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A B S T R A C T

This paper examines the programme of universalisation of elementary education and spell out its implications for enrolment, expenditure and teacher requirements upto year 2000. Resorting to rather simple calculations it pertains to only aggregate analysis at all India level and does not take into account intra-country as well as gender specific disparities. The upshot of the paper is to convey some idea about the quantitative magnitude of the task involved in universalization of elementary education. More importantly, it points out the on-going nature of the resource commitment and its future implications inherent in extending the coverage under the universalization programme.

PLANNING FOR UNIVERSALISATION OF ELEMENTARY EDUCATION AND ITS IMPLICATIONS

1. INTRODUCTION

Soon after the attainment of Independence, efforts were made to reorient the educational system to meet the growing demands of a planned economy. The relationship between education and development was recognized and in view of our commitment to social justice and equity, it was felt that equal access to education should be provided for all. It was in recognition of these objectives that universalization of elementary education (UEE)came to be recognized as a major goal of educational planning during the successive five year plans.

Of all the educational indicators which may be considered significant for educational planning, enrolment is perhaps the most important one. Since the beginning of human capital revolution, there have been a large number of studies dealing with this aspect of educational planning. The obvious reason being that it is on the magnitude and pattern of enrolment that most of the other key educational decisions/outcomes depend. Without going into the details of the subject, it is important here to recognize that we can interpret the size of enrolment in two different ways; firstly, as representing the demand for education and secondly as indicative of availability of capacity in the educational system. Further disaggregation of the variable in terms of sex and caste classified by rural-urban or regions or their behaviour over time are more a matter of fine detail which are not of immediate interest for our purpose. However, it is undoubtedly true that alternative scenarios of educational system and their implications can not be understood properly without having some idea about their distribution in the disaggregated form.

The size, composition and concentration of population are some of the crucial factors having long term bearing not only for educational planning but also for the size and the structure of the workforce. For example, a rapidly increasing population would definitely require fast expansion of educational infrastructure and the corresponding provision of other necessary inputs. This may have tremendous stress upon the resources for education. In case, the population expands at a rate higher than that of the enrolments, the magnitude of uncovered children may also continue to increase over time. Therefore, any

exercise in educational planning has to be undertaken with a clear understanding of not only the existing demographic situation but also of the likely changes therein. It is in this endeavour that the present paper deals with crude estimates of likely enrolments under different sets of demographic behaviour.

In other words, the rate of population growth, its age-structure and rural-urban distribution are some of the important aspects which are relevant for estimating the number of new entrants into an educational system. These being long term variables, have a lasting impact on the growth and performance of education, because, it is the size of the educational system and the type of education which is sought to be imparted in the school that determines to a large extent, the size of the educated workforce, its skill profiles, its productive efficiency and its ability to adapt to the changing technology. It is,therefore, necessary to plan for education carefully and rigorously. An important step in this direction is the projection and forecasting the behaviour of the system not only over a long period of time but also in the immediate future. Such an exercise about the likely educational scenario requires a reliable and comprehensive demographic data, which should be examined in as detailed a manner as possible.

The educational sector, with all its inadequacies, is expected to enroll all children in the school going age-group. The increased emphasis on girls education, the improved retention at different levels and the programmes of non-formal education are further expected to bring about a significant rise in the size of enrolments. These would in turn affect the flow of students from primary to secondary and from secondary to tertiary level of education.

In the light of these observations, the population projctions in general and estimation of the children in the 6-14 age-group in particular may be considered crucial for initiating exercises in educational planning. In view of enhanced emphasis on girls education, the sex-wise break-up of population becomes particularly important. Notwithstanding its significance, a cursory examination of literature reveals that the studies dealing with the analysis of relationships between demographic changes and enrolment patterns and the consequent implications on the flow of students among the different levels of the educational pyramid, though abundantly available for other countries are almost non-existent in the Indian context. It is, therefore, our endeavour here to undertake the following exercises in detail:

a) to present different alternative estimates of population projection and its age structure.

b) to derive alternate estimates of enrolment under different assumptions of population growth and enrolment behaviour.

c) to determine the financial requirements corresponding to alternative enrolment projections stated in (b) above.

d) to examine some policy and planning implications of the projection exercises.

