capacity as the chairperson of the Review Committee on Sector Studies and Ms. Meera Saksena, Principal Secretary, Primary & Secondary Education. I am grateful to the Government of Karnataka and the Review Committee for giving me this opportunity to be actively associated with this exercise and to prepare the draft strategy paper.

Conduct of the subsector studies as well as the present strategy paper benefited enormously by the discussions held individually and in groups with a number of administrators and professionals in Karnataka. The outcomes of the subsector studies were discussed with Shri H. Vishwanath, Minister for Primary & Secondary Education and Dr. G. Parameshwar, Minister of State for Higher Education. Their insight into the dynamics of education development in the state has significantly influenced the preparation of this strategy paper. We are grateful to them for their advice and support to the exercise. Though they did not officially participate in the conduct of the studies, colleagues from the World Bank, Drs. Ward Heneveld, Sajitha Bashir, Prema Clarke and Vandana Sipahimalani, provided invaluable academic guidance and contributed to all the outcome of this task. The exercise required me to spend long periods of my professional time in Karnataka. I am thankful to Professor Khandelwal, Director of NIEPA, New Delhi for allowing me to spend a considerable amount of professional time in Karnataka and for his support in the completion of this task.

Several colleagues have helped me in preparing the present strategy paper. I am grateful to Dr. Padma Sarangapani, Ms. Maya Menon and Professor M.H. Dhananjaya who prepared the initial versions of the chapters on teacher education, secondary education and technical education, respectively. Active involvement in discussions and comments on the outline of the strategy paper given by Mr. T. M. Vijay Bhaskar, Commissioner of Public Instruction were very helpful in writing this paper. The anchor person for the whole exercise was Mr. Lukose Vallatharai, Member-Secretary, Sector Study who ensured that the exercise remained on track and completed it with a deep sense of commitment. Again on behalf of the Sub-Sector Study authors and myself I would like to express my thanks to him and his staff, particularly Mr. S. M. Shantaraju, Programme Officer for the excellent support and

cooperation. I am also grateful to Ms. Anjali Manglik and Ms. Anita Lukose for going through the manuscript and giving a final shape to the strategy paper.

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The present version of the draft strategy paper essentially embodies the perspectives held by scholars and professionals from Karnataka and may need not necessarily coincide with the positions currently held by the Government. That the Government of Karnataka has decided to present such a document for public debate and discussion is unprecedented. However, let me congratulate the Government of Karnataka for this bold and progressive step to present such a document for public debate and discussion which clearly demonstrates the commitment of the government to give to the children of the state an education system comparable to global standards of quality and for the ability to address the demands of the emerging knowledge based economy.

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CHAPTER – 1

The Context

Education is the passport to accelerated economic growth ...(it) is the key to building human capital and human capital is the vital ingredient in building a nation.

Mahboob ul Haq and Khadija Haq
Human Development in South Asia 1998

Education is the basis of all growth. The quality of human capital in the state, that is the physical and mental capabilities of the population, will determine its future progress. Education not only improves the faculties and skills of people; it also dramatically contributes to their physical well being ...

Human Development in Karnataka 1999

I. About the Strategy Paper

1.1 Karnataka is at a critical juncture in its social and economic development process. The state has recorded an impressive growth in GSDP of around 8 per cent per annum in recent years, which is much higher than the national average. The state is slightly above the national average even in terms of Human Development Indices. But more remains to be done. When the objective is not just economic growth but human development, the challenge is even greater, since strategies must be devised for providing good quality health and educational facilities for the poorest and most exploited groups as well as for reducing inequalities and raising real incomes.¹ Education directly influences the quality of labour which is the main asset for the nation. Thus it becomes the main means of improving their earning capacity and benefiting from economic growth. Second, in the liberal market framework, availability of a well-educated and skilled workforce is a critical requirement for the state to attract investment. Another factor which is directly related to the situation in Karnataka is that at present education accounts for 20% of the government's revenue expenditure which is the highest in comparison to all other sectors. Therefore, it is essential that the financial requirement of the sector is carefully examined in any planning process. Further, Karnataka government has recently initiated major reforms in public administration and the success of these reforms will depend critically on reforms in the education sector which accounts for the largest share of state government employees. It is in this context that Karnataka government has recognized education as a priority sector for promoting and sustaining social and economic progress in the state.

¹ *Human Development in Karnataka 1999*, Planning Department, government of Karnataka, Bangalore, 1999

1.2 Karnataka inherited an elitist-oriented education system from the colonial past, as most other parts of the country, characterized by uneven and highly inadequate spread of education facilities. During the last four decades, the state has witnessed a steady progress in rectifying the situation and moved towards an egalitarian system that reaches education to all sections of the society. Not unexpectedly, the priority has been to expand educational facilities to meet this requirement. One could easily say that Karnataka has achieved this goal of quantitative spread fairly successfully. The challenge today is to significantly improve the quality of the system and move towards the goal of excellence without jeopardizing the unfinished task of equitable development. There is an urgent need for expanding, restructuring and raising the quality of the education system both to support and to shape the future economic and social development of the state.

1.3 Recognizing the importance of education for attaining its goal of higher growth with equity, the Government of Karnataka has stated its mission for the education sector as “*To enable all children of the state to become good human beings, productive and socially responsible citizens and to achieve excellence.*” The government has constituted a Task Force on Education comprising senior education administrators and academicians. The Task Force has already submitted its Report on School Education advocating a wide range of reform measures to make the system vibrant and responsive to the changing socio-economic context as well as to meet the raising aspirations of the people in the era of liberalization and globalization. Several recommendations of the Task Force are already under implementation.

1.4 In addition, the Government of Karnataka has undertaken and completed a comprehensive review of all sub-sectors of education by independent experts consisting of studies on: (i) early childhood care and education, (ii) elementary education, (iii) secondary and pre-university education, (iv) teacher education, (v) collegiate education, (vi) technical education, (vii) private sector participation in education, (viii) management and decentralization, and (ix) equity in education. The findings of the sub-sector studies which were presented to a wider audience of academicians and education administrators in a three-day workshop held in May 2001 laid the basis for an informed analysis of problems facing the education sector in Karnataka. The present education strategy paper is essentially based on a synthesis of findings derived from these sub-sector studies. The paper also draws upon two studies on education carried out recently by the World Bank as part of its ongoing support to the State Government in its Economic Restructuring Programme.

1.5 The paper takes a holistic view of education in Karnataka and attempts to articulate expected goals and strategies for achieving a balanced development of education. Apart from delineating the strategies for different sub-sectors with particular focus on quality improvement and equity concerns, the paper also dwells on certain specific reforms to be adopted with respect to governance of education. The proposals for reform largely reinforce the recommendations of the Education Task Force and the functional review carried out as part of the recently issued Administrative Reforms Commission Report. It is envisaged that the strategies identified in the paper would assist the state government in making priority investment plans as part of the Medium Term Fiscal Plan strategy of the state.

II. Education System in Karnataka: A Short Profile

Structure of the Education System

2.1 School education in Karnataka comprises an elementary cycle of 7 years (4 years lower primary and 3 years upper primary) and a secondary cycle of 3 years. After 10 years of general school education, a student can enter employment or join the academic stream comprising 2 years of higher secondary education (called pre-university education in Karnataka) or pursue technical training in polytechnics and industrial training institutes (ITI), the latter being run by the Labour Department. Having successfully completed 12 years in the academic stream, students can join elementary teacher training certificate course (TCH) or go for general or professional (engineering/medical) higher education. Students can also join polytechnics after 12 years of school education. In non-technical higher education, individual colleges set entry criteria for admission within broad parameters decided by the University to which they are affiliated. For engineering and medical education, marks obtained in the higher secondary examination for science subjects determine the eligibility of students to appear for the “Common Entrance Test” administered by the state government. Allocation of students to individual colleges is based on performance on this test and the marks obtained in the pre-university examination.

Organization, Institutions and Enrolment

2.2 The education sector in Karnataka is administratively overseen by the Department of Elementary and Secondary Education (which deals with elementary, secondary, pre-university and adult education) and the Department of Higher and Technical Education (collegiate education and technical education). There are also two Ministers for Education, for School and for Higher Education respectively. The Office of the Commissioner of Public Instruction (CPI) dealing with elementary and secondary stages, the Directorate of Pre-University Education which oversees the functioning of the higher secondary stage, and the Directorate of Vocational Education work under the overall guidance of the Department of Elementary and Secondary Education in the Secretariat. The responsibilities of each of these wings include direct management of the government institutions as well as regulation of the private institutions within the respective sub-sectors. In the case of private aided institutions, this includes granting sanction for teachers’ posts in line with the “Grant-in-Aid Code” and payment of teachers’ salaries; in the case of unaided institutions, the main role of the government is to ensure that these institutions satisfy the minimum eligibility criteria for granting “recognition”, a status that enables these institutions to allow their students to appear for public examinations.

Education Scenario in Karnataka 1999-2000

	Institutions	Teachers	Students
Lower Primary Schools	22,533	126,823	5,274,383
Higher Primary Schools	27,107	101,670	2,948,688
High Schools	8,255	78,888	1,689,632
Pre-University Colleges	2,083	15,729	510,000
Degree Colleges	935	20,089	418,473
Polytechnics	185	3,891	51,278
Engineering Colleges	82	3,944	73,221

Table 1.1

Notes: For LPS and HPS, number of teachers and students refer to lower primary and upper primary classes. For higher education, figures are for year 1998/99; source: report of the Dept. of Collegiate Education. For technical education, figures of teachers and students are for year 1998/99; source: report of Dept. of Technical Education. The number of institutions is from the GOK sub-sector study on Technical Education. For PUC, figures for teachers and enrolment are from report of Directorate of Pre-University Education; the number of institutions is from the GOK sub- sector study on Secondary and PU education. Figures include government, aided and unaided institutions.

Regional Variations

2.3 Educational development in the state has been profoundly influenced by the legacy of the past. Karnataka state was formed by the merger of nine Kannada-speaking areas bordering the princely state of Mysore that were part of the Bombay Presidency, the Madras Presidency, and the princely states of Hyderabad and Coorg. These areas were at strikingly different levels of economic, social and educational development in 1956. The Mysore princely state comprising the present districts of Bangalore, Tumkur, Hassan, Shimoga, Mysore, Kolar, Mandya and Chikmangalur were more advanced in the provision of educational and health facilities, as well as infrastructure (power and roads) that permitted the growth of manufacturing. In 1955-56, the enrolment of 6-11 year olds in the Mysore princely state, Bombay-Karnataka, Madras-Karnataka and Kodagu-Karnataka was between 75-85 percent compared to 27 percent in Hyderabad-Karnataka. In 1991, the latter areas comprising the three districts of Gulbarga division (Raichur, Gulbarga and Bidar) had literacy rates varying between 38-45 percent, female literacy rates that were well below the national average (as low as 26 percent in Raichur); the net enrolment ratio in 1996-97 for 6-14 year olds was 56-80, much less than what had been achieved in the more advanced regions 40 years earlier. The Hyderabad-Karnataka region also has the greatest proportion of Scheduled Caste (SC) population in the state. For the State as a whole, 16.4 per cent of the population are SC (and 4.3 percent are ST), but in Raichur, Gulbarga and Bidar the percentage share of SC is 17.2, 23.7 and 20.7 respectively (ST population percentages are 7.8, 4.1 and 8.3, respectively). Social practices such as child marriage abound in these regions compounding the problem of full educational participation of girls.

Changing Demographic Profile

2.4 Karnataka has undergone a demographic transition during the last two decades which is reflected in a rapid decline in the total fertility rate since the late 1980s. Between the two rounds of the National Family Health Survey, the total fertility rate (TFR) declined from 2.85 children to 2.13, or just above population replacement levels. Again State averages a wide range in fertility from below replacement levels in Mandya district to above 3 in the Gulbarga region. For the state as a whole, the child population is projected to decline in the next decade, although some districts will continue to have a growing age cohort.

Private Sector in Education

2.5 A significant feature of Karnataka's education system is the presence of a large private sector especially at the secondary stage and beyond. The private sector consists of those institutions that receive government aid for teachers' salaries and those that do not. Government stopped giving grants-in-aid to institutions established after 1987. However, private unaided schools have increased quite rapidly in the 1990s. In lower primary, upper primary and secondary stages, about 21 percent, 28 percent and 68 percent, respectively, of students are in private institutions. Of this, nearly two-thirds of the private school enrolment at the lower stage, half at the upper primary stage and one-third at the secondary stage are in unaided schools. At the higher secondary (PUC) level, the enrolment share in aided institutions is about 55 percent and 16 percent in unaided institutions.

Private Sector in Education

		Government	Aided	Unaided	Total	Total Number
Lower Primary Schools	Institution	92.5	1.2	6.4	100.0	22,342
	Students	78.5	8.3	13.2	100.0	4,589,873
	Teachers	78.6	5.9	15.5	100.0	126,823
Higher Primary Schools	Institution	79.0	8.2	12.8	100.0	26,374
	Students	71.8	13.5	14.7	100.0	3,500,161
	Teachers	72.2	11.5	16.3	100.0	101,670
High Schools	Institution	31.5	32.7	35.8	100.0	8,255
	Students	32.3	46.3	21.4	100.0	1,699,236
	Teachers	35.2	37.4	27.4	100.0	70,220
Pre-University Colleges (1999-2000)	Institution	37.2	29.1	33.7	100.0	2,083
	Students	N.A.	N.A.	N.A.	100.00	510,000
	Teachers	35.1	39.0	25.9	100.0	15,729
General Degree Colleges	Institution	16.2	32.0	51.8	100.0	935
	Students	16.2	68.5	15.3	100.0	418,273
	Teachers	12.4	39.1	48.5	100.0	20,089

Table 1.2

Source: GOK District-wise statistics of Schools, year 1998/99

Source: For Degree Colleges-Department of Collegiate Education, GOK 1998/99

Source: For PUC- Department of Pre-university education, GOK 1999-2000

2.6 In spite of the recent expansion, private schooling in Karnataka is largely an urban phenomenon. In 1993/94 (6th AIES), over half the enrolment in classes 1-5 in urban areas was in private schools, divided almost equally between aided and unaided institutions. By contrast, 92 percent of enrolment in rural areas is in government schools. The proportions were similar at the upper primary level, although aided schools accounted for 8 percent of enrolment even in rural areas. At the secondary stage, the private aided sector is significant in both rural and urban areas, whereas the unaided schools are more prevalent in urban areas.

2.7 On the whole, Karnataka has made significant strides in the quantitative provision of education facilities and in terms of enrolment, especially in school education. Nevertheless, there are a number of problems that still need to be addressed and a number of new challenges that have gained importance as the system approaches universal coverage at the lower levels. The main issues to be addressed across different levels and aspects of the education system are:

1. ensuring that all children enter primary school and complete the first cycle of 8 years schooling;
2. expanding and restructuring secondary and higher secondary education to respond to the changing aspirations of the learners and the evolving economic scene;
3. developing a concerted strategy for balanced development of tertiary education – general and technical – with a long-term perspective in view;
4. improving the quality of teacher preparation and organizing professional development programmes for teachers at various levels;
5. addressing concerns for equity in the distribution of educational facilities and their quality by correcting regional imbalances, gender disparities and educational backwardness among the marginalized groups; and
6. redesigning educational governance in order to make it responsive to the emerging demands of decentralization, professionalism and accountability with particular focus on institutional functioning.

2.8 At present, around 95 percent of the expenditure on school education by the State Government goes towards meeting the salaries, leaving very little for further development of the system. The main casualty of this situation is the quality of education. Most of the educational institutions function with bare minimum in terms of physical infrastructure and practically no academic materials worth the name. This applies to schools as well as most of the colleges. Therefore, one of the overarching issues to be addressed is the question of enhanced allocations for quality improvement of the education system at all levels.

CHAPTER 2

Pre-school and Elementary Education

I. Overview

1.1 The elementary education system in the state has expanded multifold during the last few decades. There are currently 22,533 lower primary schools and 27,107 higher primary schools in the state. As a result of this expansion of upper primary schooling facilities, the ratio of primary to upper primary sections is about 2.2:1, which is better than the situation in most other states. Equally impressive has been the programme of classroom construction in elementary schools, which has increased the number of classrooms by about 20,000 in the last six years. About 3,500 new classrooms have been taken up for construction each year (although not all were completed within the same year). Currently there are over 169,000 classrooms for elementary classes. It is estimated that an additional 25,000 classrooms are required, most of them for upper primary classes. Of this, as a follow up of the recommendations of the Education Task force, Government has recently sanctioned the construction of 10,000 more classrooms in primary schools. However, water and sanitation facilities are still lacking in many schools. Less than one-fifth of primary schools have a girl's toilet and only about two-thirds have any kind of drinking water facility. Where toilet facilities exist, lack of water and irregular cleaning impedes their use. Further, the number of pre-schools is very small; even these are essentially private schools located in urban areas.

1.2 At the elementary level, enrolment increased at 2.2 percent per year in the last decade, but this average growth rate masks enormous differences in growth at the lower and upper primary levels. In classes 1-4, enrolment growth was merely 1.0 percent, and in fact, gross enrolment in the lower primary sections has declined in absolute terms since it peaked in 1995-96 at 5.64 million. Currently, about 5.48 million children are enrolled in these classes. By contrast, enrolment in classes 5-7 grew at 4.8 percent annually and currently stands at 3.17 million. Yet, annual increase over the decade has been only to the tune of about 1,50,000-2,00,000 pupils.

1.3 These trends largely reflect the decline in the cohort of children eligible to enter school (5-6 year olds) due to fertility decline, which outweighs the increases in enrolment due to higher entry and retention rates at the primary level. The higher rate of growth at upper primary levels reflects the higher rates of transition from primary to upper primary, the larger cohorts of children in the lower primary stage in the early nineties who moved to upper primary in the latter half of the decade and the substantial increase in retention capacity at this stage that has occurred in the nineties.

1.4 Another significant achievement of the nineties has been the increase in participation and completion rates at the primary levels. The National Family Health Survey of 1998-99 (NFHS-2) shows that 86 percent of 6-10 year olds attended school compared to 76 percent six years previously; 72 percent of 11-14 year olds were in school compared to 63 percent in the previous round.² Thus, for the 6-14 year age group, there was an increase in enrolment rate of ten percent in just over half a decade. For rural females, increase in attendance rates

² Sajitha Bashir, *Karnataka – Expanding and strengthening the education sector in the context of economic restructuring: financing requirements*, Draft Report, World Bank, New Delhi, August 2001.

has been even more dramatic which is 17 percent for the 6-14 year age group. Data from the National Sample Survey in 1995/96 for various age groups are also given in the table.³

Current Attendance in School
(percent of age group)

Age Group (years)	NFHS-1	NFHS-2	Age Group (years)	National Sample Survey
	1992/93	1998/99		1995/96
			3-5	21.3
6-10	75.6	86.4	6-9	79.1
11-14	62.9	71.6	10-12	70.7
15-17	n.a.	44.9	13-15	57.0
			16-17	44.1
6-14	70.5	79.9	6-14	74.4

Table 2.1

1.5 The rapid progress in the nineties can also be gauged by the rise in literacy levels and school completion rates. NFHS data show that illiteracy rates for the youngest age group (6-9 years) dropped by 16 percent in six years to about 10 percent; for rural females, the illiteracy level dropped by almost 20 points to 22 per cent. This indicates that most children entered school and continued at least a few years of education. About 65 percent of the 10-14 year age group had completed at least primary level education in 1998/99, compared to only 48 percent six years earlier. The completion rate among rural females for the same age group rose by 20 percent. Significant, though less dramatic, progress has also been made in the completion rate of upper primary schooling.

1.6 Although household level data are not available for more recent years, data collected by the Education Department in the most recent Child Census (2001) indicate that the above trends in participation and completion have been sustained and may even have accelerated, especially at the lower primary stage. Out of a total population of 4,777,405 children in the 6-9 year age group, approximately 385,500 or 8.1 percent are currently not attending school. In the 10-13 year age group comprising a total population of 4,701,766 children, 689,600 are not in school. Hence, two-thirds of the children in the 6-14 year age group who are not in school belong to the older age group, and most of the latter category comprises 13 year olds who cannot continue to class VIII which is currently part of the secondary cycle.

