

SEVENTH MEETING
of the
EDUCATION COMMISSION

Minutes & Agenda
Papers

(5th March, 1965)



EDUCATION COMMISSION
GOVERNMENT OF INDIA
UNIVERSITY GRANTS COMMISSION BUILDING
NEW DELHI-1

EC/7/65
Restricted Circulation

SEVENTH MEETING
of
The Education Commission
Minutes & Agenda
Papers

(5th March, 1965)

EDUCATION COMMISSION
GOVERNMENT OF INDIA
University Grants Commission Building,
New Delhi-1.
1965.

Seventh Meeting of the Education Commission
held on 5th March, 1965.

...

CONTENTS

Pages

I

Minutes

Minutes of the Seventh Meeting of the Education Commission held on 5th March 1965.	1-5
--	-----

II

Papers

1. Financing of Education in India (1981) - A paper prepared by the Member-Secretary.	6-23
2. A Note on Textbooks Publication in the USSR by Prof. S. Shumovsky.	21-28
3. A Note on New Instructional Methods by Sadatoshi Ihara.	29-34
4. Where Angels Fear to Tread - by Dr. Mortimer Smith.	35-47
5. Monographs to be prepared in the programme of Study of Costs of Education in India.	48

EDUCATION COMMISSION
GOVERNMENT OF INDIA.

Minutes of the Seventh Meeting of the Education Commission held in the Conference Room of the University Grants Commission, New Delhi, on 5th March 1965.

Present:

1. Dr. D.S. Kothari - Chairman
2. Shri A.R. Dawood
3. Prof. S. Ihara
4. Dr. V.S. Jha.
5. Shri P.N. Kirpal
6. Prof. M.V. Mathur
7. Dr. B.P. Pal.
8. Miss S. Panandikar
9. Prof. Roger Revelle
10. Dr. K.G. Saiyidain
11. Prof. S.A. Shumovsky
12. Mr. Jean Thomas
13. Shri J.P. Naik - Member-Secretary
14. Mr. J.F. McDougall - Associate Secretary

Shri R.A. Gopaldaswami and Dr. T. Sen regretted their inability to attend the meeting.

Shri K.L. Joshi, Secretary, University Grants Commission, was present by special invitation.

The following points emerged in the course of the discussion:

1. Financing of Education in India (1982):

The paper prepared by the Member-Secretary on the above subjects was discussed in detail. The following points were made in the course of the discussion:-

(a) The paper presents a view point which is different from that of the Sargent Report or the Kher Committee. The former recommended that two-thirds of the total expenditure on education should be devoted

to elementary education while the Kher Committee recommended that this should be fifty per cent.

The assumption made in this paper is that only one-third of the total expenditure would be devoted to elementary education in view of the immense needs for the development of secondary education, post-graduate education and research, technical and agricultural education, and several programmes of qualitative improvement. This view was broadly agreed to.

The following proposals made in the paper for keeping the costs of elementary education within reasonable amounts without inhibiting the expansion of elementary education were also broadly agreed to:

(i) the double-shift system may be adopted in classes I and II to secure an overall larger pupil-teacher ratio at the primary stage;

(ii) an intensive development of the middle school stage should be attempted; and

(iii) provision for part-time education should be made on such a scale as is necessary for the age-group 11-14.

(b) Secondary education is now the weakest link and receives only 19 per cent of the total educational expenditure. The proposals made in this paper to increase this allocation to about one-third of the total educational expenditure is based on such assumptions as (i) increasing the duration of the school stage to 12 years; (ii) much larger vocationalisation than in the past, (iii) qualitative improvement, (iv) a fairly large scholarships programme for the development of talent; etc. This was broadly agreed to.

(c) There was a view that the assumptions on

which the calculations are based (an increase of 7 per cent per year in the national income and 6 per cent of the GNP to be devoted to education) were on the high side. It was, therefore, necessary to have alternative projections. The Member-Secretary explained that he was working on two supplementary papers at the moment - allocation of funds for different sectors of education on the assumption that the total educational expenditure would be only Rs 30 per head of population (which was the minimum needed for doing anything worth-while) and a programme of well-considered priorities which would suggest the manner in which all additional funds-from Rs 11 per head of population at present to Rs 30-45 per head of population in 1981 - would be allocated. The idea that there should be two or three projections of expenditure and a well-planned programme of priorities was broadly approved, and the Task Force on Educational Finance was requested to work out the details on these broad principles.