2. POPULATION PROJECTIONS

The formulation of perspective plans for an economy pre-supposes the existence of precise information about some key demographic indicators. This is so in view of the fact that productive activities in an economy are usually oriented towards improving the quality of life of the masses. We have already highlighted the usefulness of demographic projections for educational planning. It is in this context that the estimation of the population size, its composition and spatial distribution has always been an area of major concern for policy planners and researchers. This becomes particularly important in developing countries like India, which are not only characterised by high growth rates of population, but are also accompanied by redistribution of population in space largely as a result of rural-urban migration. In fact a large body of demographers is actually engaged in research studies/projects relating to the estimation of different parameters determining the size and the extent of spatial re-distribution of the population.

In India, the actual data about the population size, its composition and spatial distribution alongwith related socio-economic characteristics are generated and made available to users through regular population census which is conducted every decade. The latest in this series being the population census of 1981. Based on the past population growth and the likely behaviour of other associated parameters, estimates of future population, its distribution in terms of age, sex and rural-urban character is derived. Broadly the methods used for this purpose fall in two categories:

(i) time based trend projections; and

(ii) projections derived with a given set of parameters with their likely behaviour over time.

The first type of methods may not always yield consistently stable results having wide acceptability particularly in countries like India, as the population behaviour is changing rather rapidly. It is unlike several developed countries which have now almost stabilized their population size. Consequently their behaviour is predictable with fairly high degree of accuracy. As compared to this, the methods of the second type, are more complex and require a comprehensive set of data not only about demographic aspects but also on related socio-economic characteristics. However, these can yield better estimates, which may be more accurate and sensitive to change in the socio-economic structure.

2.1 Comparative Statement of Population Projections:

While considering the population scenario in India, most of the organisations have been using the estimates provided by the Registrar General (Census Operations). With a view to prepare a long term national perspective, Government of India had appointed an 'Expert Committee' in 1977.[1] The population estimates worked out by this group formed the basis for formulating long term national perspective plan upto the year 2000. The estimates of final demand as well as individual sectoral perspectives were also based on these estimates of population. Education departments at the Union and State levels also used these estimates. In the meantime, the actual data has now become available for 1981. A comparison of estimates of the Expert Group with those of 1981 Census revealed that the 1977 projections (medium growth) were under-estimates to the tune of 2% for 1981, and by about 6% for the year 1996. In absolute terms, the difference between the two estimates was 13 millions and 52 millions respectively.

Like the previous attempts for population projections, the Census of 1981 also provided a basis for updating population projections for the country. Three estimates of population - high, medium and low were made.[2] All three variants of these projections have the same mortality assumption about the decline in the proportion of married females in the age group 15-44 years. Assumptions regarding the fertility rate are based on the proportion of couples in the reproducible age who are effectively protected. It may be useful to state the assumptions of these projections. These are:

a) The 'high' projections are based on the assumption that in future the proportion of "effectively protected" couples would remain at the level estimated to be in 1983-84.

b) The 'low' projections assume that the rate of "effectively protected" couples would increase at the rate of two per cent per year so that it reaches 60 per cent by the year 2000.

c) In the 'medium' projections the rate of effectively protected couples is assumed to increase linearly @ 1.3 per cent per annum.

The projected population for year 2001, based on these three different assumptions works out to be 1053, 991 and 959 millions respectively.

It is well known that, India, like many other developing countries, has not only witnessed high population growth during the last three decades but is also likely to register rapid increase in the near future. Without going here into the causes of such a rapid increase in the absolute size of the population it may be observed that the distribution of age specific population into male-female, rural-urban and among different social groups has also shown significant changes.

In addition to the growth in population, the proportion of population in the urban areas has increased from 17.62% in 1951 to nearly 23.7% in 1981. It is expected that by the year 2000 nearly one-third population will be residing in the urban areas.[3]

Similarly the age-specific data corresponding to 1981 Census show that nearly 40% of the population is concentrated in lower age-brackets, namely 0-14 years. The proportion of the population which is currently in the age-group 0-4 years constitutes about 14.2% and would hopefully be in the school system in the next five years. This bulge is likely to have an impact on the enrolment in schools during the next few years.

TABLE 1

AGE SPECIFIC POPULATION 6-11 YEARS : 1951-1981

Year	Total Population	ASP	%ASP TO Total
1951	361	44.5	12.33
1961	439	63.7	14.51
1971	548	74.7	13.63
1981	685	95.4*	13.93

* Estimated

GROWTH RATES : 1951-61 3.65 1961-71 1.74 1971-81 2.48
Source : Various Census Reports.