³ NSS data have been classified by the age groups that are more relevant to the education cycles in the state. The age group 6-9 years (both years inclusive) corresponds to ages of children who should be attending the lower primary cycle (I to IV in Karnataka), if all children entered school at the age of 6 and progressed without any repetition.

Estimated Proportion of Children Attaining Different Classes
(2000 – 2001)

	as percentage of those who enter class 1
enter class 1	100
reach class 4	89
reach class 5	85
reach class 7	65
reach class 8	43
reach class 10	33
pass class 10	25
enter PUC	16
pass PUC	12
enter higher education	10

Table 2.2

1.7 Nine-tenths of those who enrol in class 1 reach class 4. The dropout rate between classes within the lower primary stage has been reduced to less than 5 per cent. This is corroborated by both state-level data and data from the districts in which the District Primary Education Programme is operational. Transition between the lower primary and upper primary stage is quite high: approximately 85 percent of children who had enrolled in class 1 continue through to class 5. The dropout rate between class 1 and 5 is therefore about 15 percent. It appears that the availability of higher primary schools locally facilitates the transition to class 5 and that there is strong demand for upper primary education. Currently, the highest levels of dropout are at the upper primary stage and between classes 7 and 8.

1.8 The high level of dropout within the upper primary stage deserves special attention. So far, quality improvement efforts (teacher training, textbooks, curriculum, and improvement of school infrastructure) have been focused on the lower primary stage to the virtual neglect of upper primary level. An important social reason leading to high dropout rates in northern Karnataka is the practice of child marriages and girls being taken out of school with the onset of puberty.

II. Goals and Objectives

2.1 Within the federal framework of the Indian constitution, Karnataka Government is committed to giving free and compulsory education to all children till the age of fourteen years. Karnataka also promulgated a Compulsory Education Act, several decades ago, which underscores this obligation to provide basic education for all children of the state. Keeping these commitments in view, the Government has clearly articulated its vision statement as “to ensure that all children of Karnataka between six and fourteen years of age complete at least eight years of quality, relevant, free and compulsory elementary education by 2007.” It may be noted that the target set by the State Government is three years ahead of the 2010 deadline set at the national level by Government of India under its flagship programme of *Sarva Shiksha Abhiyan*. The vision statement is further elaborated in terms of several outcome and instrumental goals to be achieved, namely:

- to ensure that all 6-13 year old children are in classes 1-8 by 2007.
- to ensure that all required infrastructure and human resources for providing eight years of free, compulsory, relevant and quality education are in place by 2007
- to ensure that education becomes a means of genuine empowerment of the individual to achieve his/her full potential by 2007
- to ensure that the learning process is made locally relevant, child-centred, activity-based and joyful by 2007
- to ensure that educational management is decentralized to the community and that the community takes ownership to ensure children's right to education by 2007.

2.2 Such a specific statement of mission goals within a time-frame and instrumentalities has been followed in recent years by a number of concrete actions by the government.

Issues and Strategies

2.3 The state witnessed unprecedented levels of activity in primary education during the last decade. Through these efforts, coupled with several long-standing practices of the state with respect to establishment of schools, Karnataka is in a relatively comfortable position in terms of providing access to primary education for all children. In fact, the state perhaps has the most widespread network of primary schools as compared to other states in the country. During the last few years, Government of Karnataka has initiated a number of innovative programmes to improve the efficiency and effectiveness of the elementary schools. The government operates a number of incentive schemes, particularly focused on marginalized groups, for example, all children in the government schools receive free textbooks. A successful experiment for improving the quality of teaching-learning process called "Nali Kali" designed and adopted by local teachers in HD Kote Taluk is now being extended to several other parts of the state. The state is also implementing a number of innovative efforts through the centrally sponsored District Primary Education Programme in selected districts.

2.4 In spite of these efforts, a sizeable number, though a relatively small percentage of the age group, remain unenrolled in schools. Also, retaining the children who get enrolled and ensuring that they acquire basic knowledge and skills officially prescribed for them have not been easy. In short, Karnataka is very close to achieving universal primary enrolment and completion. It still has to cover a significant gap in participation and completion especially at the upper primary stage. In fact, those who do not yet complete elementary schooling are mainly poor rural children and girls.⁴ It is necessary at the present juncture to identify such critical issues and design appropriate strategies for time-bound action. Some of these crucial issues are discussed along with the strategies which could be adopted to tackle them.

Need for a Clearly Articulated Policy on Providing Pre-school Education

2.5 It is now well recognized that pre-school education will not only have positive-influence on the participation of children in primary education but also significantly impact on their cognitive and emotional development. It is universally acknowledged through systematic research that exposure to early childhood education constitutes the first critical step in the total learning process and contributes very significantly to the successful completion of

⁴ Sajitha Bashir, op cit.

elementary education. The Global Framework for Education for All⁵ (EFA) for which India is a signatory, emphasizes that “expanding and improving comprehensive early childhood care and education, especially for the most vulnerable and disadvantaged children” is the first goal of EFA. Are all children in Karnataka able to access pre-school education facilities? What is the position of the state government with respect to provision of pre-school education?

2.6 Pre-school education in Karnataka, as in almost all states in India, is extremely limited in its outreach and is almost entirely in the private sector. The main vehicle for publicly provided pre-school education is the Integrated Child Development Services (ICDS) programme administered by the Department of Women and Child Development but, despite a very large geographical outreach in the state, its coverage of the 3-6 year old age group is far from being universal. Further, the pre-school component of ICDS is reportedly its weakest. Apart from the ICDS which services poor children, private nurseries, mainly in urban areas cater to the middle and upper income groups. However, this is a largely unregulated sector and there is little quantitative information on the growth of private pre-school education.

2.7 Though the state government in principle endorses the importance of providing pre-school education, there is no document which clearly articulates the policy of the State government in this regard. It is assumed that the ICDS centre (AWC) would cater to the pre-school education needs of the community where it is located and therefore universal provision of AWC would suffice. This assumption needs careful examination. The criteria for siting AWCs is that there be one AWC per 1000 population and in tribal areas one AWC for 700 population. On this basis, though at the macro-level there is universalization, at the ground level there are a large number of smaller villages and many more habitations, which are not catered to by AWCs, because they do not meet the criterion of population size. Young children cannot negotiate the distance to AWCs outside their villages. So, these children, almost certainly from the poorer and the SC/ST sections of the population, have little or no access to early childhood education and socialization process provided by the AWC prior to primary schooling.⁶

2.8 It is urgent that the state government formulates a clearly defined policy on pre-school education in the state, drawing the contours, contents and nature of education to be provided for children in the age group 4-5. The fear that formulating a policy for this subsector would bind the government to providing facilities and thereby unduly burden the state exchequer is unwarranted. Such a policy is needed not only for guiding government initiatives in the area but also for promoting and monitoring the activities and inputs offered by private providers of pre-school education. As for the role of the government as a provider of pre-school education, it may be useful to view the issue from both a short-term and a long-term perspective. In the short term, the government may not create additional structures in the existing primary schools for pre-school education. Instead we could continue to strengthen the pre-school education component in the AWCs, with the conscious recognition that this is not likely to lead to universal provision of pre-school education. In fact, the government has already initiated such measures on a pilot basis. However, in the long-term, it is desirable to create a pre-school component attached to all the existing primary schools. The financial implications of adding two years to primary schools on a universal basis would need to be assessed and

⁵ *Education for All: Framework of Action*, Global Conference on Education, Dakar, UNESCO, 2000.

⁶ Lakshmi Krishnamurthy, Vani Periodi and Asha Nambisan, *Early childhood Development Programmes in Karnataka*, Department of Education, Government of Karnataka, Bangalore, 2001.

the possibility of mobilizing additional resources from sources other than the state government need to be explored. The continuously decreasing demographic pressure on primary school enrolment is a favourable factor that contributes to some optimism about the financial demands of such a provision. It could be done in a phased manner. To begin with, say during the next 4-5 years, the policy could be to encourage local community groups, panchayati raj bodies, NGOs and private providers to establish pre-school sections in the existing primary schools. Government may, in this phase, limit its direct intervention to financial subventions only in identified backward pockets and small villages where there are no AWCs. In the longer term, this would help in two ways. On the one hand, it will help unburden the AWCs, which are already overstretched with many responsibilities, to focus on nutritional support and other development needs of the 0-3 age group children, and gradually streamline pre-school education as a community-based activity not dependent wholly on government resources. It should not be difficult to integrate the nutritional component of the ICDS for 4-5 age group with the mid-day meal programme operating on a universal basis in primary schools.

Overcoming Regional Disparities: Need for more Target-Focused Strategies

2.9 Regional disparities are still sizeable and perpetuate historical inequalities. The districts of the Hyderabad - Karnataka region are still lagging behind other regions in the proportion of children completing even four years of schooling. In Raichur and Gulbarga, only two-thirds of class 1 children complete primary education (DPEP data). The Child Census revealed that one-quarter of children (6-14 years) in these two districts were out of school compared to less than 1 percent in the southern districts. About 60 percent of the out-of-school children were from seven districts: five districts of Hyderabad-Karnataka and two from the Bombay-Karnataka region (Bijapur and Bagalkote). It may not be an exaggeration to say that Karnataka's success in ensuring full enrolment and completion at the elementary level will depend to a large extent on educational progress in these seven districts.

2.10 The relative backwardness of these districts is not a new finding. As the Human Development Report (1999) points out, large gaps existed between education development in these districts and the rest of the state when they were incorporated into Karnataka, and they have remained unbridged. In fact, nearly seven years ago they were selected for special input provision under the District Primary Education Programme essentially for this reason. While the special inputs under DPEP may have arrested further decline, the situation continues to be serious. It is important that special component plans are prepared to deal with the situation in these backward districts. In fact, Karnataka Government has already identified the region for special and priority treatment. The recent decision of the government to establish a separate Directorate to oversee the implementation of education development programmes in the seven districts of the northeastern part of the state is a very positive step.

2.11 However, the experience from DPEP indicates that the routine approach adopted for dealing with education problems may not do. Special strategies designed for the districts have to recognize that children who do not yet enter primary schools or drop out without completing even four years of schooling comprise mainly the hard to reach people like nomads, migrants from other states and tribal communities and those belonging to extremely poor households. A prerequisite is to exactly physically locate the children who are not in school. General social mobilization practices may not be adequate. A more detailed profile of these children is required in order to devise appropriate strategies to reach them. *This could*

be done through a systematic process of family-wise child tracking over a period of five years. Data records in the form of village education registers may be maintained to track children from age 3-4 and ensure that all of them enter primary school and do not drop out midway. Such a targeted approach is essential if the stated goal of “ensuring that all 6-13 year old children are in class 1-8 by 2007” is to become a reality. Further, it should be noted that enrolling and retaining these children who have hitherto remained outside the purview of schooling cannot be done through standard bureaucratic action. Formulating localized strategies actively involving the community members is critical. In this also, the recent actions of the Government to set up School Monitoring and Development Committee consisting of local representatives should be of great value. Another issue that needs to be tackled seriously is the education of a large number of out-of-school children most of whom are in the backward districts. The state government has initiated a special programme called “Chinnara Angala”. Bridge courses are being organized to ensure the re-entry of children into mainstream schools.

Improving Quality: The Topmost Priority

2.12 The most challenging dimension of ensuring universal completion of elementary education is to focus on learning and quality. The District Primary Education Programme, currently in operation in 16 districts of the state, has introduced important innovations in curriculum reform, textbook revision and teacher training thus moving towards a more child-centred, activity-oriented pedagogy. Despite these innovations, recent achievement surveys show that learning levels are still low. The sub-sector study on elementary education has articulated the expectations after seven years of schooling, as well as the school and classroom processes and the materials that would be required to fulfill those expectations. This exercise has been undertaken in a participatory manner involving local communities through the “Samudayadatta Shale” programme (community contact programme) and with the involvement of several District Institutes of Education and Training. The implication of this new vision for elementary education, for new strategies and programmes, needs to be worked out in greater detail.

2.13 Several issues need careful analysis and follow up action with respect to quality improvement in elementary schools. Many of the measures implemented for quality improvement in the form of additional inputs and teacher training are designed in a generic fashion for all schools. This observation is largely applicable to initiatives taken under DPEP also. Instead, it is important to design initiatives which specifically target individual institutions and collaborative action at local levels. In fact, the relevance of such an approach is well demonstrated by the *Nali Kali* programme successfully adopted in H.D.Kote Taluka. Each school has to be made the locus for planned development action both for ensuring full participation of children and for their effective learning.

2.14 The sub-sector study highlights the problem of multi-grade teaching and points to the need for evolving appropriate strategies in multi-grade situations that exist in the majority of primary sections in order to improve learning outcomes at the elementary level.⁷ Though multi-grade teaching is more common than single-grade teaching, this issue is treated as a special case with minor attention in the primary teacher training programmes. It is necessary

⁷ About 95 percent of LPS have multigrade teaching in class 1-4. Among HPS, 84 percent have multigrade teaching in class 1-6 and 45 percent in classes 1-7.

to recognize that multi-grade teaching is inevitable with a policy of establishing schools in very small villages and habitations where provision of single-grade teaching is unviable. But improving the effectiveness of multi-grade teaching classes does not merely involve training teachers. This has to be coupled with compensatory provision of specially designed academic resources for the multi-grade classes.

2.15 The most important component defining the quality of education is the teacher. Recent empirical studies have indicated that primary school teachers carry substantial deficiencies with respect to their own proficiency of the primary school curriculum. Considering the seriousness of the matter, the government has recently decided to recruit teachers based on competitive test. This should help improve the situation, but only marginally, as the real problem lies in the poor quality of secondary and collegiate education imparted to the prospective teachers. Improving the quality of education at these levels will be the long-term solution. However, as an immediate measure, the Government has to launch a systematic programme of 'subject knowledge improvement' for all teachers of primary schools. Two factors have to be borne in mind. Firstly, the traditional supply-based approach of centrally determining a calendar of programmes and compelling teachers to participate irrespective of their needs and interests has to be given up. This should be replaced by a self-selection mode where teachers voluntarily register themselves for courses. In order to ensure that all would participate, the Government could link participation in such in-service programmes to career advancement including increments in salary. Secondly, such programmes cannot always be conducted in a centralized fashion at block and district levels. Instead the training inputs should be made available to teachers at their place of work. This could be done with the help of modern ICT tools, and in particular, through the use of distance education and open learning mechanisms.

2.16 Another critical requirement for quality improvement is the mechanism in place for monitoring the functioning of schools. It is well known that the present system of school supervision by a cadre of inspectors from within the Department has not functioned effectively. But this has been the experience of many countries across the world. The solution may lie in creating an independent mechanism for monitoring quality of functioning of the schools. Role of Block Resource Centres and Cluster Resource Centres as support and training institutions should not be confused with independent quality monitoring. Also assessment of school quality should be anchored in a comprehensive development plan prepared by every school involving all the grassroot-level stakeholders. Such a recommendation has already been made by the Education Task Force. It is time that some operational measures are initiated to implement the recommendation. More details on the possible organizational arrangement for such a system of monitoring are discussed in the section on Educational Governance.

Increased Focus on Upper Primary Classes

2.17 From quantitative as well as qualitative considerations, the upper primary stage needs more focused attention⁸. As already pointed out, dropout rates are as high as 35% in the upper primary classes. As subject diversification is introduced at this stage, the current approach of appointing generalist teachers with only higher secondary qualifications poses a serious challenge. A third language (usually Hindi) is introduced at this stage, and often,

⁸ World Bank (2001) *Expanding and Improving Upper Primary Education in India* Report No. 20347.

teachers are not equipped to teach it. There is currently no system of teacher support at the upper primary stage below the district level as even in the DPEP districts, the BRCs and CRCs have only focused on lower primary classes. The recommendation of the Task Force to appoint graduate teachers needs careful consideration. But this would rectify the situation only in the long term. Alternate actions are needed immediately to upgrade the capabilities of teachers in their subject knowledge and pedagogic skills of transacting the subject-specific curriculum. The proposed addition of class 8 to the upper primary cycle makes this even more urgent in order not to adversely affect the quality.

2.18 Inadequate classrooms and physical infrastructure leads to over crowding and affects the organization of meaningful learning activities. There is already a shortfall of about 25,000 classrooms. The norm for HPS is a minimum of 4 teachers and rooms (covering 7 classes) and this is probably inadequate. It may be better to specify the norms for the upper primary stage so as to meet the specific curricular requirements of this stage. Though the pressure of new admissions may reduce in the lower primary classes, schooling infrastructure at the UPS stage will come under greater pressure with improved enrolment and retention. However, it is also important to note that many upper primary schools are too small to be viable for maintaining good quality infrastructure and academic resources. This calls for consolidation of schools in order to make them viable based on a detailed school-mapping exercise.

2.19 There is no reliable information on the learning levels of children at the end of the upper primary stage. A district-level common examination is conducted at the end of class 7, but the examination is not considered reliable. About 90 percent of children pass and the sub-sector study reports the discrepancy between this performance and the achievement levels indicated by DPEP surveys at the end of class 4. The sub-sector study on management also reports that in some sample secondary schools, no student had passed the class 10 state-level Board examination, although all of them had received 80 percent on the class 7 (district-based) examination. The core issue to be addressed is not of the end-of-cycle examination. Low reliability of the district level examination is symptomatic of poor in-school formative evaluation of learners supposed to be conducted on a regular basis by the teachers. A major effort has to be made to improve the quality and reliability of examinations through appropriate training of district functionaries and teachers. Teachers also need systematic training in classroom evaluation.

2.20 As already mentioned, the curriculum at the upper primary stage becomes subject specific. This demands teachers with appropriate academic and pedagogic skills to transact the curriculum. But it has been observed that often teachers who have not studied science and mathematics at the higher secondary level are required to teach these subjects. This is an issue demanding immediate attention. It is reported that in order to meet this challenge, the Government has, in the recent round of teacher recruitment, selected teachers based on their subjects at the higher secondary stage. This is a positive step. But replacing the existing stock of teachers with a new set of teachers will take a long time. It is important that special packages are created to upgrade the knowledge of teachers in science and mathematics. This should also be accompanied by substantial upgradation of laboratory and library facilities in the schools. This could be done, to begin with, in selected schools in each neighbourhood and encouraging the schools within the cluster to make use of the facilities. In the long run, better facilities for science teaching have to be provided in every school with upper primary classes.

Effecting the Transition from 4+3 to 5+8: Need for Careful Planning

2.21 The recent decision of the Government to consider the elementary education cycle as consisting of classes 1-8 (5+3) instead of 1-7 (4+3) should not be mechanically interpreted as involving physical conversion of LPS and HPS to carry an additional class. The requirement is to ensure that children have easy access to 8 years of schooling that is essential for achieving the goal of universal elementary education. The physical conversion of such schools to carry additional classes should be done carefully. Incomplete primary schools with only up to class 3, 4 or 5 are not unusual. Many developing countries have adopted this pattern to meet the educational needs of young children in small villages who cannot access facilities in neighbouring localities. However, these are treated as feeder schools and the children get integrated into more comprehensive schooling facilities in the neighbouring localities as they grow older. The action plan should consist of drawing detailed school profiles specifying the number of children and the catchment areas covered; this should include consideration of potential for sustaining a viable size of enrolment in the years to come. There is no great virtue in creating physical uniformity in terms of class structure without adequate attention to its impact on the quality of instruction. Unmindful transfer of class 8 to existing elementary schools could cause serious damage to the already low quality transaction in these schools and trigger further drop out of children rather than increasing their participation.

2.22 Apart from adding to the infrastructure requirements in HPS, the change in the structure requires a re-appraisal of the entire curriculum at the upper primary stage and for class 5. This would also have implications regarding the number of teachers and their training needs in the light of the revised curriculum. It is important to note that in the changed framework, class 8 becomes part of the compulsory education and therefore terminal for many children. This is important as the secondary school has traditionally adopted a curriculum that is preparatory to the next higher class. Coupled with curriculum questions would be that of redeployment of teachers from HPS to LPS or even from high school to primary sections.