2. Financial Assistance to Students in India:

The second monograph in the study of costs of education in India, which is devoted to the above subjects, was recorded.

3. Visit to Maharashtra: The report of the visit of the Education Commission to Maharashtra State was recorded. It was decided that a note on the main points arising from this visit should be prepared for the consideration of the Commission at its next meeting.

4. Study of Costs of Education in India. The details of the twelve monographs proposed to be prepared under the above project, as suggested by Prof. M.V. Mathur

were approved.

It was agreed that the next meeting of the Commission be devoted largely to consider the question of pattern of primary/ secondary education and related matters.

The meeting terminated with a vote of thanks to the Chair.

SEVENTH MEETING
of
The Education Commission

Selected Agenda Papers.

FINANCING OF EDUCATION IN INDIA

(1981)

By

J.P.Naik

Member - Secretary

Education Commission, New Delhi.

Education Commission
University Grants Commission Building,
Bahadur Shah Zafar Marg,
New Delhi-1.

FINANCING OF EDUCATION IN INDIA BY 1981

The object of this paper is to estimate the total cost of education in India as it is likely to be by 1981. For purposes of convenience, the following two assumptions have been made:-

- (1) No allowance has been made for increase in prices and it is assumed that all calculations shown here would be on the basis of 1960-61 prices. These could then be readily adopted to all changes in prices which may occur from time to time.
- (2) No allowance is also made for the increase in population and the calculations have been made for a population of one million.* These could then be readily extended to any projection of population growth which may be adopted.

2. Total Cost of Education at the First Level: The first level of education includes (a) pre-primary education for the age-group 3-5; (b) primary education which is assumed to cover five years (Classes I-V) or age-group 6-10; and (c) middle school education which is assumed to cover three years (Classes VI-VIII) or the age-group 11-13.

(a) Pre-Primary Education: It is assumed that pre-primary education would continue to expand rapidly during the next three Plans on a voluntary basis and mainly through private enterprise, the role of the State being limited to (1) the provision of facilities for training of teachers; (2) conduct of a few experimental institutions, preferably one in each district; and (3) grant-in-aid to private pre-primary schools conducted in rural areas or for under-privileged groups in urban areas.

The target of enrolment has been assumed at five per cent of the age-group 3-5 as against a target of

* See Table No. I at the end.

enrolling one child out of every twenty-one assumed by the Sargent Plan for 1985. For a population of one million in 1981, the total number of children in the age-group 3-5 would be 78,164 (Table No. I). The total enrolment in pre-primary schools at five per cent of this would be 3,908.

To calculate the cost per pupil, it is assumed that the average annual salary of a pre-primary school teacher would be Rs. 1800 in 1981 as against Rs. 914.3 in 1950-51 and Rs. 924.7 in 1960-61. Adding 10 per cent for old-age benefits, the cost per pre-primary teacher could be Rs. 1980 per year. The percentage of teacher costs to total expenditure was 66.1 p.c. in 1950-51 and 63.1 p.c. in 1960-61. We shall assume that this will be 60 p.c. in 1981. On this assumption, the total cost per teacher unit would be Rs. 3300. We shall further assume a pupil-teacher ratio of 30:1 as against 25:1 in 1950-51 and 30:1 in 1960-61. The cost per pupil per year would then come to Rs. 110.

It would be possible to reduce this cost considerably by training local women as pre-primary teachers so that they could do the job on a part-time basis for a comparatively smaller remuneration. The adoption of this device would reduce the cost per pupil per year for about 50 per cent and would enable us to reach an enrolment target of about 10 per cent of the total population in the age-group 3-5 and also to spread pre-primary education largely in rural areas without much difficulty.

The non-recurring cost at this stage may be assumed at 10 per cent of the recurring cost.

On these assumptions, the total recurring cost for pre-primary education in 1981 would be Rs. 429,880.