One of the major concern of the educational planner is to derive the annual estimate of the number of age-specific children so that their flow into different classes of the school system can be worked out under different asumptions of intake and retention ratios. We shall briefly discuss here methods of estimating the age-specific population in two cohorts (6-11 years and 11-14) which are of crucial importance for educational planning purposes. Once the enrolments at the primary stage have been estimated either by some normative measure (like UEE), or by trend method, or by flow methods, then it is easy to work out its flow through the education system by using the retention rates and/or inter-stage ratios. A number of alternative estimates can be derived by varying the assumptions either about the retention behaviour or inter-stage ratios. In the present paper, we have used both the methods for estimating the enrolments i.e., trend method and flow matrix method.

One simple way of estimating the age specific population(ASP) is to use the past pattern of growth. Table 1, provides the age-specific population (6-11 years) for the different Census periods. It is interesting to observe that the ASP has been growing at varying rates. Even comparing the ASP without adjusting for age Interval, similar problems about the growth rates persist. Fig. 1 presents the graphic patterns of age-specific population as provided by Table 1.[4] It is not difficult to conclude from the graphic presentation that the changes in the size of ASP are not only irregular but also show very steep ups and downs. It may be noted from Table 2 that during 1981-91, the age-specific population projections as brought out by RG shows a growth

rate of 0.79 per annum for age-group of 5-14 years. It further reveals that there is a sharp fall in the growth rate of 5-14 years age-group during 1981-91 period. Such a sharp fall, even if true, may not be same across regions. Consequently the structure of the age-pyramid as well the size of the total population would vary significantly from one region to another. This would have significant effect on planning for education especially in the context of UEE.

TABLE 2

GROWTH RATES OF AGE SPECIFIC POPULATION : 1961-2001

Period	0-4	0-14	5-14
1961-71	2.96	2.52	2.23
1971-81	0.98	1.67	2.11
1981-91*	0.95	0.89	0.79
1991-2001*	0.14	0.61	1.01

*Based on projections

It may be noted that the estimates for 1981 as derived by RG are based on 5% sample of the Census returns of the 20% area sample for 14 major states of the country. These estimates are available with age-interval of five years. It appears that after making suitable adjustments, the same data has been used in working out ASP during the subsequent years. The possible error in the distribution of population in the base year, would also affect the subsequent flow patterns.

It has even been observed in the document (Paper 1, 1984) that a large proportion of children in the age-group 0-4 had for some reason, been omitted in the Census count and consequently the obtained age distribution of children was distorted as unusually large number of children belonging possibly to the age-group 4-9, were reported in age-group 5-9. This is reflected in the concentration of children at ages 5 and 6 in the single year age data. In the corrections carried out by RG, the population in the age-group 5-9 had to be slightly reduced due to the transfer of persons to age group 0-4. From these group totals, the number of children in the single year age were estimated. In other words while no major changes were made in the age-groups 0-9, adjustments in both the constituent age groups had to be carried out.

In view of the factors described above and also due to wide variations in the decadal growth rates of ASP, the reliability of RG's estimates is open to debate. Exclusive reliance on these estimates to arrive at future projections may also have to be undertaken more cautiously. As such it becomes necessary to work-out alternative estimates of school age population under different sets of assumptions. In the following paragraphs the results of some preliminary and crude exercises relating to population estimates have been given. These are not only based on trend projections but also take into account the alternate assumptions regarding population growth. Since the main purpose of our exercise has been to work the educational implications of different sizes of school going population, the exercise has eschewed forays into methodological refinements for demographic projections. More specifically the following assumptions have been made in the exercises given below.

2.2 Alternative Population Projections

As pointed out earlier, the population in India has registered a rapid growth rate during the last three decades. Inspite of the efforts to check its growth, the overall growth rate increased from 2.20% in the sixties' to about 2.25% during the seventies'. In view of this, we assumed that as a result of the efforts which have already been made to control the population and with the additional efforts during the eighties, it may be possible to bring down the growth rate to about 2%. In the first exercise an overall growth rate of 2% has been assumed for the 'eighties. Consequently, the size of total population in 1991 would be 83.6 crores. Assuming no shift in the age structure, the population in the age cohort 6-14 years would be 18.9 crores. These projections are obviously on high side as compared to projections of RGs and hence their extrapolation beyond 1990-91 has not been carried out. However, the exercise is essential to evaluate the implications of high population growth for achieving UEE by 1990. A detailed discussion on the implication of such a faster increase of population for the education sector would be undertaken later.