2.23 Further, the process of transition to the new framework should also take into consideration the fact that as we move to upper primary and secondary levels, proportion of schools under private management significantly increases. Therefore, the action plan for complete transfer of classes to the lower level cycles should be drawn after careful consultation and preparatory work so that it does not lead to friction among various interest groups and affect the quality of education.

Dealing with Small Schools

2.24 The approach of the Government has been to saturate schooling facilities across the state which has paid dividends by ensuring near complete enrolment of all children in schools. But it has its flip side also, as it has resulted in a very large number of small schools – schools with only one or two teachers, only one or two classrooms and just around 15 children. With continuous decline in entry age cohort and the addition of class 5 to lower primary sections and class 8 to upper primary sections, the situation is going to become even more complicated. Such small schools pose two kinds of challenges. First, a small school because of its suboptimal enrolment level under-utilizes teachers for a very small number of children, distorting the teacher-pupil ratio norm. Secondly, small schools are likely to remain less well equipped in terms of physical infrastructure as well as academic facilities and

perpetuate multi-grade teaching as the norm. Quality of education becomes the real casualty in this if not carefully handled.

2.25 But, small schools are not going to disappear. Therefore, it is desirable that the Government adopts a special approach to improving the quality of small schools which will continue to have only one or two teachers. This becomes even more important for small schools without adequate number of teachers at the higher primary stage. It should also be noted that most of the small schools are located in remote areas catering to under-privileged sections of population. A two-pronged approach has to be adopted for dealing with the situation. First, a special package has to be worked out for equipping small schools with additional academic facilities such as libraries and other self-didactic material for children in order to compensate for the lack of one teacher per class norm recommended by the Task Force. Second, the concept of a school complex or central school in a cluster could be revived in a need based manner. Specifically, small schools could be linked with the local central school which could be equipped with additional facilities that could be shared with others. But experience shows that such a sharing arrangement cannot be implemented in a routine fashion and across the board in all areas. Linking arrangement between a small school and a central school should be established after proper mapping exercises and identification of the right combination of schools through mutual consultation process. The central schools thus identified could be equipped under a special scheme with enhanced human and academic resources. Finally, it is also necessary to begin a process of consolidation of very small schools by combining some of them operating in the immediate neighbourhood. For this, we could provide transportation facilities to reach the school as recommended by the Task Force. In all these, close involvement and cooperation of the local community is critical. But this should be possible with the establishment of empowered School Monitoring and Development Committees which have already come into existence in most of the schools.

Financing

2.26 It is clear that substantive improvement in the quality of elementary education would require enhancement in financial investment, and therefore, the strategies proposed should be looked at carefully for their cost implications. However, with clear indications of declining admission to primary classes, the pressure for additional school space and teachers at the lower primary level is going to ease out. The task involved is to adopt well-calibrated policies for further recruitment of teachers and more importantly in the deployment of new as well as existing teachers. Well-planned action in this regard could result in considerable savings and also improve the efficiency.

2.27 A second factor to be borne in mind regarding further investment is to shift the focus from system-wide action to school-specific improvement measures. Experience from DPEP shows that investment actions at the state and district level may not influence school functioning adequately. Also, it is found that the capacity to design actions and utilize additional financial resources at the field level remains inadequate. Therefore, most of the additional inputs should be earmarked for decentralized action with school improvement as the chief concern.

2.28 To operationalise the various strategies suggested, it is necessary to work out detailed costs. Preliminary exercises⁹ indicate that enhanced resource allocations would be required

⁹ Sajitha Bashir, op cit.

but should be feasible if government restructures its finances and allocates more to education. Declining school-age population and existing coverage in terms of access indicate that not much has to be spent on opening new schools. Also there are opportunities for finding savings within the existing budget for elementary education. Two important sources are rationalization of teachers and consolidation of schools. This can generate internal savings. Hence detailed analysis should be taken upon priority basis because these savings can be used for quality improvement purposes.

2.29 Lastly, serious examination should be done of the current practice of utilising central government funds for improvement of elementary education. Traditionally, though most of the schemes have the scope for modification, state government has accepted the funds based on general parameters specified by the central government. This approach has to be replaced by a more contextualized planning keeping in view the unique circumstances in which the education system in Karnataka is functioning. This is of critical importance in the context of the ongoing district planning exercises for procuring assistance under the Government of India scheme called *Sarva Shiksha Abhiyan*.

CHAPTER 3

Secondary and Higher Secondary Education

I. Overview

1.1 Secondary Education in Karnataka currently consists of 3 years of schooling from classes 8 to 10. This is likely to be shortened to 2 years with the increase in the elementary cycle from 7 years to 8 years. The higher secondary stage (which is referred to as pre-university in Karnataka) consists of 2 more years. The 1990s witnessed a tremendous expansion of secondary and higher secondary education. Currently, there are about 8255 secondary schools, two thirds of which are under private management. The total enrolment in secondary schools is around 2 million. In 1993, 81% of the population had access to a secondary school within a radius of 5 km. of their habitation. The ratio of high schools to upper primary schools is 1:3.3 which is favourable as compared to the national average. However, only 50 percent of the children in the corresponding age group participate in secondary education. The reason for this is the very low transition from the elementary cycle to secondary cycle. It is found that while 65% of those enrolled in class 1 reach class 7 (end of elementary cycle) only 43 % join class 8. This is particularly severe in rural areas as the average transition rate between elementary cycle and secondary cycle in urban areas is to the tune of 90%. There are significant regional variations also. For instance, Gulbarga division had only 12 percent secondary schools although it accounted for 17 percent population. Districts like Bellary, Chitradurga, Raichur, Bidar, Gulbarga continue to register a far lower entry of students into class X (less than 25%) than the state average. Out-of-school children in the 13-15 age group are 11.2 lakhs and only 45% of girls in the 15-17 years age group continue their education.¹⁰

1.2 There has been a substantial increase in the number of higher secondary schools also which currently stands around 2083. Corresponding to the increase in the number of schools, student enrolment at this stage has also increased and is about 250,000. This obviously represents a very small proportion of children from the relevant age group. This steep decrease in enrolment seems to be due to the low pass rate in the class 10 SSLC examination, the first common public examination in the state. Over half a million students take this examination, but published results indicate that only 45 percent pass the examination, although many are known to repeat the examination. The largest number of student failures at secondary school level have been found to occur in Mathematics, Science and English.

1.3 After passing the SSLC examination, students can opt for different streams of study at the higher secondary stage. Completing this stage, for which the examination is conducted at the end of class 12, is very critical as it entitles entry into the tertiary level institutions. Though the science stream is preferred by students as it enables them to apply for professional courses, there is a popular perception that arts subjects are “easier than science and commerce”. Consequently, only 15% and 29% students opt for commerce and science streams respectively, while around 55% students take up arts. Again, the failure rate is very high in the class 12 public examination. Generally, only one out of three students appearing for the examination pass. Education at this stage is offered in three types of institutions – those which are attached to secondary schools, those which are stand alone institutions commonly known as junior colleges, and those which are attached to degree colleges. However, with the recent decision of the government to separate higher secondary institutions from degree colleges, the number in this category has got reduced and possibly will disappear in a few years.

¹⁰ *Human Development 1999 – Karnataka* Government of Karnataka, 1999.

II. Goals of Secondary Education

2.1 As noted earlier, for the elementary stage, government has clearly articulated physical targets to be achieved and has also specified the goals of providing elementary education in terms of student learning. In contrast, there has been no clear perspective on how many children of the corresponding should be covered and what is the time frame for improving the participation of children. This may be due to the fact that compulsory education ends with the elementary stage. However, some attempt has been made recently to set goals and targets for this stage in the context of the Medium Term Fiscal Plan preparation. The expectations are that:

- (a) about 65 per cent children in the relevant age group should participate;
- (b) about 80 per cent of those who join should successfully complete secondary education; and
- (c) education should enable secondary school leavers to participate in the rapidly changing world of work or to move to higher education.

2.2 Obviously these are very broad but difficult goals to reach if one considers the high dropout rates that currently take place while transitioning from elementary to the secondary stage as one out of three children who complete class 7 do not join class 8 which is the first year of the secondary cycle at present. However, a positive feature is that there is very high social demand for secondary education as indicated by the tremendous surge in enrolment and number of private unaided schools in recent years.

III. Issues and strategies

Integrating secondary and higher secondary (pre-university) stages

3.1 One of the key reforms to be taken up is to integrate the secondary classes (9 and 10) and the higher secondary classes (11 and 12). This is particularly important in the light of the lengthening of the elementary cycle and delinking of the higher secondary classes from degree colleges. Though this is likely to pose some problems in the short term, there are many advantages. Most important of these is that it will result in larger schools and therefore allow for optimal use of the physical facilities. A second advantage is that it will create a critical mass of teachers in each school. This is a very important issue as having teachers with appropriate subject specialization is critical, whereas currently many schools are required to manage with fewer teachers and often with no correlation between their specialization and the subjects they are hired to teach. Furthermore, such integration will surely lower the cost of operating schools. Finally, it will pave the way for eventual merger of the two examining bodies dealing with class 10 and class 12 examinations. The merger will not only reduce costs but also facilitate a more effective use of specialized capabilities developed in the two Boards of Examination (This is elaborated in the Chapter on Governance of Education). The most important advantage is that adopting an integrated framework of 12-years schooling will bring Karnataka on par with the national and international norms allowing for easy mobility of graduates.

3.2 It is necessary, however, not to view the integration of the two levels merely as a mechanical transfer of physical assets and students into a single campus. Many issues have to be carefully addressed. For instance, integration would imply for relocation of teachers. This could be quite complicated as the qualification requirement for secondary and higher secondary are different. But this is not unique to Karnataka as all states faced this problem while switching over to the new pattern. Also, experience has shown that it is worthwhile to adopt, in the long term, a two-tier framework of Trained Graduate Teachers (TGT) and Trained Post-graduate Teachers (PGT) covering the whole gamut of schooling as followed by the Kendriya Vidyalays. Second, the change over has to be accompanied by redesigning the curriculum. Of course, this should be seen not as a problem but an opportunity to set right some of the anomalies that have developed over the years.

3.3 The most complicated issue to be addressed in this regard is the decision on where to place the higher secondary sections. It is important to handle this issue with care taking pointers from the experience of Kerala which recently effected the transition process. In this context, it should be noted that unlike elementary schools (most of which are under government management) out of 8513 secondary schools only 2805 are government schools and 2524 are private aided schools while the remaining 4184 are private self-financing schools.

Need for a coherent strategy for expansion

3.4 For several years now, school education has caught the attention of planners and policy makers in a significant manner. However, much of the focus has been on elementary education and issues related to secondary education, have not been addressed adequately. If the goal of 65 percent participation in secondary schooling is to be achieved, the government has to develop a more coherent strategy of expansion. Currently, much of the expansion in the private unaided category and some expansion is in the government managed sector. The private aided sector has practically stopped expanding due to government policy. It is important to examine the implications of this approach. Encouraging expansion of self-financing schools may be desirable in the short term, but care should be taken to ensure that this does not widen inequities and regional disparities. Also, if the government proposes to move towards universal secondary education, will this help in getting the poor into the schools? It should be noted that though there has been a large-scale expansion of schools and enrolment, provision of physical facilities has been lacking. Many secondary schools operate in primary/upper primary schools. It is important to note that the courses in the secondary and higher secondary classes require more academic infrastructure such as libraries and laboratories. It is necessary that more careful projections are made of the expected demand in a disaggregated manner for different districts and regions of the state and a long term perspective and strategy is prepared with respect to investment of government resources in secondary education. In doing this it should also be kept in view that at present about 65 percent of the students who pass class 10 examination enroll themselves in higher secondary classes. One has also to consider the ensuing pressure on school space at the higher secondary stage. In fact, experience of other states including Kerala shows that about 85 percent children would, in the normal course, continue their education upto class 10, if access was not a serious problem.

3.5 In formulating a strategy for expansion, care should be taken to ensure that it does not lead to mass scale infrastructure creation for the schools. Analysis of the existing enrolment in schools reveals that several schools are economically unviable in terms of enrolment size. The transfer of class 8 to the elementary stage is likely to make it even more so. The approach should be one of consolidation of small secondary schools and increasing seats in the existing schools. This would require a rigorous analysis of the feeder-school system and the flow of students in different neighbourhoods. Also, trends in recent years have shown that the private initiative is likely to expand further. In the expansion strategy, government has to focus on two critical issues, namely equity and quality. Particular attention should be paid, as already pointed out, to overcome regional imbalances.

Curriculum Restructuring

3.6 The current framework of curriculum involving 10 years of general education followed by two years of diversified streams including vocational courses was designed more than 30 years ago. An underlying assumption was that a large number would terminate their education after 10 or 12 years and at least 50% students would opt for the vocational stream at the +2 stage. Experience shows that both these assumptions, at least in Karnataka are not valid. Neither do students wish to take up vocational stream nor do a majority of them consider 10th or 12th class as terminal. Further, rapid changes in the world of work have placed new demands on the knowledge and skills possessed by students. Also, emergence of new ICT- based learning technologies is making access to a variety of knowledge bases easier, thereby overcoming the undue dependence on textbooks and teachers. These factors clearly point to the need for a major reexamination of the existing curriculum framework.

3.7 The reexamination process has to address some core issues such as whether it is desirable to continue with the pattern of 10-year general education programme which makes every student follow an identical set of courses? In many parts of the developed world, the school curriculum even after grade 6 begins offering options for students in terms of levels of courses and choice of combinations in respect of language, mathematics and so on. The redesigned curriculum framework should offer students a wider range of subjects as well as greater flexibility in terms of subject combinations undertaken for study. This is important as only 1 out of 2 students complete class 10 examination and only 1 out of 3 pass the class 12 examination. What happens to them after that?

3.8 Creating flexibility in the choice of courses at higher secondary level is even more important. The curriculum should be such that it enables students to access a range of jobs, especially in the service sector, instead of confining them to a narrow range of occupations or focus only on tertiary education requirements. The most important area to be carefully examined is that of vocationalisation. It is necessary to examine how much of occupation-specific vocational training at the higher secondary stage is meaningful. Again, if we go by the low (or practically no) demand for the vocational stream, emphasis should be on capability building of graduates to be adaptable and acquire new skills as required by the world of work.

3.9 It may be pointed out that efforts to provide vocational education should be seen on a broader canvas which should take into consideration the large number of youth and adolescents who remain outside the purview of formal secondary schools. These groups generally fall between the school sector and the adult education sector which mainly deals with 15+ age group. It would be worthwhile for the two sectors, secondary and mass education, to jointly design and provide skill building courses which are directly related to the interests of the learners and to the market demand. Such convergent action is critical in order to avoid duplication and also for more effective use of resources. Since the continuing education programmes are implemented with central assistance, this would also help in more effective use of state government resources.

Quality Improvement is the core issue

As mentioned earlier, a substantial proportion of children drop out even before they reach class 7. Of those who complete class 7, only 2/3rd enter secondary school. In other words, only a few manage to complete the elementary cycle and join secondary schools. But surprisingly, of these, only 45% succeed in the class 10 public examinations. It is even worse at the higher secondary stage where only 35% pass. At the entry level to schooling, namely, the lower primary cycle, it is often pointed out that merely attending school beneficial to the child due to the socialization opportunity it provides. But such an argument is untenable at the secondary stage. Rather, it indicates a high level of wastage, society has to bear due to the poor quality of learning imparted in schools. Ten years is not a short period in the life of an individual and to find oneself a misfit for the world of work as well as for continuing further education at the end of it, is a crime. This makes quality improvement the core concern of school education in general and secondary stage in particular.

3.10 There are good indications from examination results as to where steps must be taken for improving quality in secondary education. First, some districts seem to perform better than others. While the Bangalore North, South and Dakshina Kannada districts have by and large performed well, 10 out of the 21 districts (i.e. about half the number of districts) in Karnataka invariably performed below the State average in the SSLC examination. About 27% rural schools had a dismal pass percentage of less than 20% in recent years. The story is similar in the class 12 examination results in Bidar, Gulbarga, Bijapur, Raichur and Chitradurga which have consistently shown very poor performance in the higher secondary examination. Obviously, this aggravates the already existing regional imbalances and inequities. Therefore, the strategy for quality improvement should specially target such districts which have chronically remained low performing. Analysis further reveals that SC/ST students regularly perform below the State average. Further, one cannot say that private schools perform better than the government managed ones. This implies that provision of support for quality improvement in the form of common input material and training may not improve the situation. The strategy has to be much more focused identifying specific regions, specific groups and even specific schools for contextualized action.

Quality improvement will not come only through enhanced input provision. It essentially depends on the quality of the transaction of the teaching-learning process. This again is not a question of merely improving pedagogic techniques used by teachers but has to be viewed in relation to learning levels in different subject areas. If one goes by examination results, mainly three subjects contribute to low performance in public examinations. These are Science, Mathematics and English. Therefore, one of the strategies for quality improvement has to focus specifically on teaching-learning in these subjects. Poor performance in science

is not a surprise as many schools have no science teaching facilities; much of science teaching in secondary schools is textbook based. Very rarely does one find a good science laboratory in a secondary school. The situation of higher secondary institutions is only slightly better. Though there is no hard evidence, there is a common perception that the level of subject mastery of science and mathematics teachers is very low. It is desirable that a special project be launched for improving science and mathematics teaching in schools. This could include subject upgradation programmes for teachers and provision of academic facilities in schools. It should also be accompanied by enforcing minimum standards of laboratory and library facilities in all schools, government as well as private. English teaching also requires special treatment for improving the overall quality of the secondary education system. Another measure that should be implemented is to ensure that teachers with the requisite qualifications are available for teaching these subjects in each school. It is found that currently, though many teachers are required to teach science and mathematics, many do not have requisite academic training in the subject. This is not to suggest that teacher training and other related action should be limited to only these three subjects. In fact, as pointed out in a later Chapter, there is practically no arrangement for inservice education of teachers in secondary schools and this area requires immediate attention.

It is well-known that public examinations create powerful backwash effect on the curricular activities that take place in the schools. Improvement in the quality of education imparted in schools requires that the examination system be properly designed. That our public examinations focus excessively on rote memory and do not evaluate more important capabilities such as problem solving and other thinking skills is common knowledge. Therefore, reforming the public examination and learner evaluation processes in secondary schools, in general, should be an important agenda in the years to come. The examination boards have initiated several actions in recent years to improve the quality of question papers and the reliability of the system. But most of the actions are related to improving the mechanics of preparing question papers and conducting examinations. More attention has to be given to the contents and methods of evaluation involved. In particular, there is an urgent need to streamline the in-school evaluation carried out by teachers.

Focus on School Performance

It is needless to say that it is only a well-functioning school that can produce good results. Therefore, one of the key areas to act upon is school functioning. As a study on quality of school education in OECD countries points out, for effecting improvement in quality of education, “school is the heart of the matter.” At present, much of the reform measures are generic and systemwide and many of them fail to make significant impact on actual school functioning. Therefore, the need is to shift the focus from system-wide measures to school-specific action that could induce a sense of accountability. This would imply action in several areas. The first area to act upon is the framework of management schools. Currently, secondary schools, particularly government managed schools, function as undefined components of a mega system. Schools do not carry any special identity. They are managed by the system through the administrative hierarchy rather at the school level. This has to be replaced by a system of school-based management. Every school has to have its identity and perspective defined in a contextual manner. This recommendation has already been made by the Task Force and what has been presented is only an elaboration of the strategy required to implement the recommendation. It may be mentioned that in recent years an enormous amount of experience has been accumulated regarding school-based management as many developed countries have adopted this model.

Introducing an accountable school-based management system requires certain changes in the way schools are governed. The first requirement is that schools function with greater autonomy under the auspices of a school governing board consisting of parent representatives. A second requirement would be that every school prepares a school development plan and remains accountable in implementing the plan. The third and most important requirement is that schools receive support for the purchase of essential items and also for developmental action according to the agreed plan of action. In fact, the government of Karnataka is already implementing such an approach, at least partially, for elementary schools with the establishment of SDMCs. The approach could be fine-tuned to suit the requirements of secondary schools. In many countries where secondary education is free and universal, governments have made grants to schools fully linked to the school improvement plan. Though it may take some time for this to happen, it is important that Karnataka moves in this direction in order to make it the norm, in the long term.