Adding 10 per cent for non-recurring costs, the total expenditure on the programme would reach Rs. 472,868.

(b) Cost of Primary Education: Primary education would cover a period of five years (Classes I-V) or the age-group 6-10.

At this stage, the target of enrolment will be 120% of the age-group because every child in the age-group would necessarily be enrolled and about 20% of the additional seats would be needed for children of less than 6 or more than 10 years of age, who would be attending primary schools. For a million of population in 1981, the total number of children in the age-group 6-10 would be 128,344 (Table No. I). The total enrolment in primary schools (Classes I-V) @ 120% would thus be 154,013.

For calculating the recurring cost per pupil, let us assume the average annual salary of a primary teacher to be Rs. 1800 as against Rs. 544.5 in 1960-61 and Rs. 872.8 in 1960-61. Adding 10% for old-age benefits, the annual average cost per primary teacher would be Rs. 1980. The percentage of teacher costs to total expenditure was 88.3 in 1950-51 and 88.1 in 1960-61. We shall assume that this will be 80% in 1980-81. On this basis, the total expenditure per primary teacher would come to Rs. 2,472. The pupil-teacher ratio may be assumed at 45:1 as against 34:1 in 1950-51 and 36:1 in 1960-61. It would be possible to increase the pupil-teacher ratio by adoption of the double shift system.

This will give a recurring

Th-

Rs. 8,470,000

total cost of

(c) Cost of

school stage would cover ten years (Classes VI-VIII)

or the age-group 11-13.

The target of enrolment for this stage would be only 80% of the age-group 11-13. This will make the necessary allowances for (a) children of this age-group reading either at the primary stage or at the secondary stage (which would be about minus 25 p.c.) and (b) children of less than 11 or more than 13 reading at this stage (which would be about plus 5 p.c.). In 1981, the total number of children in the age-group 11-13 in one million of population would be 72,586. At 80% of this population, the total enrolment in Classes VI-VIII would be Rs. 58,069. It must be remembered, however, that not all children in this age-group will be studying on a full-time basis. In 1960-61, only 25% of the children in this age-group were reading on a full-time basis at this stage and it is expected that this proportion would increase to 60% by 1981. The remaining 40% of the children would be attending schools on a part-time basis. In other words, the enrolment at this stage would be 34,841 in full-time institutions and 23,228 in part-time institutions.

For calculating the costs, per pupil in full-time attendance, let us assume that the average salary of the middle school teacher would be Rs. 2400 in 1981 as against Rs. 628.4 in 1950-51 and Rs. 1057.3 in 1960-61 (these figures give the average salaries of all teachers in middle schools which also include teachers working in the primary sections. The actual salaries of the teachers working at the middle school stage would, therefore, be a little higher). Adding 10% for old-age benefit, the cost per teacher unit would come to Rs. 2640. The percentage of teacher costs to total expenditure may be assumed at 70% in 1981 as against 75.8% in 1950-51 and 85.1% in 1960-61. The total cost per teacher unit would thus be Rs. 3771. Assuming the pupil-teacher ratio as 30:1 as against 24:1 in 1950-51 and 31:1 in 1960-61 the cost per pupil comes to Rs. 126 in round figures.

The non-recurring cost may be assumed @ 10 of the recurring costs.

For part-time education, the cost per pupil would be much lower. We may assume here an allowance of Rs. 30 per teacher per month. This will imply a teacher cost of Rs. 360 per year. Other costs may be taken at Rs. 12 per pupil per year and the pupil-teacher ratio may be assumed at 15:1. The total cost of such a unit would then come to Rs. 540 (Rs. 360 for teacher salary and Rs. 180 for other expenditure) which works out at Rs. 36 per pupil per year. No non-recurring costs are involved in this programme.