The second estimates of age-specific population are based on more realistic assumption in which changes in the growth rate of population are envisaged at an interval of 5 years. It is assumed that ASP would continue to grow @ 2% upto 1985-86 and there after @ 1.2% upto 1990-91. From 1990 to 1995 a growth rate of 1% has been assumed and beyond that the ASP may even stabilize with only marginal changes. The anticipated behaviour of population growth has been graphically presented in Fig.1.

The third set of ASP population projections has been a variant of the assumption mentioned above. It takes a simpler view of the population scenario. In this case, 1.5% growth rate of ASP (5-14 years) has been assumed for the period 1981-91 and 1% there after upto 2001.

Finally, it may be noted that the above alternative population estimates acquire special significance especially if UEE is to be provided within a given time-frame. Otherwise the size of population becomes important to estimate the backlog under different assumption of population growth.

3. ENROLMENT PROJECTIONS : 1981-2001

In this section, we shall discuss about the enrolment behaviour under different assumptions. It is no doubt true that the educational planning efforts attempt to translate the objectives of the plan into reality through a number of especially designed programmes/schemes, yet the indicators of past performance (both flow & stock) and the other socio-economic constraints continue to and have their direct or indirect contribution. It is in this context that the use of multivariate techniques of projection and forecasting become very important.[5] However, for the purpose of present exercise, as has been stated earlier, the applications of more powerful statistical techniques has not been resorted to.[6]

3.1 Trend Based Projections

In this exercise, the time-series data on enrolment patterns has been used for the period 1960-61 to 1982-83. Simple linear trend line was fitted to the enrolment data and was used for projection purposes. The trend based projections indicate that the enrolment in primary education would increase from 8.19 Crores in 1985-86 to 10.85 crores in the year 2000. Similarly the enrolment at the middle level will increase from 2.4 Crores to 3.4 Crores in the same period. The total elementary enrolment in the year 1990-91 adds upto nearly 12 crores whereas it is expected that total population in that year will be equal to 83.6 Crores out of which about 18.9 Crores will be in the age group of 6-14 years.[7]

It is, therefore, clear that following the past trend only 63.4% of the eligible population will be enrolled in the formal sector of elementary education. If UEE is to be achieved by 1990, then the

remaining 6.9 crores or a little more than one third children in the age group 6-14 years would have to be enrolled in the non-formal educational system. Before working out implications of this scenario for the purpose of further analysis, we simplify this distribution to be two-third and one-third for formal and non-formal systems respectively.

Based on the cost structure of 1976-77 and envisaging no increase in per unit expenditure it is estimated that the total bill for the formal sector of elementary education in the year 1990-91 will be Rs.3510 crores in terms of 1984-85 prices. The detailed estimates of non-formal educational sector are not easily available but the existing budgetary provisions indicate that per unit cost in non-formal sector is being reckoned to be about one third of the formal educational sector. Thus the total coverage of 18.9 crore pupils by both formal and non-formal system in the proportion of 2/3 and 1/3 is likely to cost Rs. 4200 crores in terms of 1984-85 prices. With some simple assumption of inflation it works out to Rs. 7500 crores in terms of 1990-91 prices.

If the present distribution between elementary educational expenditure and total expenditure is assumed to hold constant in future, the estimate of total educational expenditure can be derived easily. An examination of the past data reveals that size of the total educational budget is approximately twice that of the expenditure for elementary education. By that reckoning total educational expenditure in terms of 1984-85 prices (based on inflation of 10% p.a.) will be Rs. 8400 and Rs. 15000 crores in terms of 1990-91 prices.

The Net National Production (NNP) in the country has been increasing @ 12.8% during the last five years. If the same rate of growth continues upto 1990-91, NNP is estimated to be about 370844 crores. The educational expenditure as a proportion of this NNP will come out to be about 3.6%.

The enrolment expenditure details of the educational system on the above mentioned pattern for the year 1990-91 and 1999-2000 in terms of current prices are provided in table 3. It is envisaged that under these assumptions only 3.1% of GNP is going to be spent as educational expenditure.