The core issue still would be to establish a system of accountability which is linked to school performance. This implies that we create a system of quality monitoring which ensures that every school, government or private, maintains minimum expected standards and effectively implements the improvement plans agreed upon. It will be difficult to put in place such a system within the existing framework of inspection and supervision. It may therefore be appropriate to establish a Standards and Quality Monitoring Organization which functions as a quality-watch organization drawing upon the expertise already available in and outside the system. Further details on the contours of such an organization are given in the Chapter on Educational Governance.

Studies have also revealed that the quality of schools and their functioning depend heavily on the quality of leadership. This brings up the question of management capability among school principals and headmasters in Karnataka. At present, school headmasters are drawn from among the teachers or through direct recruitment through the Karnataka Education Service. In neither case do they enter the position with any specialized orientation for institutional management. They are often compelled to fall in line and continue the existing routine. If quality and improvement in school performance is the concern, it is essential that we invest adequately in building leadership and management capabilities among school principals and other senior staff of secondary schools. In fact, this is of special significance in the context of the proposed move to change the structure of school education and possible integration of secondary and higher secondary stages.

Question of Financing

It was observed that the size of the age cohort entering primary schools is declining which is likely to reduce pressure for creating school space. But it will take many more years for the benefit of this phenomenon to reach secondary education. In the years to come, enrolment in secondary schools will definitely increase in a rapid fashion. Particularly if the government succeeds in ensuring that all children complete elementary education in the next 4-5 years as proposed, it is inevitable that there will be a real explosion of demand for secondary education in the coming years, with continuous increase year after year. This is going to bring obvious pressure on the government to spend more on secondary education. It will be

most appropriate that government enhances its spending on secondary education in a planned manner, as it is going to play a critical role in contributing to the socio-economic progress of the state. However, spending public funds on secondary education need not be viewed in the same manner as elementary education provision which the government is committed to provide on a free and universal basis. Investment in secondary education should be strategically targeted keeping in view the critical issues already discussed. Some broad considerations could guide the government in this regard. Some of these are:

Investment in creation of additional infrastructure in government managed schools should be minimized to meet the concerns of equity. This is to be viewed in light of the unprecedented expansion taking place in recent years in the private self-financing sector.

Three priority areas that demand considerable investment are 'quality improvement, curriculum restructuring and examination reforms.' It is important that this is done with a comprehensive perspective of the whole sector and not in a fragmented manner focusing on only the small set of government managed schools.

Government should avoid proliferation of secondary schools which are too small and unviable academically as well as economically. Rather, the effort should be to seek savings from the consolidation of such schools.

The grants-in-aid procedure needs to be revamped to reach compensatory inputs to poor students in a more targeted fashion. All schools need not be treated in the same manner. The nature and size of assistance given to a school should reflect the social background and economic capabilities of the students.

In the longer term, aid to schools should be performance linked and be more in the form of block development grants based on the developmental vision and commitment of the school rather than on a routine recurring basis with no accountability. In fact, over a period of time, government schools could also be brought on the same footing with local school governing committees acting as the managers of the school.

There is need for more careful assessment and planning of the core items in a long term perspective such as maintenance of schools and teacher costs. This should take into consideration expected enrolment on the one hand and the likelihood of absorption of part of the demand by private initiative.

Chapter 4

Teachers and Teacher Education

I. Introduction

1.1 Teachers and their skill and competence in the classroom constitute the single-most important component in supporting a system of quality education. It would be a truism to remark that any effort at improving the quality of schooling by introducing new pedagogies or changing curricula is crucially dependent on teachers themselves. The urgency to universalize elementary education has created new and unforeseen demands on teachers, both attitudinally and also in terms of their academic preparation. Over the years, the profile of the population entering school has changed quite radically. Many of the children entering government schools today are first generation learners. However, nothing in their training has prepared the teachers to face these changes or for adopting pedagogic innovations to meet contextual requirements. Pedagogic practice is still geared towards rote memorization, ignoring (and often at the expense of) meaningful and creative learning activities that lead to the development of the child's cognitive skills, self-confidence and ability to articulate.

1.2 Apart from changes in the profile of the children in schools, the knowledge base and skills that teachers have to teach have changed tremendously over the years. The knowledge base in almost all areas of learning is expanding at such an unprecedented speed that formal school curriculum is often incapable of keeping pace with the changes. Wider access to technology and mass media, which act as powerful means of non-formal education for the youngsters and the rising aspirations of parents to get good quality education for their children, has made the task of a teacher more complex and demanding. If teacher education has to meet these challenges, the nature and structure of both pre-service as well as in-service education of teachers has to be radically transformed. It is well known that while teacher educators are expected to impart innovative pedagogies to prospective teachers, one does not easily come across instances of fast changes and innovations within the teacher education programme. But can teachers meet the emerging challenges in the school education sector without adequate reforms in the programmes of teacher preparation? This is a key question that Karnataka has to respond to and resolve.

1.3 The following table gives an overview of the preservice teacher education scene in Karnataka – number of institutions, courses offered, and institutions offering inservice training programmes.

Table 4.1: Overview of Teacher Education in Karnataka

	Teacher training courses		Inservice professional development courses	Higher degrees/ courses of study
Higher Secondary (PU)	None		Govt. colleges/schools: RIE/IASE/CTE Private schools: none	
Secondary	B.Ed.	Govt: 8 Aided: 22 Unaided: 37	Government schools: CTE and IASE in content areas. Centre and State sponsored programmes by SCERT. Private schools: occasional workshops by private organizations	M.Ed., M.Phil. and Ph.D.
Middle/primary	TCH	Govt.: 37 TTI/DIET Aided: 40 Unaided: 52	Government schools: CRC, BRC, DIET, Chaitanya and centrally sponsored programmes. Private schools: occasional workshops by private orgs.	None
Pre-school	Nursery teacher training	Govt: none Aided: none Unaided: 12	Government: Anganwadi; inservice, one time training. Private: none	Department of child development, home science
Physical education	B.P.Ed.	Govt.: 1 Aided: none Unaided: 10	Occasionally organized by sports and athletic training meets.	M.P.Ed., and Ph.D. etc.
	C.P.Ed.	Govt.:1 Aided: 3 Unaided: 37		
IED/special education (DSERT recognized)	Long duration certificate courses	Unaided: 5	None	None
Typing, music, shorthand, drawing, art	Unrecognised Cert. Courses	Unaided		

II. Critical Issues

2.1 Questions and issues related to teachers and teacher education will always be directly linked to developments in the school education sector, its structure and management. The rapid expansion, recently initiated changes in the structure of the elementary education stage, implementation of centrally funded development projects such as Operation Black Board and the District Primary Education Programme have made significant impact on the constitution

of the present stock of teachers and left the school education sector itself in a state of flux. It is in this context that some of the critical issues and challenges facing teacher education in Karnataka have to be identified.

2.2 Teachers: Number, Recruitment and Deployment

2.2.1 Karnataka has a large number of teachers at the elementary and secondary school levels. The figures for 2000 were: about 210,000 (100% trained) at the elementary school level and about 90,000 teachers at the secondary school level¹¹. It is expected that there will be reduction in enrolments in the elementary stage of about 20% by 2011¹². However, given the drive to achieve universal elementary education, one may expect an increased demand for secondary schooling. Teacher-pupil ratios vary widely across different regions of the state. At the elementary stage, the range is from 1:31.74 in the Mysore division (min. 1:24.33 in Chikkamagalur District) to 1:45.46 in the Gulbarga division (max. 1:49.89 in Koppal District).¹³ This situation seems to have developed on account of unfilled vacancies of teachers and also unsatisfactory teacher deployment policies. The government has recently attempted to rectify the situation by transferring more than 2000 posts of teachers to the north-eastern districts which have a shortage of teachers from some of the well-provided districts in the south. Imbalances are also found in terms of subject specialization among teachers working in secondary schools. For instance, in some of the schools, teachers are required to teach science subjects without prerequisite academic qualification. Teachers for physical education, music, craft, art and theatre, all of which are essential to ensure the all-round development of the child, have only a marginal presence in the schooling system-many schools make do without such inputs.

2.2.2 Teachers are currently recruited through a common examination at the state level, with appointments being made at the district level. The state government has made considerable effort in recent years to streamline recruitment and deployment of teachers by introducing the common examination. Also, a system of pre-posting and pre-transfer counseling has been introduced to reduce teacher grievances and make the system more transparent. Restructuring of schooling from the 4+3+3 pattern to 5+3+2 has added a new dimension to the question of teacher deployment. This has to be done on an urgent basis keeping in view the new requirements.

2.2.3 Although the centrally sponsored scheme of Operation Blackboard has been in operation in the State since its inception in 1988-89, single-teacher schools still exist, possibly due to opening of new schools in small habitations. The need to provide schools for small habitations in order to facilitate access to schooling also has made 'multi-grade' teaching in one or two-teacher schools a reality rather than a temporary measure.

¹¹ Functional Review Reports: Education, Karnataka Administrative Reforms Commission, cp xxv also 150, 155, Tables 4, 11). These statistics do not cover the additional teachers employed privately in primary and high schools (15% primary schools and 65% high schools are under private managements).

¹² Functional Review Reports: Education, Karnataka Administrative Reforms Commission, cp 164, Table 24.)

¹³ Interim Report Task Force on Education, Government of Karnataka, Bangalore, 2000.

2.2.4 It is widely believed that many teachers are irregular and do not carry out their teaching duties satisfactorily. At the same time it is acknowledged that teachers are often pressed into many tasks unconnected with teaching and their work in school. The system also does not seem to be geared to encouraging or endorsing their efforts to teach better. In spite of the fact that all teachers are trained, they seem to be inadequately prepared for the challenges thrown up by universalisation, preparedness for first generation learners, attitudes and competence for equity and inclusion in the classroom. Poor subject competence and teaching particularly in language teaching, mathematics and science are also present in both elementary and secondary schools. It has been noted that programmes such as *Nali Kali* have been able to motivate teachers and also provide necessary space for them to be autonomous and explore creating their own teaching-learning materials etc., The overall need seems to be to infuse teaching with more professionalism. The participation of teachers in matters of curriculum planning and the preparation of school teaching-learning materials and textbook writing is still at a nominal level. In fact, currently the design of syllabus does not encourage or permit teachers to make independent decisions or choices to enrich the curriculum with locally available resources.

2.3 *Pre-service teacher education*

2.3.1 There are 71 colleges offering B.Ed. degrees and 133 institutions offering the Teacher Certificate Higher (TCH). There are very few institutions offering Bachelors and Certificate courses in physical education (11 and 37 respectively). Only about 5 institutions offer training to teachers in the area of special needs and inclusive education. Areas such as theatre, art, craft and music are not being catered to currently in any formal manner. There are also only 12 institutions offering training to nursery teachers. It has been noted that there is an overall unevenness in the regional distribution of these institutions.

2.3.2 Training for secondary school teachers is through the B.Ed. which is a university based, post graduate degree of one year duration, and is offered by a number of private colleges and a few government institutions also. These programmes are regulated by norms prescribed by the National Council for Teacher Education. For primary schools, the TCH diploma programme (after 10+2) is offered by both private institutions, Teacher Training Institutes, private as well as government, and District Institutes of Education and Training (DIETs). The syllabus for the TCH programme is uniform throughout the State and is monitored by the Directorate of School Education, Research and Training (DSERT). Neither the B.Ed. nor the TCH programmes have properly addressed so far the pedagogic concerns of middle school.

2.3.3 The situation is quite unsatisfactory in terms of quality of the programmes and competence of graduates from the teacher education institutions. Students with poor subject knowledge enter teacher training institutions at both the primary and secondary level. Inadequacies of the current curricula of teacher education at all levels are reported from all stakeholders—students training in these programmes, schools where they are employed and teacher educators themselves. The courses consist of outdated concepts and mechanical activities, and the institutions are insulated from the reality in schools. The current system of evaluation appears to be distorted and lacks credibility – there are virtually no failures and very large numbers of first classes and distinctions. There is also a widely acknowledged lack of appropriate reading material in Kannada for teacher trainees.

2.4 *In-service Education of teachers*

2.4.1 Currently in-service requirements for school teachers are being met by several institutions and structures, though quite inadequately. For primary education, the DIETs are expected to carry out regular in-service training programmes. In the DPEP districts, curricular and pedagogic ideas and changes have been communicated to teachers in the form of various training modules, via the structure of Block Resource Centres and Cluster Resource Centres. Monthly meetings of teachers at the CRC are expected to function as a forum for the professional development of teachers. The model of BRC and CRC has been taken to some of the non-DPEP districts also. The DSERT also contributes to in-service training. Recently a package developed by DSERT known as '*chaitanya* training' for primary teachers was implemented in the whole state. In addition, programmes such as teleconferencing and '*keli-kali*' have been launched. In addition, training modules developed by the NCERT and CIET, video-based training, computer education under the *mahiti sindhu* programme, add to the profusion of training that teachers, especially at the primary school level, are provided.

2.4.2 Inservice training needs for secondary schools are currently being met by colleges of teacher education which are quite inadequate both in terms of coverage and content. In fact, so far there has been little effort to systematically address the training requirements of secondary school teachers.

2.5 *Teacher educators and options for professional development*

2.5.1 It is acknowledged that to be a teacher educator, one must have both adequate experience of school teaching and also have undertaken higher studies in education, i.e. at the M.Ed., M.Phil. or Ph.D. level. While the qualification requirement is generally conformed with, teaching experience in schools is not often insisted upon. Teachers in private B.Ed. colleges are appointed directly by the management. It has been noted that many of these faculty members do not have any school-teaching experience. After joining, there are few opportunities for inservice professional development for teacher educators.

2.5.2 The situation of the TCH programme reflects a peculiar inconsistency. As faculty is required to have M.Ed. degrees, they would have all undergone B.Ed. training and are thus trained academically for secondary rather than primary schooling. A recent evaluation of DIETs in Karnataka noted that more than half the DIETs have no faculty with any primary school experience, and even in other DIETs, barely 50% can claim to have some experience of primary schools.¹⁴ This situation has arisen on account of the manner in which appointments are made to these institutions, drawing on high school and Karnataka Education Service recruitments. The requirement of a teaching degree rather than diploma ensures that no one with academic training in primary school teaching can go on to becoming a teacher educator. This mismatch has created serious contradictions in the availability of technical competence in areas relating to primary school pedagogy and curriculum. The gap is also reflected in the insufficient availability of competent resource persons, and translates itself into poor quality of various training modules, curriculum design, evaluation packages, etc.

¹⁴ *Evaluation of DIETs in Karnataka*, Institute for Social and Economic Change, Bangalore, 2001.

2.5.3 Responsibility for development and prescription of curriculum for B.Ed. course lies with different universities while the TCH is under the academic control of the DSERT. Like all professional matters relating to teacher education, these programmes are governed by the NCTE norms. Teacher associations and unions of the state have not been very concerned with academic matters relating to either their professional function as teachers or their professional development. There are no other state level professional bodies to oversee the formulation of policy and to redirect the course of teacher education.

III. Goals and Strategies

3.1 Based on the various issues identified, this section will identify some broad goals towards which policy regarding teachers and teacher education must work and suggest some strategies for action. These are presented classified under five subsections, namely, Teachers, Inservice Teacher Education, Preservice Teacher Education, Teacher Educators and Higher Education, and Institutional Arrangements.

3.2 Teachers

3.2.1 *Role of Teachers* The role of teachers must be redefined to reflect the challenge of teaching in the contexts of both universalizing elementary education and strengthening academic standards at all levels of schooling. Teachers join the service without any clear-cut expectations from them, neither in terms of initial requirement nor in term so their work profile. It is appropriate to define the role and work of the teachers in different stages and different types of school, such as rural or urban, and schools with single-grade or multi-grade teaching. The specification could deal with such aspects as basic mastery in subject matter, use of pedagogy appropriate for the stage of development of the child and social-cultural context of learning, mastery over the language of instruction, skills of evaluating learner progress and feedback, interacting with the community and caring for students emotional development, and so on. Often references are made to the role of teachers, as the new NCTE curriculum framework does, in a highly decontextualised fashion defined in terms of narrow behaviouristic competencies. A proper approach to the task would be that teachers themselves participate actively in the reorientation of their professional activity, both as teachers of their school and as members of a profession.

3.2.2 *Assessing the Requirement of Teachers:* It is necessary that teacher requirements for different levels of schooling be projected for a period of 8-10 years taking into account the rapid demographic changes taking place in the population cohort entering primary schools. The exercise should also take into consideration the expected improvement in student retention and patterns of student flow as well as the likely rapid expansion of secondary schooling. The assessment should also keep in view the ongoing changes in the structure of school education from 4+3+3 to 5+3+2 and the proposed integration of secondary and higher secondary stages. These changes would have serious implications on the requirement of teachers with different qualifications and subject specializations. The estimates should also take into consideration the expanding private sector participation in schooling. The exercise has to be comprehensive taking requirements in government and private schools in a disaggregated manner. It is within this context that Karnataka should plan for pre-service training institutions. This could also examine whether the government should maintain the present level of direct involvement in supporting and managing pre-service teacher training institutions.

3.2.3 *Appointments and service:* The State has already devolved teacher appointments to the district level. The regional imbalances in teacher-pupil ratios must be addressed by ensuring a more rational deployment of teachers. Schools in rural and interior areas suffer the most from lack of teachers and transfer. There should be binding commitment at all appropriate levels of the government that no school remain without the specified minimum number of teachers for more than a few days. In this regard, the recent action of the Government to transfer more than 2000 teachers from one region to another is a positive step. Redeployment of teachers has to take into consideration the changed structure of the school system and the emerging requirements at lower primary, upper primary and secondary schools. Also, mechanisms of transfer may be made open and transparent. Again the recent specification of criteria for transfers and teacher counseling sessions preceding transfers are steps in the right direction.

3.2.4 There is a need to enable teachers to identify with their school and local community more strongly through appropriate recruitment and appointment policies. Currently, the teachers appointed by the system fail to develop a sense of affiliation and identification with the local community and the particular school in which they work. Ideally, a teacher should be appointed to a particular school. Moving to a new school would mean a fresh selection though he/she may carry all the accumulated benefits to the new school. In the long term, treating schools as anonymous entities and appointing teachers in bulk without any consideration of where they are to work needs to be replaced by a system of school specific appointment. This, of course, may not be uniformly possible for all schools as many schools are two-teacher schools. The approach should be to accept the principle and adopt this in a context specific manner. There should be no problem in adopting this for big schools, particularly for secondary schools. However, following the decentralization process, it is desirable that, to begin with, teachers are appointed to smaller units of governance. This would improve the efficiency of the system as well as bring in greater sense of affiliation and accountability. This is already being tried out in some states with the *panchayat raj* bodies becoming the appointing authority for primary school teachers.

3.2.5 With the exception of census-related work in their own local area, which would help them learn more about the local community, or in the conduct of poll duties, teachers must be completely exempted from carrying out other kinds of activities not related to their professional work of teaching children. This could form part of their conditions of service in order to enforce commitment on the part of the government, which could in turn demand higher standards of service from teachers.

3.2.6 Currently many schools do not provide any physical development activity to children. This is a very serious lacuna and must be corrected ensuring that trained teachers are appointed and also proper provision is made in the timetable for this activity. Activities like art, craft, theatre and drama also are not provided adequately to children. Facilitating the employment of part-time teachers, even at the local level, would go a long way in ensuring that these essential features are incorporated into the school curriculum, making way for the all-round development of the child and also shifting the school's focus from an over-bearing academic one. Similarly facilitating the appointment of competent science and mathematics teachers may go a long way in improving the quality of learning these subject areas. Government has to in the long run adopt the system of teachers with two levels of qualification – graduates with training and post-graduates with training. As will be elaborated later on, primary teacher training needs to be upgraded as integrated programmes situated at collegiate level.

3.3 Inservice Teacher Education

3.3.1 Providing support for the continued professional development of teachers after they join service is at least as crucial as providing a good pre-service training programme. For if the latter more or less defines the teacher's conception of her role and its scope, the former can assist her in negotiating this role in the school context – to grow into it or redefine it creatively. Unfortunately, inservice education of teachers has been equated with attendance in training programmes. There is a need to change this perception. If inservice education has to be truly meaningful it has to be need based, voluntary and contextualised. The current approach to inservice education is decontextualised and generic in nature as centrally designed and it is offered far away from the schools where the teachers actually teach. There is a need to rethink about the organization and the variety of in-service training courses being provided.