The total cost of the programme of middle school education would then be as follows:-

1. Cost of educating 34,841 children in whole-time schools at Rs. 126 per child.	Rs. 4,389,966
2. Non-recurring cost on the above @ 10%	438,997
3. Total cost for full-time education	4,828,963
4. The cost of educating 23,228 children in part-time institutions at Rs. 36 per child.	836,208
5. Grand total for middle school education	5,665,171

3. The total cost of education at the first level would thus be as follows:

	Recurring Rs.	Non-recurring Rs.	Total Rs.
Pre-Primary Education	429,880	42,988	472,868
Primary Education	8,470,715	423,536	8,894,251
Middle School Education	5,226,174	438,997	5,665,171
Total First Level of Education	14,126,769	905,521	15,032,290

The cost of the first level of education would thus come to Rs. 15.03 per head of population - Rs. 0.47 for pre-primary education, Rs. 8.89 for primary education and Rs. 5.67 for middle school education.

4. The Total Cost of Second Level of Education: The second level of education is assumed here to cover a period of four years - age-group 14-17. This will be further sub-divided into two periods of two years each: (a) classes IX-X (or age group 14-15); and (b) classes XI-XII (or age-group 16-17).

There will be four types of courses provided at this stage as follows :-

(1) Full-time General Secondary Education of Two years (classes IX-X or age-group 14-15): This will be provided to about 40 per cent of the age-group 14-15. It is assumed that about 60 per cent of the children who will complete middle school education on a full-time basis (which will be equal to 36 per cent of the age-group) and about 10 per cent of the children who will complete that education on a part-time basis (which will be equal to 4 per cent of the age-group) will enter upon secondary general education on a full-time basis at this stage.

(2) Full-time Junior Vocational Schools: It is proposed to provide terminal vocational courses after the age of 14. The duration of these courses will vary from course to course, depending upon the nature of the job for which training is being imparted. For purposes of calculation, however, it is assumed that the average duration of all such courses will be two years - age-group 14-15. This type of education is proposed to be provided for about 10 per cent of the total age-group 14-15. In other words, the ratio of enrolment in courses of general to vocational education would be 4:1 as against 8:1 at present.

(3) Part-time Secondary Education - General or Vocational: In addition to the facilities for full-time education provided for 50 per cent of the age-group 14-15 as shown above, facilities for part-time education would also be provided for another 20 per cent of the

age-group - for 10 per cent of the age-group in general education and for another 10 per cent of the age-group in vocational education.

The remaining 30 per cent of the age-group would be assumed to enter life.

(4) Higher Secondary Education (Classes XI-XII or age-group 16-17): It will be assumed that 50 per cent of the children who would complete general secondary education on a full-time basis or 20 per cent of the age-group 16-17 and 10 per cent of those who complete it on a part-time basis or 1 per cent of the age-group 16-17 (thus making a total of 21 per cent of the age-group 16-17) would go in for higher secondary education on a full-time basis which would prepare them for the universities or other forms of higher education.

(5) Senior Vocational Schools: It is also proposed to make an intensive effort to divert students into terminal vocational courses at this stage. Vocational courses at a higher level would thus be provided for about 7 per cent of the age-group 16-17. In other words, the proportion of enrolment in courses of general and vocational education at this stage would be 3:1. The duration of these courses would vary from courses to courses depending on the job for which preparation is being made. For convenience of calculation, however, it is assumed here that the average duration of all such courses would be two years.

(6) Part-time Higher Secondary Education - General and Vocational : In addition, it is assumed that 12 per cent of the age-group would go in for part-time education - 6 per cent in courses of general higher secondary education and 6 per cent in senior vocational courses.

The remaining 60 per cent of the age-group (in addition to the 30 per cent which had already entered

life at 14 plus) would be assumed to have entered life at 16 plus.

On these assumptions, the enrolments in higher secondary education in 1981, for one million of population, would be as follows :

<u>Type of Education</u>	<u>Enrolment</u>
1. General Secondary Education on full-time basis in Classes IX-X (or age-group 14-15) for 40 per cent of the age-group	18,399
2. Junior Vocational Education on full-time basis for 10 per cent of the age-group 14-15	4,600
3. General Secondary Education on a part-time basis for 10 p.c. of the age-group 14-15	4,600
4. Junior Vocational Education on a part-time basis for 10 p.c. of the age-group 14-15	4,600
5. General Higher Secondary Education in classes XI-XII on full-time basis for 21 p.c. of the age-group 16-17	9,207
6. Senior Vocational Education on a full-time basis for 7 p.c. of the age-group 16-17	3,069
7. General Higher Secondary Education on a part-time basis for 6 p.c. of the age-group 16-17	2,631
8. Senior Vocational Education on a part-time basis for 6 p.c. of the age-group 16-17	2,631
9. Total number of students under education -	
(a) in full-time courses	35,275
(b) in part-time courses	<u>14,462</u>
10. Total number of students who have entered life in	
(a) age-group 14-15 ..	13,798
(b) age-group 16-17	<u>26,307</u>
11. Grand total of the population in the age-group 14-17	<u>89,842</u>