TABLE 3

CRUDE ESTIMATES OF ENROLMENT AND EDUCATIONAL EXPENDITURE

	Elementary Education Enrolment (in crores)	Cost of Elementary Education (1984-85 prices) (Crores)	Total Elementary cost inclusive of Non-formal education (1984-85 prices) (Crores)	Total Educational cost for all (crores)	Proportion of GNP (In current prices)
1984-85	10.5	3032.2	3620	7240	4.0
190-91	12.0	3510.6	4200 (7500)	8400 (15000)	3.6
1995-96	13.2	3909.3	4700 (13400)	9400 (26800)	
1999-2000	14.2	4228.3	5100 (21300)	10200 (42600)	

Figures in parenthesis are in current prices.

3.2 Enrolment Projections : Population Projection Scenario II

In this exercise the second set of population projections as discussed in section 2.2 above have been considered and the enrolment in different sectors have been estimated by using inter-stage ratios corresponding to the year 1980-81. The following may be noted in this context.

(a) Firstly, it has been assumed that the extent of coverage as regards the primary enrolment will remain the same as in 1980-81. Here, the relevant figure is 78.16% of the age specific population.

(b) Secondly, for working out the enrolment at the middle stage (Classes VI to VIII), a trend equation (Y= 18.536 + .4t beginning with 1960-61 as a base) has been fitted.

(c) Thirdly inter-stage ratio of 10.26% has been used for transitionfrom elementary enrolment to secondary enrolment. Similar figure of 33.0 per cent has been used for transition from secondary enrolment to higher education.

The per unit student expenditure for 1977-78 has been used for estimating the stage-wise expenditure. The expenditure at current prices has been arrived by assuming a general price rise of 10% per annum for the period onward of 1985-86. Actual price index has been used to find out the expenditure for the period upto 1985.

Obviously some of these are extremely constraining assumptions. However, these assumptions do acquire significance, if one considers that the adequate provision of basic infrastructure in the schools and consolidation of enrolments to bring about qualitative improvements in education constitutes its major objectives, at least for the next few years to come. For those who would not be covered by the formal system, the use of non-formal and open learning modes of education would be considered. It is obvious that the above scenario does not visualize the UEE to be achieved by 1990. It instead projects the likely pattern of enrolment if the past pattern had to reproduce itself in the next 10-15 years. The results are presented in Table 4. All other assumptions regarding non-formal education, cost structure of 1976-77, inflation etc., have been maintained same as in the previous exercise. The corresponding expenditure estimates have been presented in Table 5.

It may also be noted that the above exercise does not consider any improvement in the inter-stage transition rates or the extent of drop-outs. As such these results should be considered as conservative estimates. However, it may be worthwhile to examine alternative scenarios within this framework by altering the following assumptions.

(i) extent of coverage at primary stage
(ii) improvement in transition rates and retention.

We shall now discuss the results of alternative assumptions.

3.2.1 Universalization of Elementary Education by 1990

If it is assumed that UEE is to be achieved by 1990 and there is no other change in the assumptions noted above, the enrolment patterns upto year 2000-2001 would change as presented in Table 6. It may be seen that as of now (1985-86) there would be no change in the

enrolment level. It is only during 1985-1991 period that additional enrolment may have to be brought about through formal and non-formal streams. But more importantly, under this condition the major

TABLE 4

ENROLMENT PROJECTIONS UPTO 2001 : CONSERVATIVE ESTIMATES

(in crores)

Sector	1980-81	1985-86	1990-91	1995-96	2000-2001
Primary	7.3	8.1	8.5	8.9	9.0
Middle	2.0	2.3	2.6	2.9	3.1
Elementary (Primary + Middle)	9.3	10.4	11.1	11.8	12.1
Secondary	0.95	1.07	1.13	1.21	1.24
Higher Education	0.31	0.35	0.37	0.40	0.41

TABLE 5

PROJECTED EXPENDITURE (CONSERVATIVE ESTIMATES) UPTO 2001

	1980-81	1985-86	1990-91	1995-96	2000-2001
Primary Expenditure	1220	2180	3685	6215	10125
Middle Expenditure	435	805	1460	2625	4520
Elementary Expenditure	1655	2985	5145	8840	14645
Secondary Expenditure	415	750	1275	2200	3600
Higher Education Expenditure	625	1135	1920	3365	5565
TOTAL EXPENDITURE	2695	4870	8340	14405	23840

TABLE 6

ELEMENTARY ENROLMENT PROJECTIONS
(For UEE to be completed by 1990)

	1980-81	1985-86	1990-91	1995-96	2000-2001
Primary	7.3	8.1	10.9	11.4	11.5
Expenditure	1220	2178	4720	7953	12920
Middle	2.0	2.3	6.4	6.7	6.8
Expenditure	435	604	3600	6073	9927
Total Elementary Enrolment	9.3	10.4	17.3	18.1	18.3
Expenditure (Rupees)	1655	2982	8320	14026	22847

pressure of additional enrolment would fall on middle sector where subsequently the enrolment may have to increase by nearly three times during the next five years. In view of this, the expansion of existing infrastructure to cope with a massive increase not only requires a very large increase in resource allocation to elementary sector but would also pose the serious problems of opening new institutions, recruitment and posting of teachers and making adequate provisions for other inputs like books and stationery etc.