3.3.2 Karnataka has to deal with two priority issues if investment in inservice education of teachers has to add real value to their work in schools. The first is to change the prevalent framework for organizing inservice courses. As already noted, in general, the existing arrangement does not make the inputs provided in inservice programmes need based. Teachers have no role in the organization or choice of contents and programmes which reduces their commitment to internalize and change their own activities in the school. The effect is that teachers undergo training but the school functioning remains uninfluenced. The second area to address is to ensure that inservice training programmes are more goal-oriented. The main goal has to be to impact school functioning in order to improve their performance. Both the mechanics of offering training, (the organization, etc.) and the contents of the training must reaffirm the overall aim of qualitative improvement of the school and also the teachers identity as a professional, interested in her self-improvement. For this, more rigour,

quality content and some principles of choice may operate. The range of activities that are regarded as contributing to inservice professional development too may be widened. Some of the strategies that could help bring about such a transformation in the approach to inservice teacher education are presented in the following.

- a. Freedom to choose inservice courses: Rather than providing ‘mass training’, as is often done even under DPEP, the district and block level planning should allow teachers to plan or choose courses in specialized areas; for example, introducing algebra, or developing diagnostic tests for geography, developing children’s writing skills, drama, low cost experiments in primary school science, etc.
- b. Capacity building in resource institutions: Offering specialized courses as per the demand of teachers and schools would imply that much more expertise is developed by institutions offering inservice courses at various levels: district, block and cluster. Not all expertise has to be institution based. Instead, resource people with such expertise should be drawn upon and encouraged to develop short courses for teachers to choose from both at the district and the inter-district/state level.
- c. Accreditation of inservice courses: Currently, inservice courses are designed and offered on an ad hoc basis. As a result, neither the teachers nor the authorities try to examine and assess the value of the course. Therefore, it is necessary to evolve a system of accreditation of inservice courses.
- d. Obligation to participate: Freedom to choose has to be linked to an obligation on the part of the teachers to complete a minimum level of participation every year. Thus an appropriate system for choosing courses from a variety, and meeting some minimum training requirement per year has to be evolved.
- e. Decentralize funding: Centralized funding for a decentralized arrangement which responds to localized needs of the teachers cannot function effectively. It is therefore necessary that funds for participation in such programmes are administered at block, cluster and school levels.
- f. Widening the delivery framework: It is doubtful even with this whether continuous inservice education can be provided to all teachers. Therefore, it is worthwhile to design and organize open - learning programmes to meet the varying requirements of teachers.

3.3.3 While these changes in the mechanics of organizing inservice training programmes could go a long way in streamlining the ongoing activities and giving direction to them for quality improvement of the system, inservice teacher education has to look beyond mere training.

3.3.4 *Improving Subject Mastery of Teachers*: As with the mechanics of organization, the contents of the inservice programmes also have to undergo transformation. Instead of focusing only on pedagogy, improving the domain knowledge of teachers should be given high priority. In fact, the poor levels of competence in subject areas, especially in the sciences and mathematics, is a matter of serious concern, as this creates a self-perpetuating downward cycle. This calls for providing teachers with subject-enrichment programmes. This may be done either within the teacher training programmes, or soon after recruitment, before they enter the school. This could be based on a participatory identification of needs, in which the teachers (or student teachers) themselves take the initiative, followed by intensive classes,

conducted with the help of say retired subject teachers or competent high school or local college teachers. Supporting the creation of subject-based professional teacher groups or network, may be also considered.

3.3.5 Similarly, language teaching of the mother tongue/medium of instruction needs to be strengthened and made more creative and lively. The introduction of English into Primary school calls for additional professional development and support.

3.3.6 *Developing Teacher Resource Centers:* No amount of externally designed training would fully meet the on-the-job learning needs, teachers. There should be opportunity for teachers to determine their own requirement and even to pursue self-study in chosen areas. At present, even if a teacher is interested in doing some library reference work, exploring new areas, or learning new skills, there are no facilities. This often demoralizes young teachers who join service with a sense of idealism and enthusiasm to excel in their work. It is desirable to have a good resource centre in every block that could cater to the academic needs of all teachers in the block. In fact, the DPEP has already created some infrastructure for BRCs in each block. But unfortunately, they have been somewhat ill-conceived and currently function only as routine training centres. Perhaps we could convert some of these into Resource Centres well equipped with library and reference material for teachers of all levels, elementary as well as secondary. The Centre could also be equipped with modern ICT facilities as well as equipment for preparing innovative training material. Again, the centre should be open not only to government school teachers but also to those from private schools.

3.3.7 *Opportunities for Career Advancement as a Teacher:* Currently, career advancement is defined primarily in terms of rising in the administrative hierarchy. For a TCH diploma holder, other than a headmastership, the only other opportunity is in the new project structures such as a CRC and a BRC. Secondary School teachers have slightly wider options, other than administrative positions. Often these new roles do not draw upon or build upon their earlier expertise or training. New career paths and possibilities of a more academic/professional nature need to be opened up for teachers. For instance, the 'diploma' nature of the primary school teacher training is a serious bottleneck in creating expertise in elementary education. This issue needs careful consideration so that the feeling of stagnation and burnout does not set in, in the minds of good teachers. There are not many models available for this in the country. Promotion of such courses as the B.El.Ed. degree offered by the Delhi University, the B.Ed. (Elementary), or bridge courses leading to an undergraduate degree, etc., being contemplated by some universities are some possibilities worth considering.

3.3.8 The service conditions of teachers could allow them to take one or two years of study leave, in order to undertake courses of study in higher education, for their own professional development. Creating and awarding fellowships for study, through selection examinations, or after evaluation of research proposals submitted by teachers, to recognized institutions within the State, such as the RIE, Mysore, or institutions of national repute outside the State may also be considered. There may also be provisions created for school teachers to work along with faculty of universities, B.Ed. colleges, NGOs or DIETs and engage in short term

action-research. Such activities may be supported through a fund specially created for the purpose.

3.3.9 Other kinds of professional activities which should be made open to capable teachers at both primary and secondary levels would be to participate in teacher training as faculty. This would be possible if the current practice-teaching model which is lesson-plan based were to be redesigned in the form of apprenticeships with 'master-teachers'. Every effort must also be made to ensure the participation of teachers in curriculum planning and textbook production, which are themselves highly enriching activities.

3.3.10 *Introducing a System of Teacher Evaluation:* There is a need to ensure that schools achieve better standards of performance. Sustaining the motivation and interest of teachers requires a supportive leadership in the schools. At the same time, reporting and responding to the concern of community and the administration on matters relating to their students, performance, etc., and comparisons with other institutions will also help to maintain standards. One model is to evaluate individual teachers, based on criteria such as teacher attendance, pupil attendance, performance, etc., and to reward excellence, suggest remedial measures, or penalize tardiness in extreme cases. An alternate model to be explored is for evaluation of teacher performance to be school based which would involve evaluating the teacher in the context of the total school and its performance in a holistic manner. Norms for any evaluation would need to be evolved with the active participation of the teachers themselves, and may be carried out by peer groups of professionals and representatives of the parents of children/community. Rather than these recommendations becoming weapons, they must be seen by the school community as constructive criticism, helping them to decide the nature of in-service training they require, in planning the activities they need to strengthen, facilities that need to be improved, etc. Providing funds to each school and individual teachers for purchases related to their professional duties is a positive step in this direction. But they should be linked to performance and operated within a framework of accountability.

3.4 Preservice Teacher Education

3.4.1 Teacher education at the pre-service level includes a variety from the nursery teacher training diploma, to the certificate for teaching elementary school, B.Ed. degrees for secondary school teaching, physical education, etc. The Education sector needs to view Teacher Education programmes from the perspective of training teachers for schools. The quality and orientation of the programmes therefore have a direct influence on the quality of school education.

3.4.2 *Need for reexamining the teacher education curriculum:* The current curriculum of all pre-service programmes needs to go through a very rigorous academic review and renewal. There is a pressing need to make it more relevant to the job for which it trains its students, and also to improve its quality and rigour. Although the programme is quite intensive and demanding, much of the curriculum is composed of mechanical and non-reflective activity. The academic study of education and the school experience, which are the two main components of the programme, must enable students to develop a strong professional identity, both attitudinally and with technical competence, which will enable them to respond

creatively in classroom teaching. Currently, two changes in the structure of the pre-service teacher training programme are underway, both involving lengthening the period of training. With respect to the B.Ed. course, the RIE is trying out an NCTE sponsored model of a two-year B.Ed. programme. For the elementary stage, DSERT has revised the programme to add one year of internship in schools before the certificate is given. Both these are at the initial stage and it is difficult to visualize their possible impact on the quality of teachers graduating from these programmes. However, in any such revision process, some basic considerations are essential: (a) The curriculum must provide student-teachers with opportunities to reflect upon their own learning experiences critically, so that they are able to link their theoretical understanding with the reality of Indian schools; (b) Following international trends, the activities of training have to become more school based than college based. The practice teaching programme should provide a more holistic school experience to the students instead of being merely lesson-plan based fragmented action; (c) While significant efforts are being made by the government to introduce ICT into school experience, no scope has been created for such experience to the prospective teachers. This needs to be rectified so that future teachers do enter schools with adequate understanding and capability to use ICT in their schools, to the extent possible; (d) While lengthening of the programme would be beneficial only if the nature of the inputs and experiences are systematically oriented to improving the capabilities of the student-teacher, merely adding another year with the same kind of experience may not suffice; (e) Some of the innovative models such as the B.El.Ed. of the Delhi University or the B.Ed. Elementary of the RIE need a closer examination to see if they could be adopted in Karnataka; (f) The current approach of viewing teacher training courses for different stages of schooling in a compartmentalized fashion should be replaced by a perspective which takes into consideration the requirements at every stage and builds effective interfaces. (g) Karnataka government may set up a group to examine the situation in a comprehensive manner covering teacher education programmes at all stages and recommend the actions required for building interfaces between different stages in a meaningful manner.

3.4.3 *Training for the higher secondary teacher:* Karnataka is possibly the only state which does not require any pedagogy qualification for teaching in higher secondary classes. Possibly, remaining unattached from the school as well as the collegiate system has left this stage out of the purview of teacher education altogether. With the delinking of this stage from the collegiate sector, it is important that the training requirements of teachers at this stage are closely examined and an appropriate programme is worked out. In this regard, it may be worthwhile to look at the models operating in other states and also the national pattern followed by the kendriya vidyalayas. As already pointed out, the approach at the national level B.Ed. is considered as the prerequisite along with a postgraduation in the subject of specialization.

3.4.4 *Resource Material for Teacher Education:* As already pointed out, the dearth of good books, reading and reference materials, especially in Kannada, is a very serious lacuna. Currently, most students read only textbooks or guidebooks, as they do not have access to any other materials. A very extensive programme of commissioning and publishing, both creating new materials and also translating classics and important books from other languages, must be taken up systematically and immediately. Merely producing handbooks, teacher guides, and other such materials will not suffice.

3.4.5 *Quality Maintenance in Teacher Training Institutions:* Currently, there is no mechanism at the state level to monitor the quality of functioning of teacher training institutions. NCTE operating at the national level has set certain norms for operating teacher training institutions. But these essentially relate to input factors. There are no specifications on the nature of transaction expected and the quality of outputs. Karnataka could move in this direction setting down expectations in terms of the output standards from the institutions. Currently, the only basis is the marks obtained in the final examinations but the wide-spread misuse of internal evaluation processes has brought down the credibility of the final results. In monitoring the standards and quality, adequate importance has to be given to the active involvement of the user bodies, namely, schools themselves. Encouragement may be given to professional associations of teacher educators to come up with a workable self-regulation mechanism.

3.4.6 *Reexamining the role of the Government in Preservice Teacher Training:* At present, the state government spends substantial amounts in supporting and managing teacher training institutions at both elementary and secondary stages. This is in addition to the DIETs which are presently supported by the central government. As and when central assistance is withdrawn the state will be required to bear the expenditure fully for these institutions also. This undoubtedly will be a huge burden on the state government. Interestingly, the number of private teacher training institutions has outstripped the number in the government sector. In fact, there is an unfulfilled demand for opening new institutions in the private sector. In this context it is necessary for the government to examine whether it should be directly involved in managing teacher training institutions. Instead, the investment could be more fruitful if it is made in programmes for quality improvement and promotion of innovations. Government could even examine the possibility of unburdening itself from the existing responsibilities by handing over the management of existing government institutions to private bodies. This would also release the professionals concerned with teacher education within the department to focus on policy related and quality improvement aspects.

3.5 Teacher educators and Higher Education

3.5.1 While B.Ed. colleges generally seem to be able to access qualified personnel with suitable university degrees, the TCH institutions have a dearth of faculty with suitable experience or academic preparation for elementary education. The condition of the DIETs with regards faculty, is especially worrisome. Teacher educators as a community would benefit from more opportunities to develop themselves professionally. Institutions must provide for such on-going faculty development. Universities and institutes of higher learning such as NIAS or ISEC could offer specialized courses for teacher educators or short term fellowships for small research projects, etc. There could also be programmes to allow faculty to spend time in universities centres vs centres and centers outside the state, e.g. NIEPA, JNU, Delhi University or even overseas. A scheme of fellowships, awarded through open competition would go along way in nurturing quality and the development of ideas.

3.5.2 Currently, the universities of the State, including IASEs and the RIE, are not able to attract or nurture talent in research or the academic study of education. This should be a serious matter of concern. The quality of any programme is ultimately decided by the quality of the people involved in it. The ability of structures such as the BRC and CRC or DSERT depends on the quality of people and the pool of ideas that they are able to creatively draw upon. Promoting the development of a few pace-setting institutions or nurturing synergies between schools and higher institutions of in- and pre-service education may offer some possibilities to improve the situation in teacher education.

3.6 *Institutional arrangements*

In this section, institutional arrangements and interlinkages that will facilitate and strengthen academic aspects of teacher education are highlighted.

3.6.1 *Provision of in-service training:* Keeping in mind the requirements of ‘elementary’ education (rather than only primary education), structures such as the CRC, BRC (in DPEP and some non-DPEP districts) and DIET and TCH colleges in districts and NGOs active in education should be networked so that they function together in consultation with the local DDPIs and BEOs to assess needs, take into account central or state programmes being implemented, and develop a plan for the kinds of courses that could be offered and the numbers involved. A similar consultation could be carried out for high school teachers. Based on this assessment, workshops and courses could be developed by various institutions, including DIETs, TTIs, B.Ed. colleges and associations of say, mathematics teachers, NGOs etc., drawing on resource people from schools, etc. A calendar of trainings should be prepared and announced in advance to enable teachers to schedule their participation. The current practice that all inservice training has to be organized only through government-created institutions has to change. There are many organizations in the private and non-government sector which have tremendous potential to design and organize innovative inservice education programmes. Inservice training programmes even of government teachers could be out-sourced to such institutions and agencies.

3.6.2 Organization of inservice teacher education has to be streamlined with careful consideration given to numbers and costs involved, and also the best available resource persons and organizations. This can be seen at two levels. One set of activities focus on dealing with relatively localized and routine requirements of guidance and support to teachers. This could be met through such decentralized support structures as BRCs and CRCs. In fact, working closer to the school location they are better placed to meet this requirement in a contextualized manner. If such facilities are not currently available, the possibility of involving a local NGO to perform these roles should be explored. Groups of retired teachers could be encouraged to set up such centres with no recurring liability for the Government. The second set of in-service programmes is more specialised and the requirement could be common among many teachers. Currently, there is heavy dependence on DIETs for doing this. For the secondary school level, this is partially met by the colleges of teacher education. Instead of centralizing such programmes through specified institutions, all teacher education institutions and NGOs in education should be encouraged to offer well-designed programmes. The choice of what course to take should be left to teachers, CRCs and BRCs. If a group of teachers prefer to take inservice training from an NGO instead

of the local DIET, they should be free to do so, and their training should be supported the same way as it would have been with the DIET. Government could provide financial assistance to such organizations, government or NGO, based on the number of teachers they reach out and the nature of programmes offered. Let the demand factor and the quality of the programme offered decide the sustenance of such programmes and organizations. There is no reason for the government to support and maintain organizations which cannot deliver quality service. This will also induce a sense of accountability in the organizations offering such programmes.

3.6.3 Groups of institutions attending to different levels and aspects of teacher education and the higher study of education, i.e. TTIs, DIETs, B.Ed. colleges, along with CRCs and BRCs, and the schools under their areas could be encouraged to work together and create academic synergies between these institutions, for teaching, curriculum inputs and participative and action research. Library and Resources which are expensive investments could be shared facilities in order to maximize their usage. At least one institution at the district level should be chosen and developed to support a good library of reference books, curriculum-related materials, and other resources. Self-learning materials, videos, etc., teaching-learning materials developed in other parts of the country could also be kept here. This resource could be developed at any institution--a DIET, BRC, or B.Ed. college or TTI (aided or unaided), which has been chosen on the basis of some relevant criteria, such as if it already has resources it is willing to share, etc. This library should be available to students and faculty from all over the district. It could also support the activities of professional associations, such as mathematics teachers, science teachers, etc. Linking up BRC and CRCs with anganwadi training and resource requirements could also be considered. In fact, we may on an experimental basis establish one or two such comprehensive teacher education campuses that would house teacher education programmes of all kinds and for all levels, and there by promote an effective platform for interaction and exploration among teachers, teacher educators and educational researchers.

3.6.4 There could be a circulation of teachers at BRCs and CRCs, so that new teachers are also given opportunities. A five yearly term could be considered as one option. This would also ensure a circulation of people, so that CRC faculty do not become too distanced from school teaching. And during the fresh training of new faculty, new ideas and enthusiasm can enter into the system. At the same time, premature transfers should not be permitted. Physically locating these in schools would also assist centres in maintaining the school link.

3.6.5 The restructuring of DIETs needs to be taken up immediately to ensure that the present wastage represented by these institutes is stemmed and it is turned into a viable district level institution. The current hierarchical linkage with the DSERT in academic and administrative matters curtails the autonomy of this institution, and instead of taking a lead in academic and research efforts at the district level, it functions mainly as an implementing office. The recruitment of faculty through transfer is a problem. The Unit structure of the DIET must be re-envisioned keeping in mind the structures which have come up under DPEP-led district planning and also keeping in mind available expertise in areas of elementary education. Non-functional units, such as curriculum, material development, and work experience could be terminated. The pre-service unit too requires strengthening. At the same time, a university-DIET linkage needs to be created.

3.6.6 The structure and functions of the DSERT require serious rethinking. The recruitment of faculty through transfers and the large administrative responsibilities of the DSERT have made it more a department of the government than an academic institution. There is no proper role definition for the institution as a whole and development of academic expertise among its faculty has been seriously undermined. It is currently not academically equipped for developing many of the functions that it has been given responsibility for, including pre and in-service training. The Task Force has proposed making DSERT an autonomous body. But will mere autonomy solve the problem? Experience in other states indicates that it may not fully address the problem. In fact, the problem with DSERT seems to lie in its ‘omnibus – be-all and serve-all’ nature. It may be noted that the core tasks performed consistently by all SCERTs in the country is that of curriculum development and textbook preparation. Over a period of time, several additional responsibilities have been thrust upon it, such as teacher education, environmental education, population education and so on. DSERT has become the parking place for any new centrally-sponsored programme. This has not only disallowed the development of clear perspectives of the role of the organization but has also taken away any sense of direction, responsibility and accountability. The immediate need is to change the nature of the organization from its ‘omnibus’ status to one whose goals and tasks are well defined. It is desirable to retain the core function of the organization and recast the structure. If tasks related to teacher education are looked into by an appropriate association or body of teacher educators, the DSERT would be able to look into curriculum planning, textbook preparation, and material development, and also evaluation of schools and of students, and the research questions which arise directly out of these activities. In effect, the DSERT should become a Centre for Curriculum Development, Textbook Preparation and Research. This would make curriculum planning and textbook preparation a more professional activity which has somehow become routine bureaucratic activity over a period of time. Such an organization would demand a changed profile for the faculty, which has to be carefully drawn up and recruited from among the best available teachers, teacher educators, subject specialists and so on from within the state or elsewhere. It is only in such a circumstance that autonomy of the institution would become real and valuable.