3.2.2 **Universalization of Primary Education by 1990 :**

We may also consider the possibility that only UPE may take place by the year 1990 and the existing transition rates between primary and middle education may continue to prevail. Table 7, presents the detailed results of the exercise based on these assumptions. It may be noted that in this scenario there is no change in middle stage enrolments upto the year 2000. The enrolments at middle stage are assumed to follow the same transition rates and consequently the increase is gradual. However, in actual practice the enrolment in middle stage may be higher than the estimates presented in Table 4 due to improved retention and also due to the success of non-formal programmes of education.

The major problem with the scenarios described above is that they do not address to the problem of drop-outs which are more than 1/3 at the primary level and more than 2/3 upto middle level. If

universalisation of elementary education were to be interpreted as inclusive of cent per cent retention in the formal sector then the expenditure in the above scenario is likely to increase to about 7% of GNP.

In the above description, it has been assumed that the qualitative aspects of education stay constant at the level of 1976-77 per unit cost. Keeping in view the fact that there is an urgent need for improving the quality of education at all the levels, it is felt that an additional budgetary allocation of 20% will be minimally required. In that context the proportion of GNP required would be 5% with existing level of drop-outs and 8.12% with near cent per cent retention.

3.3 Enrolment Projections : Population Scenario III

The final exercise in enrolment estimation is based on the third scenario of population projections. It assumes a growth rate of 1.5% for ASP (5-14 years) upto 1991 and 1% thereafter upto 2000. The detailed results are presented in Table 8. It has been estimated that during 1981 there were 15 crore children in the age-group of 6-14 years, and the enrolment at the elementary stage was 9.3 crores. The enrolment in the secondary stage and in higher education was 95 lakhs and 31 lakhs respectively. The share of secondary sector to the

ELEMENTARY ENROLMENT PROJECTIONS - UPE BY 1990

	1980-81	1985-86	1990-91	1995-96	2000-2001
Primary Enrolment	7.3	8.1	10.9	11.4	11.5
Expenditure	1220	2180	4720	7955	12920
Middle Enrolment	2.0	2.3	3.3	3.7	4.0
Expenditure	435	805	1860	3355	5840
TOTAL ENROLMENT (EXP.)	9.3	10.4	14.2	15.1	15.5
	1655	2985	6580	11310	18760

TABLE 8

ENROLMENT PROJECTIONS BASED ON ALTRNATIVE POPULATION GROWTH RATES

(in crores)

	1981	1991	2001
Population Present Trend (6-14)	15	17.4	19.25
Elementary	9.3	11.2	
Secondary	0.95	1.25	
Higher	0.31	0.38	
UEE by 1991			
Elementary	9.3	11 (Primary)	
		6.4 (Middle)	

elementary education is about 10.2% and of the higher education to secondary is 3.44%. We shall assume these ratios to remain unchanged during the eighties especially when estimating the enrolment in elementary stage at the 1981 level of coverage. It has been observed that enrolment in elementary stage would be of the tune of 11.2 crores in 1991. These results are based on the following assumptions.

(i) age-specific population growth rate would be 1.5% per annum upto 1991.

(ii) the coverage, retention and the distribution of enrolment in various sectors would increase at the same rate as earlier.

Following the above assumptions, it is expected that the secondary level enrolment would be 125 lakhs as compared to 38 lakhs for higher education. In view of the fact that our major concern here is with the elementary stage, it may be apppropriate to consider the implications of enrolment projections on teachers as well. The available data does not give break up of teachers engaged in primary, and middle schools. However, based on the assumption of teacher pupil ratio it has been estimated that in all about 29 lakhs teachers would be required whereas the number of teachers in the primary and middle schools in 1981 was 21.7 lakhs.