CHAPTER 5

Higher and Technical Education

1.1 Higher education is crucial for economic and social development of any country as it affects the entire education system, on the one hand and the entire stock of human resources and profile of the work force, on the other. The level of participation in higher education is invariably indicative of the collective aspirations of the people for national development and for improving the quality of life at the individual level. In particular, in a developing country, it is generally perceived that higher education is the passport for upward mobility on the social as well as economic ladder. Where does Karnataka stand in respect to development of the higher education sector? What is the policy of the Karnataka Government towards development of this subsector of education? These questions would largely determine the future economic growth prospects of the state and also influence the quality of life of the people in Karnataka.

1.2 Analyzing the higher education sector in Karnataka is a difficult task. If the sector is viewed in a comprehensive manner as consisting of all post-secondary collegiate education, the overall growth of the sector has been enormous. However, even a cursory analysis will reveal a high level of unevenness in the growth and development of different components of the system. Of particular concern is the way technical education and general higher education programmes have developed in a somewhat compartmentalized fashion, following different growth patterns and facing different kinds of issues. Keeping this in view, this chapter presents issues and strategies in two parts – one dealing with general higher education and the other with technical education.

1.3 Development of higher education has been a concurrent responsibility of the central and state governments. Accordingly, growth and development of universities and colleges in Karnataka has been influenced by the policies of the University Grants Commission as well as that of the Government of Karnataka. Government of Karnataka deals with all issues related to general higher education through the Directorate of Collegiate Education which functions under the guidance of the Department of Higher and Technical Education. Similarly, the technical education sector in the state is influenced by the policies of the State Government as well as the All India Council of Technical Education. The Directorate of Technical Education is responsible for overseeing the implementation of state government policies in technical education.

1.4 Undergraduate general education in the state is provided in government and private colleges affiliated to six state level universities and postgraduate education is offered in the university departments. Curriculum and examination for various courses are prescribed and organized by the respective universities. Engineering education is available in colleges that are affiliated to the Visweswaraiyah Technological University and in the Regional Engineering College that is co-financed and administered by the central and state governments. For polytechnics which provide post-secondary technical education, the relevant authority for curricula and examinations is the State Board of Technical Education. For degree level engineering colleges, the Visweswaraiyah Technological University prescribes the curriculum and is responsible for awarding degrees.

II. Key Trends and Development in Higher and Technical Education

2.1 The growth of higher and technical education institutions in the nineties has been phenomenal in Karnataka. Between 1995/96 and 1998/99, the number of general degree colleges increased from 749 to 932, and is 975 at present. Most of this increase was in the private self-financing sector, where the number increased from 41 to 473. Government colleges also increased substantially, though not to the same extent. Because of the freeze imposed by the Government, there has been no increase in the number of private aided institutions.

2.2 The number of engineering colleges has risen from 53 to 82. Another 40 engineering colleges have been sanctioned by the state government and are awaiting clearances from the All India Council of Technical Education. The number of polytechnics has increased from 137 to 186 and the number of elementary teacher training institutions from 128 to 135. Apart from increased institutional facilities, several social factors seem to have spurred this growth in tertiary education. In the field of technical education, Karnataka's institutions also cater to a large number of students from outside the state.

2.3 Student enrolment in general higher education has grown rapidly along with increase in institutional facilities averaging around 9 per cent per year over the last decade. In technical education, the annual growth has been around 4.4 percent. In spite of this massive increase, just over 6 percent of the youth population aged 17-24 in 1997/98 was enrolled in either general or professional education. Student composition by discipline of study shows that 55 percent of the enrolment is in the arts faculty at the degree level.

2.4 Beyond secondary education, admission criteria play an important part in regulating demand, but transition rates are high among those who are eligible to continue. Student performance in the terminal exam at the end of class 10 and class 12 is the major factor determining progress through the system. Approximately half of the 500,000 students who appear for the class 10 examination fail, more in some years. A tracer study conducted by the World Bank shows, however, that another 25 percent are able to pass the examination through repeat attempts; data on examinees available with government of Karnataka also indicate a high level of repetition.¹⁵ The tracer study indicates that only two-thirds of those who pass continue to higher secondary education, probably reflecting the combined effect of low marks obtained in the class 10 examination and higher private costs. At the higher secondary stage, half pass the examination and another one-quarter pass on repeat attempts (drop out between class 11 and 12 has been assumed to be negligible). Interestingly, of those who pass the higher secondary education, a very high percentage (85 percent) continues to degree level education.

¹⁵ S. Bashir, *Karnataka - Secondary Education and the New Agenda for Economic Growth*, World Bank, New Delhi, 2001. (Draft Report)

2.5 One of the most striking features of higher education in Karnataka is the unprecedented growth in the private sector. This has happened both with respect to general higher education colleges and technical education colleges. This is important, because till a few years ago it was mainly government colleges and private aided ones that provided general higher education.

2.6 In fact, in recent years the system of delivery itself has undergone significant transformation. One important development is the emergence of distance learning as a major means of getting tertiary level degrees. In Karnataka, Universities of Mysore and Bangalore have been offering education through distance mechanism for a long time. This has been further expanded and streamlined through the establishment of the Karnataka State Open University. Foreign universities offering accredited courses provide yet another avenue through which students could seek higher education. This diversification of the delivery mechanism has further enhanced access to higher education in Karnataka.

2.7 One can notice two positive fallouts of the rapid expansion of higher education sector in recent years. The first is the introduction of many job-oriented courses such as industrial chemistry, industrial microbiology, foreign trade and practice and functional English/Communicative English, directly responding to the market demands. The second implication is the opening up of higher education to new social groups, especially in rural areas.

III. General Higher Education

3.1 Karnataka can take pride in achieving a rapid expansion of institutional facilities for higher education. But in the global knowledge society, the real benchmark of progress in higher education lies in its comparability with national and international standards. Is the system of higher education in Karnataka comparable with global trends? Can it stand global competition in terms of the nature of programmes offered and the quality of the output produced? Seen from this angle, Karnataka is at the crossroads in shaping its higher education system. Options are limited both in terms of the nature of changes demanded of the system and the time frame for implementing the changes. The traditional approach of *ad hoc* and incremental reforms will not do. The state has to make a big leap with a programme of total restructuring of the system to bring it on par with international format and standards. It is difficult to present all the details of actions to be initiated for achieving a radical transformation of the system in a time bound fashion. The section, therefore, attempts to highlight the basic elements of a programme of reform and restructuring of higher education in Karnataka based on the observations emerging from the subsectors study and other available empirical data. The section also discusses the core issues involved in implementing such a programme of restructuring and the strategies that the state could adopt in implementing it.

IV. Drawing the Contours of a Programme of Restructuring

4.1 That higher education in the country needs a major overhaul has been stated many times in the past. It is more than fifteen years ago that the National Policy on Education called for a series of radical initiatives in almost all aspects of higher education. However, it is paradoxical that higher education which is expected to lead to innovations and change processes in the whole system of education has practically remained unchanged during the last several decades. In general, higher education has lacked a futuristic thrust and has been unresponsive to fast paced changes occurring in the socio-economic scene as well as the global developments in different spheres of knowledge. The system has been very slow to accommodate any innovation in contents and processes of education. In more than one way, higher education in Karnataka is a true reflection of the macro-systemic characteristics of Indian higher education.

4.2 Placed in such a context, Karnataka has little choice but to take bold and independent initiatives in order to inject a new futuristic vision into the higher education system in the state. The need is for a major reform programme to change the character and direction of the system. Such major transformation has to be carefully orchestrated to ensure that the changes initiated contribute to the overall goals of transformation and do not result in further imbalances and incongruities in the system. What should be the goals and components of such a framework of transformation and restructuring of higher education in Karnataka? The following are some of the key elements to be kept in view while formulating a framework of reform and restructuring.

- a. In the coming years, higher education in Karnataka will have to cater to a larger number of students as more students will complete elementary and secondary cycles, and as aspirations and incomes of the people rise with further progress in social and economic spheres of life.
- b. While expansion and enrolment patterns need not be controlled, some amount of enrolment management is needed in order to avoid imbalances in the system, particularly with respect to study of science and mathematics, which is critical for economic and technological progress of the state.
- c. An effective medium-term plan has to be worked out by projecting future requirements based on trends in social demand and the skill requirements of the emerging knowledge society; it is important to examine the global trends in participation levels while setting the targets for the state.
- d. Proposals for quantitative and qualitative changes in the system should keep in view the concerns of equity and ensure that the approaches avoid widening the social and economic divide in the society.
- e. One of the key reforms to be initiated in the system is to radically restructure the curriculum framework of higher education. Mere additions and deletions in the contents will not do; the purpose should be to diversify and widen the range of options available to the learners by introducing change in the basic framework of the curriculum.

- f. Fundamental changes are required in the methods of instruction adopted in institutions of higher learning incorporating such elements as development of thinking skills, problem-based learning strategies, use of projects and group work, integration of IT into the activities of both students and teachers, attention to writing and communication skills of the learners, use of libraries and other resources.
- g. Instructional methods are invariably influenced by the methods and processes adopted for evaluation. Therefore, transforming the quality of education critically hinges on changing the methods of evaluation adopted at the institutional level as well as the type of examinations conducted at the system level.
- h. While an overall vision is essential in reforming the system, a typical top-down approach is likely to stop short of influencing the institutions where actual delivery of education takes place. Therefore, an important component of the reform framework is to change the institutions which impart instruction – the way they are organized, the functions they perform, the contents and processes they transact, and the way they relate with the students and other stakeholders. It is the changes required in the institutional arrangements that should determine the changes in the rules, regulations and procedures rather than the other way round.

4.3 These key points listed here are not exhaustive. They, however, indicate some of the core concerns around which programme of reform and restructuring could be drawn in the current context of Karnataka. In fact, there may not be much disagreement on the key elements highlighted here. The problem has been a lack of concerted attention at all levels on determining the actions to be initiated for changing the system and on how such actions are to be carried forward. In the next section an attempt has been made to identify areas where interventions are needed and the kinds of actions that have to be initiated.

V. Implementing a Programme of Restructuring: Issues and Strategies

5.1 Higher education is a complex sector having several players and many interest groups. Formulating strategies for change and reform is quite difficult. In principle multiplicity of actors should give more plurality of perspective and greater intellectual value to the sector. But in practice this very strength of multiple actors seems to have become the real bottleneck for faster change and innovation in the sector. Karnataka has to, therefore, carefully negotiate its way forward in charting the reform process. It should be borne in mind that the key for restructuring is not so much the number of changes initiated but the comprehensiveness of the reform framework and the swiftness with which actions are initiated in a coordinated manner. As already mentioned, fragmented and unduly slow changes fail to gather momentum and create the necessary critical mass required for effecting any major transformation which is the critical need of the higher education system in Karnataka. This section discusses some of the critical challenges involved in the restructuring process and indicates possible strategies to be adopted.

Expanding Institutional Facilities

5.2 As already noted, there has been a significant increase in the number of institutions providing higher education leading to a significant growth in enrolment in general higher education courses. But the pattern of growth in institutions needs a closer scrutiny. While the government has continued to establish new colleges, the private self-financing sector has grown even faster. Allowing for the market forces to influence the establishment of new colleges is not wrong. But to adopt a hands-off policy for private sector, on the one hand, and continuing to invest government funds for creating additional facilities on the other, is not desirable. In fact, such an approach adopted in recent years, as pointed out in the subsector study, has led to serious problems. First, it has resulted in a number of non-viable colleges with very small enrolment. Second, several of them are of extremely poor quality. It should be recognized that provision of proper academic facilities such as libraries and laboratories requires reasonable investment which becomes impossible without a minimum threshold level of student enrolment. Freedom for the market forces to operate should not become license for creating substandard facilities. The Department of Higher Education has to be proactive in formulating a policy for expansion of higher education institutions and setting norms and standards for opening new colleges, taking into consideration both quality and equity considerations. These should be applied not only for the private sector but also for government institutions. In this context, the current dual framework, affiliation by the university and recognition by the government, needs reexamination, in order to create a more coordinated approach. Directorate of Collegiate Education has to do more than merely give grants to some institutions and oversee government colleges.

Proportion entering higher education is too small

5.3 There is a common perception that the higher education system is growing too unwieldy and should be constrained. In a limited sense it is true as the number has grown substantially in absolute terms. But seen in the larger framework of development and from a long-term point of view, the proportion of students in the age group 18-24 who enter higher education in Karnataka is only 6%. This is far too small if one looks at the changes in the economic sphere. Government has to reflect on this issue and set realistic targets to enhance the share of people joining higher education courses if economic and social progress in the long term is not to be thwarted. If we compare with the international trends, one finds that the proportion is far below the situation in developed countries which is to the tune of about 40 percent and is about 20 percent in South East Asia. China which has a current rate of around 10 percent has set the target of reaching at least 15% in the medium term but considers it inadequate for maintaining the momentum in a fast-growing economy.

5.4 It is interesting to note in this context that about 85% of those who manage to complete the higher secondary examination, enter the higher education stream. This points to the fact that the main problem lies in the inefficiency of the secondary education sector. Currently, only one out of three persons passes higher secondary education and becomes eligible for higher studies. This also shows that the government has to take a holistic view of the situation. The current fragmentation of governance between the higher education sector and the school education sector should change. There is also a great imbalance in the number of students passing out of the higher secondary with different specializations.

Correcting Imbalances of Enrolment in different streams of learning

5.5 Though the overall enrolment in general higher education has increased, there is a serious imbalance in admissions to different streams and courses. At present 55% of enrolment in the state is in the humanities stream. The subsector study revealed a steep decline in share of admission to B.Sc. from 15.79% in 1996-97 to 10.73% in 1999-2000. Interestingly, even the share opting for commerce courses has marginally declined during the same period. An obvious reason for the sharp decline in recent years is the enormous expansion of technical education facilities in the state. While one could not have stopped this surge in technical education, though a temporary one, the Government has to examine the implications of this phenomenon from a long term perspective and correct the imbalance through proactive measures. In the short term, its impact is seen in terms of decline in the number of students per college affecting the viability and sustainability of the investment already made. We cannot allow for disuse and eventual deterioration of expensive science teaching facilities. In the long term, this leads to decline in demand for post-graduate education in science and mathematics, consequently, affecting supply of teachers and researchers at all levels. It is likely that it would seriously affect the availability of science and mathematics teachers in secondary schools.

5.6 Apart from these implications within the education system, lack of participation in general science and mathematics courses is detrimental to building a modern society in the long run. Government could institute special incentive programmes for operating science courses and also fellowships for good students to join science studies at graduate and post-graduate levels.

Need for Curriculum Restructuring and Institutional Autonomy

5.7 Higher education is the most rapidly changing sector of education all over the world. But, unfortunately, the situation in the state is one of apathy and stagnation, except for offering some new courses based on market demand. There has been, again, a lack of initiative on the part of the authorities to streamline this aspect. There was a time when many students from outside the country used to come to India to pursue higher education. But the position has gradually reversed with many more students from India going abroad and a decline in those coming from abroad. The major reason seems to be the unattractive curricular packages offered by our colleges and universities. In fact, even within the country, the general perception is that higher education institutions in Karnataka are not of a very high standard. It is needless to emphasize the importance of creating a robust higher education system which is vibrant and responsive to the fast-changing economic scene in the country. As has been demonstrated elsewhere in the world, absence of a well-developed system of higher education would soon become a bottleneck for further economic development of the state. For this, modernization of the curriculum and enhancing the quality of transaction of the curriculum is essential. For this, action on at least two fronts is critical.

5.8 First, the current system of rigid course offerings in colleges and universities at the first degree level has to be liberalized. There has been a positive development with the offering of several courses in such non-traditional areas as industrial chemistry, industrial micro-biology and foreign trade practices. But, merely offering side streams through BCA, BBM and so on will not suffice. The courses should become compatible with the framework adopted in the

advanced countries. Experience in the developed countries shows that a liberal and broad based approach for choosing courses within the general education framework is critical for developing creativity and adaptability among graduates. This is also necessary to ensure that they do not remain unemployable after completing their higher education. Changing course structures is essentially the purview of different universities. It is well known that the long winding procedures involved do not make it easy for any radical departures in restructuring the programmes offered. But universities cannot remain oblivious of the changes in the outside world and the changing aspirations of the people. Here again, absence of an overarching platform, independent of government control, that can bring about more fundamental changes in the existing procedures without compromising on the academic freedom of the universities needs to be examined. As some scholars feel, consecutive revisions of the university acts in many states have done precious little to streamline such core aspects of their functioning. This is, of course, not limited to Karnataka alone. But why should Karnataka not break new ground and set new standards?

5.9 The second requirement for significantly improving the curricular standards offered in Karnataka colleges lies in reforming the institutional arrangements. In the existing affiliating college system, it is the examinations conducted centrally by the universities that determine the quality and standard of education offered. Colleges have no autonomy to set their own curriculum and teachers have no freedom to innovate their programmes. It is of course true that past efforts to introduce “Autonomous Colleges” in the state did not meet with much success. The general impression is that teachers do not want to take the responsibilities that come with autonomy. But this is not empirically established and such an assumption hits at the root of the professional convictions of a majority of teachers and scholars in Karnataka. One can only conclude that no serious attempts have been made to allay the fears of the teaching community. Perhaps, government should take more effective steps in formulating an appropriate scheme that allows autonomy to colleges. One of the core issues involved in the functioning of universities is their unwieldy size that operates with territorial jurisdictions in a monopolistic fashion. This does not make much sense in an open competitive society. It is more desirable to have smaller systems that can work more efficiently and compete with other systems in terms of quality. The Manipal Academy of Higher Education is a good example. Autonomy for colleges could contribute towards such developments in the long run. An alternative could be to allow for clusters of colleges to form coordinated groups facilitating horizontal sharing of ideas and resources and for promoting experimentation with new courses and curricular formations. Karnataka Government has to invest in creating such new thrusts within the system, instead of waiting for the University Grants Commission or some other national body to come up with a new package.

Improving and Monitoring Quality

5.10 It is assumed that the higher education system is a self-monitored organization that always ensures maintenance of standards and the quality of transactions in the institutions. It is with this assumption that there are no external inspectors or supervisors in higher education. Are we justified in making this assumption? In fact, public perception as well as empirical findings negate this. At the national level, the National Assessment and Accreditation Council functions as the body for monitoring the quality of higher education institutions. Colleges and universities are supposed to submit themselves for evaluation by

the NAAC. When all institutions follow this, it would provide a benchmark for quality gradation of institutions. As of now, very few institutions in the country have accepted this arrangement as the standard norm. If one goes by the experience of similar efforts at the national level, it is quite doubtful whether this would become a norm for all colleges in Karnataka. Here again, while the State should follow the national trend, there is no reason why the Government should not be proactive and create a system of stringent quality control mechanisms for the institutions. The most important requirement is the assessment of capabilities prior to the establishment of institutions and a system of periodic assessment accompanied by concrete action for improvement. A critical question is, “What should be the nature of such a mechanism?” Two ground rules have to be followed in creating such a mechanism. One is that it functions independently without Government control or control by university establishments. Second, it is a professional body of intellectuals and administrators that functions in a participatory manner. Quality monitoring process has to operate at two levels. First level is to fix a benchmark of minimum quality standards without which institutions would be disallowed from operating. At the second level, the mechanism should help formulate a system of development incentives for institutions to improve their standards of functioning taking note of equity considerations. However, there is no justification in allowing for substandard institutions in poorer regions in the name of equity. Rather, they have to be of better quality in order to compensate for the socio-economic handicaps that the students come with. .

5.11 Modernization and quality improvement would definitely require upgradation of infrastructure in the institutions. In the developed world, the higher education system was the first to introduce ICT. Unfortunately, the higher education institutions in the country are even worse than many of the schools in this respect. It should be noted that the future knowledge-based economy would require every one to be IT enabled. Merely establishing courses in IT will create a small elite section within the State but will not take the state forward as a whole. Rather, it will deepen the digital divide. Therefore, government has to give immediate attention to upgradation of IT infrastructure in colleges and universities. Attention should be given to integrating transaction of curriculum with IT facilities, not just use it as an addendum for the sake of giving computer literacy.

Refocusing Government spending in higher education

5.12 Currently, most colleges just subsist, and very few develop in terms of the quality of infrastructure and instructional facilities. This is mainly because of the current approach of decreasing funding to higher education. This will prove to be counter-productive and likely to harm economic development of the state in the long run. The state has to invest in development of higher education. With constraints of funds, it is necessary to spend in a strategic fashion that would create assets and not liabilities. The government has to articulate policy on “where and how to spend strategically” in higher education. Currently there is no clearly defined policy. Different yardsticks are adopted in spending in government colleges and private ones. Money is spent only on maintenance of government institutions and providing grants-in-aid. Neither of this involves any development planning and barely meets even maintenance requirements, the effect of which is that the assets have become liabilities to the state.

5.13 The state has to clearly define its role vis-à-vis the private sector in higher education – what the government will do and what is expected of the private sector. There is a feeling that if government does not open new colleges, poor students will be affected. This needs more in-depth examination. Available data reveals that most of the poorer students do not enter higher education at all. In a recent survey, it was found that “virtually no person from the poorest quintile, either male or female, in urban or rural areas, had completed higher education. Again, by contrast, about one-half of the richest 24 year olds in urban areas and about 30 percent in both rural and urban areas combined had completed higher education.”¹⁶ Therefore, it is not the fees charged in college or the non-availability of government colleges that is coming in the way of enabling poor students to get higher education. It is the poor quality of education provided across the levels which restricts their entry to higher education institutions. The subsector study also pointed out that the share of SC/ST enrolment has increased only marginally from 16.73 percent in 1991-92 to 17.81 in 1999-2000. Government should rather focus on direct support to poorer students through more liberal provision of fellowships, not on opening more colleges and employing additional teachers which would involve recurring costs. After such students are routinely identified they should be given special consideration as regards admission to technical institutions.

5.14 Private institutions may not function under government control, but they are, nevertheless, assets for the state created through public contributions. Nurturing those assets is no less important than spending on maintenance of government institutions. Thus, targets for investment should be defined in a broad manner that includes support to private institutions. Second, government has to reduce expenditure on recurring costs and support more of capital and developmental costs. Colleges should be encouraged to bear recurring costs mainly through private contributions from users and other sources. This could be supplemented wherever necessary through direct support to students. The focus of Government investment has to be on enhancement of quality inputs that add value to the instructional transaction in the institutions, namely on such assets as libraries and laboratories. Each institution may be required for this purpose to operate with the help of an Institutional Development Plan. Support could be linked to such plans being effectively implemented and accountability framework put in place.

5.15 This does not mean that Government should not invest in institution building. In fact, this would be essential as private investments would invariably be guided by market considerations and, therefore, would be often based on short-term considerations. Government investments could be targeted with a two-fold perspective – preservation and development of language, culture and so on which cannot be left to the market; and creating centres of excellence that constantly move to explore new frontiers and act as think tanks for different aspects of social, economic and technological development.

Encouraging Non-institutionalised learning

5.16 One of the fastest growing sectors in the world today is open and distance learning facilities. More and more people are accessing higher education the world over through these means. Even in Karnataka, provision of general higher education through distance education

¹⁶ Sajitha Bashir, *Karnataka – Expanding and strengthening the education sector in the context of economic restructuring: financing requirements*, World Bank, New Delhi, 2001.

has expanded significantly during the last decade. Such courses are offered currently through Mysore and Bangalore Universities and the Karnataka State Open University. It is necessary to give adequate attention to these means of spreading higher education. Again, the State government has to formulate a clear policy to guide the development and use of these virtual means of providing higher education. In the long run, they could prove to be effective means of saving the cost of expansion and redirecting resources for quality improvement. But this again has to be done carefully in order not to distort the balance between on-campus learning and distance learning mechanisms.

VI. State Government and Higher Education: Need to redefine the relationship

6.1 An underlying emphasis that runs through all the points highlighted in this section is that the government has to be proactive. It has responsibility to ensure that higher education in the state meets social needs and aspirations. The government has to provide external stimulus for change in the system and in particular for the institutions delivering education to ensure that they change and become more accountable to the people they serve, and norms and standards of quality are maintained. Government's role is especially important in introducing changes in the way universities function and respond to the changing demands and requirements of the economy.

6.2 More money will be required to finance a programme of reform. Therefore, government expenditure will need to increase. But increases in expenditure should be contingent on restructuring current spending pattern, and ensuring that it is directed at implementing different elements of the reform programme, would cumulatively work towards achieving strategic goals of quantity and equity and lead to assessable changes in the system. The approach to investment in the sector should also encourage savings by reducing the enormous wastage and inefficiency in the system.

6.3 While encouraging the private sector to participate in the development of the system, it is important to reduce fragmentation of private spending that leads to sub-optimal size and duplication of efforts. It is worthwhile to encourage users (employers) to contribute not just by setting up colleges, but also by enabling them to contribute to system level changes. For this, the government and universities have to accept private sector institutions as important partners working for a common interest. One way of encouraging such initiatives is to set up an Innovation Fund with multiple sources of funding administered jointly by government, private sector and independent professionals.

VII. Technical Education: Issues and Strategies

7.1 As already mentioned, Technical Education in Karnataka has witnessed a phenomenal growth during the last few years. As the subsector study on technical education reports, the first spurt in engineering colleges came between 1981 and 1985 when the number increased from 35 to 50. By the year 2000, this number had gone up to 65. However, an unprecedented growth came in 2001 when 40 more engineering colleges were added. It is, however, important to note that the increase is mainly in the private unaided sector. At present 80% of the institutions are in the private sector contributing around 76% to the total intake of students. Corresponding to this increase in the number of institutions, total enrolment also grew from around 20,000 in 1996 to nearly 30,000 in 2000-01 and is around 34,903 in 2001-

02.¹⁷ A major part of this increase came from the streams related to the Information Technology sector. It is well known that this has, in more than one way, contributed to Karnataka becoming the main hub for IT activities in the country. Also, it is recognized that much of this increase in capacity came through private initiative. However, this sudden boom has also given rise to a number of issues that the government has to sort out. Some of these issues have major recursions not only for the technical education sector but also for the development of the whole tertiary education system in Karnataka.

Capacity vs. Demand

7.2 As already mentioned, there has been a phenomenal growth in the supply position, namely, capacity expansion in the engineering college sector over the period 1996-2001. Against a capacity of 34,900 there were 115,826 applicants (65,093 from Karnataka and 50,733 from outside Karnataka) seeking admission to engineering colleges during the year 2001-2002. During the year 2000-2001 there was an unutilized capacity of 2958 against a total of 29,800 seats. With an increased capacity of 34,900 seats, there are 3566 seats vacant during the year 2001-2002. This indicates that the supply or capacity created in the State of Karnataka for engineering degree education is meeting the required demand. However, these simple statistics does not explain the exact demand-supply imbalances. During the year 2000-2001, the net total capacity was 29,779 and 2958 seats were unutilized. But the demand was in excess of supply in case of Information Technology and Electronics disciplines. Further, there is also an unfulfilled demand in the urban sector and in institutions which are perceived to be good by aspirants. Hence, the unutilized capacity can be attributed to distribution geographically and discipline-wise in creation of capacity. The data during the past one or two years shows a capacity in excess of demand. Statistics show that the projected shortage of engineers in some of the traditional disciplines where the demand is less than capacity may change in view of the proposed capital outlay in Government and private sectors. For example, in road and transport sectors there is a projected demand for civil engineers. One could take the position that the sector is just responding to the market forces and will stabilize on its own. But, this may prove to be damaging for the development of stable educational facilities in the state. It is necessary that Government takes a closer look at the implications of the emerging mis-match between capacity and demand and also of the imbalances in the number graduating with different specializations vis-à-vis the world of work.

Addressing the Issue of Equity

7.3 Regarding the issue of social equity even though the capacity is provided in the form of statutory reservations, some capacity goes unfilled. (During 2001-2002, in 2671 seats reserved for SC candidates, 1315 were admitted and in 635 seats reserved for ST candidates, 485 admitted). This means that there is a need for devising enabling mechanisms to improve better capacity utilisation meant for achieving social equity.

7.4 With regard to geographical disparities, it has been found that nearly 50% of the institutions of Karnataka are located in metropolitan cities (mainly in Bangalore). This kind of geographical bias may be on account of lack of accessibility of the rural sector to the world of work. However, this has resulted in considerable regional imbalances and is likely to make institutions in the rural area economically unviable. Hence, there is a need to tackle this regional imbalance through a well-designed intervention by the Government in colleges functioning in rural areas.

Distortion in the Feeder System

¹⁷ Source: Annual Administration Reports 1996-97, 1997-98, 1998 -99, 1999-2000 (draft) of DTE Bangalore and data collected from DTE's office for 2000 - 01

7.5 A large number of students passing higher secondary examination in science (about 100,000) seek admission to engineering education, though a large proportion of them are from outside Karnataka. With an expansion in the capacity of engineering education, a large number of students from the pre-university system enter the professional education system. This has led to depletion in the number of candidates seeking degree level education in science and other branches of knowledge. In fact, in many first grade colleges offering science subjects, the capacity utilisation is very low. This is causing concern in developing basic science programmes which in turn affects the quality of technical education in the long run.

Interface with the World of Work: Need for relevance and quality

7.6 One issue of relevance in recent years is the sudden boom in Information Technology, which has raised the demand for IT-related professionals. The projected demand for software professionals in the IT sector by the year 2008 is estimated at 2.6 to 3.7 million (as per the NASSCOM-McKinsey study and Govt. of India estimates). This sudden demand has led to an increase in intake in IT-related branches in engineering colleges. What happens to engineering graduates from Karnataka colleges? This is an important issue in determining the future course of action related to IT as well as other disciplines in the colleges. It is found that the private sector is the largest employer of engineers and technicians and this trend is likely to continue with greater share of employment by the private sector due to liberalization and privatization policies pursued by the central and state government.

7.7 However, it is difficult to get an exact picture of employment based on different specializations. Percentage employed in private sector ranges from 40% to 70% in case of post-graduates, 53% to 95% in case of graduates. Geo-technical Engineering, Production Management, Materials Engineering, Bio-medical Engineering are the disciplines in which post graduates are employed in good numbers by the private sector. Metallurgy, Textiles, Architecture, Chemical Engineering, Electronics & Communication Engineering, Industrial Production, Instrumentation Technology, Computer Science and Mechanical Engineering are the disciplines in which the graduates are employed in a large number of private sector. In November 2000, there were 301 postgraduates, 13,496 graduates and 42,346 diploma holders in engineering, registered with the Employment Department of the Govt. of Karnataka. Unemployment was considerable in the civil, electrical, and mechanical disciplines. A study of the 1977 batch revealed that 83% of post graduates, 80% of graduates and 79% Diploma holders got their first paid jobs within one year, with most of the remaining getting absorbed within 18 months. Some engineering colleges and polytechnics have started industry-institute-interaction cells towards bringing about greater relevance and quality of education and training better suited to the requirements of industry. These institutions have been holding several continuing education programmes. This is an area that needs careful examination so that the increased enrolment does not lead to surfeit of professionals who are not absorbed by the world of work.

Meeting Quality Concerns

7.8 One often hears about encouraging the export of educational services. Invariably, the reference is to the spare capacity developed in technical education institutions. But, any export can be successful only when it is of international quality. Do we have international

quality institutions in Karnataka? Rather, one quite frequently comes across complaints of poor quality institutions. It is important that the Government examine the factors that adversely affect quality and initiate appropriate action.

7.9 There are many factors which are adversely affecting the quality of engineers coming out of an institution. Some of these are:

1. Varying quality of students at entry- admission of students from various social strata of society, which is a policy of the Government to provide social equity.
2. Quality of curriculum : AICTE has set norms for this. However, the current curriculum is subject-centred and supply-driven, not competency-based. Relevance of curriculum to meet industry requirement is questionable. Most curricula are rigid. The response time for need-based curriculum and the mechanism to do it is not in place.
3. Lack of sufficient number of faculty with higher qualifications: There is a shortage of 25% - especially in IT-related courses. The non-availability of faculty and its poor quality are major concerns. There is no organized training for support staff. Availability and use of IT. is another key factor quality. Hardly 30% colleges use IT. extensively in teaching.
4. Lack of infrastructure- buildings, equipment, library, and student amenities, etc. AICTE specifies norms on land, area of buildings, staff and other infrastructure for engineering colleges and polytechnics. AICTE has grant schemes such as modernization and Thrust Area programmes for colleges and polytechnics.

7.12 It is not that there are no mechanisms for quality monitoring in technical education. The AICTE has laid down the norms and standards for engineering colleges and polytechnics. The norms are available for land, buildings, library, and computer centre, laboratories and workshop equipment. Norms are also given for the staff: student ratio and non-teaching staff. Being a statutory body, vested with the regulation of technical education in the country, AICTE, through its monitoring mechanism, generally ensures these norms in the technical institutions. But these serve as only the hardware requirements of quality. These do not answer the requirement of a healthy regulatory mechanism, wherein the role of each stake holder in the process, viz., the management, university, faculty, staff, students, parents, employers, etc. is clearly defined. In order to strengthen this aspect, the National Board of Accreditation has been set up by AICTE as the authority to certify engineering colleges. However, so far, only two engineering colleges in Karnataka have been accredited by N.B.A. With the overwhelming demand in the market for engineers, strict quality monitoring has taken a back seat. But in the long run, action has to be initiated to ensure that the institutions are of high quality through suitable monitoring mechanisms within the state. This as already argued under the previous section, demands a different framework of intuitional management with greater autonomy to the colleges. On all counts, it is clear that accountability cannot be enforced without decentralizing management fully to the individual institutions.

Ensuring the Financial Viability of Private Institutions

7.11 Karnataka Government has promoted the growth of private colleges in an unprecedented manner. However, an important aspect of enabling private sector participation is the financial viability of the institution. This issue needs to be holistically addressed by taking into consideration the actual running and developmental expenditure for providing quality technical education. A recent study has revealed that the cost of providing degree level engineering education in Karnataka is of the order of Rs.35, 000 per student per year. Case studies of self-financing engineering colleges have found that it will take at least 4-5 years for these institutions to break even with an intake of 400 students. The managements of these institutions will have to make an investment upto Rs.150 million on land, buildings and equipment from their own resources. It is worthwhile examining the possibility of a more permanent enabling mechanism, possibly in the form of a Bank, on the lines of IDBI, SIDBI, etc. The financial policy of the Government of India has enabled most of the nationalized banks to offer loans of up to Rs.300,000 for students pursuing professional education and this base could be broadened to extend it to set up and run engineering colleges and polytechnics

Defining the role of the Government in Technical Education

7.12 Though private initiative in technical education expanded quite significantly during recent years, there is no clear policy perspective on the exact role that government would play and the expectations from the private sector. In the year 2001, out of about 100 engineering colleges in Karnataka, 80 colleges belonged to the private, self-financing category. These colleges had a capacity of 22,400 out of a total capacity of 29,800 in the year 2000. Similarly 138 out of 186 polytechnics in Karnataka belonged to the private sector with an intake of 28,930 out of a total of 36,171. This means that there is a large scale private sector participation (around 80%) in Technical Education in Karnataka in terms of quantity. There are practically no Government engineering colleges, with an exception of SKSJTI, KREC and the two University Engineering colleges. There are 9 aided engineering colleges run by private trusts, which are receiving the maintenance grants from the Government of Karnataka under its Grant-in-Aid code. The issue is whether the Karnataka Government should remain a mere spectator or should the government play a proactive role in the development of technical education in the state. It is worthwhile here to note that Government of India has set up the IIT's and Regional Engineering Colleges as model benchmark institutions for providing technical education in the country. Government may examine the scope for supporting selected institutions in the state to develop institutions of excellence, which will produce quality engineering graduates catering to the needs of the world of work. These institutions will also act as benchmarking in building quality into a large number of private self-financing institutions.

VIII. Some Broader Issues concerning Tertiary Education

Need for a Holistic Policy on Tertiary Education

8.1 The tertiary education system has expanded rapidly during the last decade in Karnataka. This has brought many positive effects to the system. One important feature is the effective utilization of private resources for expanding facilities. It has also improved access to higher education for rural students. Finally, it has definitely made a significant impact on the socio-economic development of Karnataka. But what has been the role of the Government? Though effort has been made to streamline admission to technical education institutions, by and large,

the approach has been one of an enthusiastic and vigilant spectator allowing for the market forces to operate practically unbridled. This approach has had its negative effect on the system. For instance, expansion of technical education has affected enrolment in general, higher education, especially in science courses with serious consequences for the higher education sector and possibly even on the supply of teachers to the secondary education sector. In general, there has been lack of attention to quality. The poor quality of higher education affects in particular the quality of teachers for lower levels of education. Higher education is too important an investment for the government to remain only a spectator. The need at the present moment is to formulate a holistic policy perspective for the development of higher education in Karnataka taking both general and technical education into an integrated framework. It is essential that we do not carry a fragmented vision of development for general and technical education. Formulating a policy does not imply control and regulation of the sector by the Government. A policy framework is essential even to promote growth of the sector with future goals of development in view. A policy framework is needed for smoothening the unevenness that is likely to emerge in the free play of market forces and to ensure that concerns for equity and quality are not sacrificed.

Invest in Quality Improvement

8.2 It is generally assumed that there is always a quality-quantity trade-off. Under this assumption, lack of attention to quality concerns is justified as an inevitable fallout of expansion. Whether such an assumption is valid or not, the reality is that the system has to currently contend with many substandard institutions. Can such institutions really add value to the development process? Rather the system is likely to be trapped in a self-perpetuating cycle, low quality products spreading low quality inputs to the system. In fact, the education set up in Karnataka will soon face such a vicious cycle if not corrected immediately. Therefore, strategic investment in quality improvement of the tertiary education system should be considered for top priority action. For this, the Government could act on three fronts.

8.3 The first set of actions is to formulate minimum standards – infra-structure and academic facilities - for operating higher education institutions. This is the right time to move in this direction as the state has witnessed a large scale expansion both in general and technical education sectors and it is necessary to consolidate the gains made through creation of additional place and enhanced enrolment. But quality improvement cannot be done merely by chastising institutions and possibly punishing them through derecognition. This has to be done carefully through a combination of support and control. Establishing a suitable mechanism to implement this delicate but is crucial important task.

8.4 A second area to invest is in promoting selected institutions as centres of excellence which could act as benchmarks and models for further improvement. They should also become the nuclei for innovation and experimentation. In this we have to be guided by international standards and practices. The UGC has provision for promoting such institutions of excellence through financial support which could become the beginning point for promoting such institutions. But the state government has invariably treated this purely as a matter between the concerned institution and the UGC. Such an indifferent approach has to be replaced by a more proactive policy by the State Government. Karnataka is fortunate in having some outstanding institutions such as the Indian Institute of Science, National Law School, and Indian Institute of Management. These institutions could have become the springboard for launching further efforts to build institutions of excellence in the state. But

unfortunately, the interface between these institutions and the main stream higher education system in the state is very minimal. Further, these institutions are all located in Bangalore just as the industrial development activity of the state is. It is for the state government to take a more proactive role in promoting similar leading institutions in different parts of the state which could in turn spur economic development activities.

8.5 The third area is to invest in capacity building for the creation of world class human resources in the higher education institutions of the state. It is well-known that good institutions are made up of good teachers. Other aspects are secondary. However, this is an area which has received very little attention by the national as well as any of the state governments. Mere establishment of Academic Staff Colleges will serve very little purpose. Capacity building of teachers in higher education means more than training in pedagogy. They need better facilities for research and should have access and exposure to the global developments in their specialization. Investing in professional development of teachers through such facilities will have a multiplier effect by directly impacting the quality of the output. This will make Karnataka the destination for students from different parts of the country not because of the additional seats available but because of the quality of education offered.