At this stage, we may now consider the alternate assumption of UEE. It implies that by 1991 all 17.4 crore children have to be enrolled through formal as well as non-formal modes of education.Following the assumptions noted above it is expected that 11 crore children would be studying in primary and another 6.4 crore in the middle stage of education. It has been estimated that the total teacher requirement would be of the order of 44 lakhs based on the assumption of teacher pupil ratio of 1:40 for the elementary sector as a whole. In case we assume a lower ratio for middle stage, the number of teachers required would rise further. As we have already pointed out such an expansion would have a significant impact on the resource inputs.

It may be noted that this achievement implies that the primary education will be 1.5 times and the middle 3.2 times of its present size. It is estimated that in terms of 1980-81 prices, and assuming the per unit costs of 1977-78 to stay put, the budgetary requirements, for the year 1990-91 will be doubled to Rs. 3200 crores (the 1980-81 expenditure being Rs. 1537 crores). On the basis of 8 per cent per annum rate of inflation, the budget in current prices would be more than four times the 1980-81 allocation.

In addition, the universalisation of elementary education by 1990, will also imply that even at existing transition rates, the enrolment in the secondary and higher education level will increase to nearly twice of their 1980-81 enrolments. However, keeping in view the fact that the per unit cost of secondary and higher education are several times higher than the per unit cost of elementary education, the overall impact on the educational budget would be tremendous. It may be recalled that these implications have been worked out without taking into account the expenditure which would inevitably have to be incurred on improving the quality of education.

It has been assumed that during the nineties the age-specific population would grow @ 1% per annum. The size of the age-specific (6-14 years) population in the year 2001 may be about 19.25 crores. At this stage, in view of the crude nature of the estimates, we have not worked out the enrolment patterns for secondary and higher education. For this purpose, a detailed exercise is needed in which various alternate modes of expansion and diversification in the vocational education, professional education have to be brief.

4. MINIMUM NEEDS AND ITS IMPLICATIONS FOR EDUCATIONAL PLANNING

The scenario of educational system as presented above, clearly brings out the immensity of the task in case the target of UEE is to be achieved. It may be worthwhile to observe that the data presented above indicates only the expansion in terms of quantitative aspects. As far as qualitative aspects are concerned, it is being realised now that they also need an urgent attention and that the envisaged reforms may go a long way in achieving better retention, improved efficiency of the system and optimal utilization of resources. As a consequence, the pressure, both in terms of quantity as well as qualitative improvements would increase considerably than what has been brought out above.

It is apparent that the objectives of education cannot be attained unless qualitative changes are introduced in the system. To a great extent these would be in the nature of behavioural, conceptual, methodological and organizational modifications. It has, however, to be recognised that these will not bear any fruit unless educational institutions attain a minimum threshold of essential facilities in terms of buildings; block-boards; charts and posters; drinkingwater and toilet facilities, laboratoris; science kits and libraries; and minimum contingencies for organising Socially Useful Productive Work (SUPW), nature studies, games, sports and cultural activities.

The upshot of the above scenario is that any substantial improvement in educational coverage as well as retention, which constitutes the core of universalisation of elementary education efforts will not only require significant increase in educational expenditure on elementary education but will also have a multiplier effect on the total educational budget through increased enrolments in the secondary and higher education. Hence, policy deliberations vis-a-vis universalisation of elementary education need to be matched with hard financial decisions.

Alternatively, other educational approaches, such as non-formal/distance education, and vocationalisation have to be worked out in detail for a large scale implementation and replication.

The above scenario underlines the immensity of the quantitative tasks of education on the basis of conservative assumptions. This re-emphasises the importance of taking up programmes for population control on a massive scale through adult education as well as school

and college education so that small family norm becomes deeply embedded in the consciousness of the community. Otherwise, a situation might arise in which, due to sheer weight of numbers, the system might cross the bounds of financial feasibility at even the present levels of participation and attainment.

NOTES

1. Since then it is learnt that the Office of the Registrar General has come out with a revised set of projections. These are, however, not released as yet.

2. For details see paras 14 and 16 (Census 1981, pp. 4)

3. Attention is also invited to a separate set of estimates obtained by NCERT for undertaking similar exercises.

4. This kind of Expert Groups are a regular feature and are established from time to time.

5. On causes of population growth, see Raza et. al. (1983).

6. See Seventh Five Year Plan (1985).

7. Retention rates are used here to devote inter-class transition while inter-stage ratios refer to transition from one level of education, say from primary to middle, and so on.

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