Invest in Research and Development

8.6 In a global economy, knowledge is the key factor for growth and development. Creation of new knowledge and applications has become the central feature enhancing the competitive edge of society. No country has developed by simply depending on knowledge and applications developed by others. In the future knowledge-based society, it is investment in intangibles such as R&D, IPR and quality of higher education and training that will determine the pace of development more than investment in the physical equipment of production. It is time that Karnataka wakes up to this reality. If one makes an international comparison, in 1996, OECD countries accounted for 85% of worldwide R&D investment; China, India, Brazil, and East Asia represented collectively 11%, and the rest of the world only 4%. The approach has to be one of creating a vicious cycle in which the benefits of research help produce the wealth and public support needed to continue investing in R&D.¹⁸

An overarching body for coordinated development of tertiary education in the State

8.7 Experience shows that, unlike the school education sector where the government is a major player, it is difficult for the State to influence developments in higher education in a significant manner. However, the state cannot remain a mere spectator, nor should it become a regulator. Therefore, if the tertiary education sector has to become the engine for growth and means of generating innovation, it is worthwhile to examine the possibility of creating an independent institutional arrangement. The proposal made by the National Policy on Education 1986 was to set up a State Council of Higher Education. One could also examine international experiences in this regard. Some countries have established statutory commissions for evolving and implementing development policies in higher education. Whatever be the nature of such a body it appears that Karnataka has to create a suitable mechanism to steer the growth of the tertiary education sector with a long term vision.

¹⁸ Constructing Knowledge Societies: New challenges for Tertiary Education, Draft Report, World Bank, New Delhi, 2001.

CHAPTER 6

Governance of Education and Institutional Arrangements

I. Introduction

The previous chapters have dealt with the various subsectors of education in Karnataka, identifying critical issues and proposing possible strategies to address various issues. The problems and issues identified are not altogether new. Some of the strategies have been put forth earlier in different forms. In fact, several of these strategies may have already been tried out under different projects and programmes. Why have they not made significant impact on the functioning of the system? Why have they not cumulatively transformed the system into a more vibrant and responsive one? The answer to these questions is not entirely unknown – it lies in the way the system is governed; programmes are managed; and institutional arrangements function. It is obvious that reforming these aspects and creating a favourable and flexible management environment holds the key to successful implementation of innovations and change processes in the whole system. This chapter attempts to highlight some of the critical reform measures to be initiated with respect to governance of education and changes to be brought in the existing institutional arrangements.

The recommendations in this chapter have been derived to a great extent from the empirical analysis carried out as part of the education sub-sector studies already referred to. These recommendations largely reinforce the reform measures recommended by the Education Task Force and the Administrative Reforms Commission; the latter has emphasized five basic principles, namely, good governance, new work culture, transparency, accountability and professionalism. The observations in this chapter mainly refer to the school education sub-sector, partly because some of the relevant measures for reorganization or refocusing of management in the higher education sector have already been indicated in Chapter V. However, this chapter does include a section on creating institutional arrangements for shaping the development of the sector. The focus of the chapter has been on practicable measures that can be implemented in the medium term, although further operational details have to be worked out.

Changing the system of governance is not a matter of changing the rules and procedures of operation. It involves changing the system of mutual relationships between the managing authorities and institutions where education occurs. Overall, the guiding principles of introducing change in governance are to ensure that the goals of education reform are met; that focus is on results; there is flexibility in means of ; that each body and institution is accountable for delivering pre-specified results; institutions are empowered with the authority to act and deliver those results.

II. *Decentralization of Educational Management*: The administrative system for education has grown enormously over the last few decades both horizontally and vertically. With more and more layers being added, the vertical linkages have become stronger and more entrenched while horizontal linkages have remained weak. Expansion of the system should have meant much greater authority being placed in the hands of the lower level administrators. But the continued emphasis on strong and rigid vertical linkages at all administrative levels has led to a hierarchical chain of decision-making and reporting. Lack of formal and flexible horizontal linkages has meant no interdependence, and also the

duplication of control and efforts at certain levels.¹⁹ There is an urgent need to deconcentrate powers and authority from the higher levels and empower the peripheral units of management. This is important in the context of two recent moves by the Government – empowerment of the panchayati raj institutions at the district level with respect to education management and the creation of an School Development and Monitoring Committee in each school as an empowered body. But, such decentralization measures have to be accompanied by a serious exercise of redefining the powers and responsibilities of the personnel at various levels and a strong move to change the hierarchical decision-making structure.

The core of the education system is its teachers. Therefore, decentralization measures will have a direct impact on teacher recruitment and management issues. In particular, implications of transferring authority to the local bodies for appointing teachers and to the SDMCs for overseeing the functioning of the teachers would have long-term implications on service rules and career advancement prospects. This aspect has to be carefully looked into in reorganizing the management system.

III. Empowering Institutions and Promoting Accountability: Long hierarchy is also inimical to building an efficient and accountable system of management. In this context it is worthwhile considering the emerging trend in many developed countries where a practically bimodal system of educational management is emerging. Many countries are beginning to significantly reduce the levels and personnel between the Government and the School. Some have even completely disbanded all levels by holding empowered school governing boards directly responsible to the Government. Whether Karnataka government should really begin dismantling certain levels of the hierarchy, and if so which levels, requires in-depth study to determine the work involved and the essentiality of the level. It is important to capture the spirit behind such moves to enhance the sense of responsibility of the administrator to the stakeholders. However, it is clear that keeping the hierarchy intact is less likely to allow freedom for the lower level personnel particularly as they have been used to just implementing orders from above. Without the perceived freedom to act, it is not possible to instill accountability.

An important recommendation of the Task force which has been accepted by the government and is already under implementation is to empower schools for self-management through the establishment of School Development and Monitoring Committees. This is essentially a move to shift accountability to the immediate stakeholders from the standard practice of following orders from above. In fact, reports from the field reveal that the move has been very well received at the grass roots level. But, in the long run, the success of this move would depend on several reform processes if the SDMCs are not to remain ineffective monitoring committees with no development function. The first requirement is that each school has to be treated as a unit for development planning. This implies as already proposed in the Task force Report that each school prepares a School Development Plan. This is of course a bit tricky with a very large number of small schools. The task may have to be carried out at two levels. While in the case of relatively large schools there should be insistence on developing independent institutional plans, planning may be done for smaller schools through clusters, in the form of cluster development plans. The second requirement is to gradually move towards providing direct funding to schools/clusters using the development plans as

¹⁹ Jyotsna Jha, K.B.C. Saxena and C.V. Baxi, *Management Practices in Elementary Education: A study of existing practices in selected states in India*, The European Commission, New Delhi 2001, p.19

instruments for planned progress as well as a means of accountability building. At present there is no system of budget preparation at the school level and therefore no reflection of the development needs of the institution. The third requirement is that the roles of the administrative unit immediately above the school or cluster, i.e., the Block Education Office, have to undergo a drastic revision. In the long term, existing sub-district levels have to convert themselves into resource organizations instead of administrative units. In fact, the Karnataka government has already moved in this direction by doing away with the posts of supervisors placed at the block level. The fourth requirement would be to create a system of independent evaluation of school performance using the school development plan as the basis. What could be the shape of such an organization for quality monitoring has been described separately.

IV. Establishing a system of assessing school quality: The colonial system of educational administration generally consisted of three independent wings: the secretariat whose main concern was policy making and provision of finances; the directorate which dealt with issues of setting norms for functioning, monitoring implementation of state policies and programmes and management of personnel; and the third wing, namely, the inspectorate whose responsibility was to maintain quality in schools through appropriate support and supervision activities. An important feature of this setup was that the three wings worked fairly independently and complemented each other. However, with reorganization of the system at various points of time, the inspection mechanism expanded in size but became a subordinate function of the Directorate. For instance, inspecting staff for the elementary stage function under the control of the BEO and those dealing with the secondary stage are under the control of the district level officer. It is well documented that the inspection mechanism was not effective at all and this was reflected in the poor quality functioning of the schools. Responding to such observations, the Karnataka government has contemplated disbanding the cadre of inspectors for primary schools, which has also been endorsed by the ARC Report. However, the system of school inspection and supervision cannot altogether be done away with. There is, therefore, a need for establishing an independent Standards and Quality Maintenance Organization for assessing and improving school quality at both elementary and secondary levels.

Creation of such an organization has also been suggested by the ARC report. Such an arrangement is fully in line with the idea of decentralization and school-based management. Many developed countries have adopted this model with considerable success in recent years. For instance, the Office of Standards in Education (OFSTED) in the UK functions as an independent organization benchmarking quality of schools through a rigorous process of school inspection and evaluation. The organization is a sleek body which uses the services of accredited groups of professionals for inspection work. The nature of such an organization in Karnataka has to be determined based on the nature and spread of schools, availability of professionals within and outside the Education Department and through necessary confidence- building measures with teacher groups and private management representatives. This should also be examined in the context of suggestions made below for repositioning DSERT as the apex professional organization concerned with curriculum studies. It should be possible to carve out such an organization, at least partially, as an independent body from the existing DSERT set up which, in any case, has quality improvement in school education as one of its major functions. It is important to note that establishment of such an organization would not only replace the dysfunctional system of inspection but it would also introduce a framework of accountability bringing institutional effectiveness into focus.

V. Restructuring DSERT: A reference has already been made in an earlier chapter to the need for reconfiguring SCERT into a Centre for Curriculum Development, Textbooks and Research. Creation of such an institution with a clearly defined goal and function is valuable in several ways. First, it will help the organization to become more efficient and goal oriented; currently, as described earlier, DSERT functions as an omnibus organization with an ever-expanding set of roles and responsibilities. Neither is the strength of the professionals in the organization recognized nor are they allowed to develop specialized skills in any area. Second, and perhaps more important, value is that it would ensure consistent and research based orientation to the vital area of curriculum making and textbook preparation. Currently, it has tended to become a somewhat routine activity. More focused attention and improving the quality of material produced through research support will also help reverse the public perception that schools following the curriculum and textbooks of the Karnataka State Board are inferior to those affiliated to the CBSE. Third, it would help to focus more attention on school quality and upgrading the curricular knowledge of the teachers through designing appropriate packages. Currently, the in-service teacher education activities of the DSERT attempt to cover, though in a sporadic manner, a wide variety of general pedagogic skills and specialized areas of knowledge. The proposed Centre would still be, following the recommendation of the Task Force, an autonomous body drawing expertise from inside and outside the state in the area of school curriculum. Yet, it will have to function within the broad framework of the Department so that the policy perspectives and needs of the state are constantly kept in view.

Creation of such a Centre as an academic organization devoted to curriculum research and textbook preparation would have two important ramifications. The first of these relates to textbook provision. At present, DSERT is responsible not only for preparation of textbooks but also for ensuring that they are produced in adequate numbers and reach the students in time. These tasks are essentially logistical and administrative in nature. In many states, this task has been separated from the academic aspect of textbook preparation. Karnataka could also adopt such a model by establishing a Textbook Corporation or a Textbook Society as proposed by the Task Force. The Society would be responsible for all the activities involved including printing and distribution of textbooks. The Centre will be responsible only for preparing the textbook prototype in the manuscript form. The Society which would function as an 'enterprise' and not as a subordinate wing of the Department would also actively promote preparation and publication of educational material useful for students, teachers and parents.

The second implication of establishing the Centre would be on the organization of in-service teacher education which is also the responsibility of the DSERT, at present. As already suggested in the section on teacher education, the new Centre would limit itself to preparing training packages which directly relate to curricular innovations; the Centre would also conduct training of trainers for transacting the packages, if necessary. Actual transaction of such packages and also imparting in-service training in pedagogical aspects should be done through the existing network of teacher training institutions and NGOs. The current practice of maintaining separate staff for in-service training does not work efficiently. Instead, DIETS as well as other organizations including private teacher training institutions could be contracted on a task-specific basis to deliver training programmes. This would encourage dedicated individuals and institutions to emerge as centres of in-service training

based on their quality work and relieve the government of maintaining permanent staff with recurring cost for this purpose.

VI. *Restructuring Management of Secondary Education*: Karnataka was one of the first states to adopt the 10+2+3 system of education which has become the standard throughout the country. This implied 12 years of schooling, which could be followed by three years of collegiate education leading to the first degree. In the framework, +2 stage was indicated separately as it would involve diversification of studies and more importantly could become terminal to a large number through vocational courses. It was, however, realized that the switch over to 12 years of schooling has to be done gradually, as delinking the intermediate classes from the university set up would take some time. As an interim measure, many states, including Karnataka, created pre-university sections to be merged with the school education system as higher secondary stage, in a time bound fashion. Almost the whole country has been able to establish such an integrated schooling system of 12 years. Twelve years of school education is also comparable with the length of schooling in most of the developed countries. But this has remained an unfinished task in Karnataka leading to a number of anomalies.

Recognizing the need to reform this situation, the government has already taken the first step of delinking the pre-university classes from collegiate education. It is necessary to take the next step of integrating the classes with secondary schooling as 'higher secondary stage'. This would in effect imply the merger of the two examining bodies – one dealing with the 10th grade and the other with 2nd PUC. Currently, the PU Board essentially functions as the examining body exclusively for the two-year programme. Merging of the two into one examining body is in line with the national practice and the practice in most other states. At the national level, the CBSE conducts examinations for both 10th (secondary) and 12th (higher secondary) grades. Such a merger would also have other advantages. At present many PU sections function as stand alone units and are, therefore, unviable for creating top quality facilities such as libraries and laboratories. Attachment of the sections to the secondary schools will not only make them viable but also benefit students at the secondary level. Further, this would also be the right step in the context of the decision to move class VIII to the elementary stage. Government may decide on a time frame and a transition framework to ensure that transfer/absorption of teachers in the new set up and also of students from independent PU colleges to secondary school premises is smooth.

VII. *Capacity Building of Education Professionals*: In the final analysis, the performance of the education system will depend on the quality of the human resources managing the system. This, in turn, depends on the quality of the people entering the service and more importantly on the opportunities available for capacity building while in service. At present, one can enter the administrative cadre in Karnataka either through the Karnataka Education Service, appointed directly as a secondary school headmaster or through the promotion of teachers in high schools. Though, promotion is relatively faster for those entering the service directly in administrative posts, reaching higher level leadership positions comes at the end of their career. This is partly because promotions are based almost exclusively on seniority of service and the availability of positions. Discussions with senior officials revealed that this approach acts as a serious disincentive for innovative work and leadership in implementing change processes. As reported in a recent study comparing the situation in different states of the country, "Karnataka has the advantage of having highly qualified personnel at district and block levels because of its policy of posting high ranking officials at lower levels of

administrative units. The administration is also well placed in terms of facilities. The field interactions suggested that many of the educational administrators want a change in the bureaucratic functioning and are inclined to adopt new managerial practices for improved functioning and delivery.”²⁰ What is needed is to convert this advantage into an instrument of change and progress.

For this to happen, we believe the Government has to act on two fronts. First, there is a need to reexamine the current procedure for recruiting people to the administrative cadre accommodating the entry of younger professionals at such levels that the system benefits from their ideas before they get rusted. Promotional procedures need to be made more performance linked not purely seniority based. We cannot build a modern system of education with an archaic system of recruitment and promotion. The second relates to what happens after the individual enters the administrative cadre. At present, very little opportunity is available for younger professionals in the service to improve their knowledge and skill base. A young headmaster never gets to see anything outside his or her own school. Even for senior administrators this is limited only to attending meetings and occasional seminars in Delhi or some other state capital on the instruction of the higher authorities. In order to build a vibrant management system, it is essential that the government prepare and implement a plan for building top class human resources for educational governance in the state with particular focus on management at various levels. The plan has to be comprehensive encompassing professionals at all levels beginning from the school to the highest level; it could also include potential leaders from among teachers. The mechanism for capacity building should also be various. Apart from organizing training within the state, it could also include internship in reputed organizations and fellowship support for higher management training. Support for creation of professional networking among interested individuals from within the system as well as outside could provide the much-needed interaction between scholars and researchers in education and educational administrators. There has been a move to establish a state level institute for educational planning and training with central assistance. While this is desirable, it is important to study the experience of other states and also to ensure that the government does not get saddled with another liability when central funds dry up. It is necessary to explore the possibility of promoting independent initiatives outside the government for this purpose.

VIII. Education Planning Group: Even a cursory analysis of the management acts²¹ at various levels and interactions with administrators indicates that governance has become essentially a combination of receptive mechanical acts of maintenance and emergency firefighting measures. This will hardly facilitate reaching the goals and visions for education articulated by the Government. It is ironical that though the state invests enormous amount of money on education, employing a very large number of personnel, there is no effort to systematically carry out development planning and policy-making exercises. Development projects in education, most of which are centrally sponsored schemes, remain invariably unattached to the mainstream implementation mechanisms. Even if some project planning is taking place in the state, it does not get integrated with operations in the mainstream. In effect, ‘planning for development’ does not find any place in the working of the education sector.

²⁰ Jyotsna Jha, K.B.C. Saxena and C.V. Baxi, Management Practices in Elementary Education: A study of existing practices in selected states in India, The European Commission, New Delhi 2001, p.71

²¹ The functional review carried out under the auspices of the Administrative Reforms Commission has alluded to this fact, but unfortunately, there are no in-depth empirical studies on this issue.

This is not to imply that there is no readiness to reflect on developmental issues at the state level. However, with the ever-burgeoning system, administrative responsibilities give very little time and scope for serious reflection on issues of development planning and policy making. This is an important issue in the context of the recent move of the government to adopt fiscal planning for the medium term and develop a five-year rolling plan (the Medium Term Fiscal Plan) for providing developmental inputs to the education sector. Efforts have been made in this connection to inject greater professionalism to the planning exercise. However, ad hoc committees and one time exercises may not suffice. There is an urgent need to build a long-term vision and evolve futuristic policy perspectives in the field of education, which has been highlighted in the Report of the Administrative Reforms Commission. There is, therefore, a need to create a high level Education Policy and Development Planning Group. What should be the nature and structure of such a group. Its location may have to be worked out. One can find a number of models operating in different countries – some formal and some informal. For instance, Thailand has a high power Commission on Education which continuously applies itself to the task of evolving new policies and perspectives for planning in the country. Some other countries depend on promoting a number of think tanks that generate new ideas and perspectives and feed the government with new development plans and projects. Whatever be the nature of the body, the core characteristic is that they operate as independent bodies supported but not controlled by the education ministry and draw upon inter-disciplinary professional resources available in the country. It is important at the present juncture for Karnataka to create a suitable organizational framework for providing technical and professional support and guidance on matters of education policy making and development planning.

It may be mentioned that over the last two years, Karnataka has succeeded in bringing together a body of professionals who have regularly interacted and provided inputs to the government on the development of the sector. This includes members of the Task Force, those associated with the conduct of the sub-sector studies and participants of a number of interaction sessions and workshops. Government should take proactive action to capitalize on these activities in a sustained manner.

As already mentioned, the proposals made in this section are not altogether new. They have only been rearticulated in a contextual fashion keeping in mind the analysis carried out through the subsector studies. What would it cost to implement these reform processes in the governance of education in Karnataka? No attempt has been made to assess the cost, but many of the proposals essentially involve reorganization of the existing structures and processes. In fact, many of them would help improve the efficiency of resource utilization. We believe that, as highlighted in the beginning, Karnataka is advantageously placed in many ways and increased expenditure has to be viewed as an investment for the future. Short-term problems of resource constraint must not deter us from planning for a better future for the children of Karnataka.

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**LIST OF SUB SECTOR STUDIES ON EDUCATION UNDER TAKEN
BY GOVERNMENT OF KARNATAKA**

<u>Name of the Study</u>	<u>Name of the Chief Consultant</u>
1. Education and Child Development	Smt. Lakshmi Krishnamurthy
2. Elementary Education	Sri.Vijaya Bhaskar
3. Secondary & PU Education	Sri. K.P. Surendranath
4. Teacher Education	Prof. T.K. Jayalakshmi
5. Collegiate Education	Dr. M.R. Narayana
6. Technical Education	Prof. M.H.Dhananjaya
7. Education & Equity	Dr. Ramesh Kanbargi
8. Structure & Functions of Educational Management and Decentralisation	Dr. A.S. Seetharamu
9. The Role of Pvt. Sector in Education	Prof. S.N. Prasad

The two studies under taken by **The World Bank** relating to Karnataka are as follows

1. Finance requirements.
2. Employment opportunities in **Labour Market** vis-a-vis **Education**.