The cost per pupil in these different courses of education may be worked out as follows :-

(a) General Secondary Education on a full-time basis: The average annual salary of teachers may be assumed at Rs. 3000 in 1981 as against Rs. 1258.3 in 1950-51 and Rs. 1681.0 in 1960-61. Adding 10% for old-age benefits, the cost per teacher unit would come to Rs. 3300. The percentage of teacher

costs to total expenditure may be assumed at 60% in 1981 as against 69.1% in 1950-51 and 72.3% in 1960-61. On these basis, the total cost per teacher unit would be Rs.5500. The pupil-teacher ratio may be assumed at 25:1 which will give a cost of Rs.220 per year.

At this stage, it is necessary to identify and develop talents. It is, therefore, proposed to provide scholarships and other facilities to the top 5% of the students at Rs.600 per year per student. In addition to the above cost, if due allowance is made for this programme for the development of talent, the average cost per student would come to Rs.250 per year.

The non-recurring cost may be provided at 10 p.c. of the recurring cost.

(b) General Secondary Education on a part-time basis: Here, the allowance per teacher is assumed at Rs.50 per month or Rs.600 per year. The other costs are assumed at Rs.40 per student per year in a batch of 15 students or Rs.600 in toto. The total cost of a class of 15 students would thus be Rs.1200 per year or Rs.80 per student. No non-recurring cost need be provided.

(c) Junior Vocational Education: On the basis of the present trends, the cost of this education is estimated at Rs.500 per pupil per year and non-recurring cost at 15% of the recurring cost. Similarly, the cost of part-time education of this type is taken at 25%

of the recurring cost on a full-time basis, no non-recurring cost being provided.

(d) Higher Secondary Education: Here, the average cost for the salary per teacher is assumed at Rs. 4700. Adding 10% for old-age benefits, the cost per teacher would be Rs. 4620 per year. The ratio of teacher cost to total expenditure may be taken at 60, thereby raising the total cost per teacher unit to Rs. 7700. Assuming a pupil-teacher ratio of 22:1, the cost per pupil would come to Rs. 350. Adding scholarships of Rs. 60 per month to 5% of the top level students, the average annual recurring cost per pupil would come to Rs. 386.

The non-recurring cost may be taken at 12½% of the recurring cost. The cost per pupil for part time education may be taken as 33% of the recurring cost or about Rs. 125 per pupil.

(e) Senior Vocational Education: On the basis of the present trends, the recurring cost for full-time courses has been assumed at Rs. 700 per year per student and non-recurring cost at 20% of the recurring costs. For part-time education, no non-recurring costs are provided and the recurring costs are taken at 25% of the non-recurring costs for full-time education.

5. On the above assumption the cost of the educational programme at the second level would be as follows :

	No. of students	Cost per pupil Rs.	Total recurring cost Rs.	Total non-recurring cost Rs.
1. General Secondary education on a full-time basis.	18,399	250	4,599,750	459,975
2. Junior vocational education on a full-time basis.	4,600	500	2,300,000	345,000
3. General Secondary education on a part-time basis.	4,600	80	368,000	Nil
4. Junior vocational education on a part-time basis.	4,600	125	575,000	Nil
5. General Higher Secondary education on a full-time basis.	9,207	386	3,553,902	444,238
6. Senior Vocational education on a full-time basis.	3,069	700	2,148,300	429,660
7. General Higher Secondary education on a part-time basis.	2,631	125	328,875	Nil
8. Senior Vocational education on a part-time basis.	2,631	175	460,425	Nil
Total for second level of Education	49,737		14,334,252	1,678,873

or a grand total of Rs. 16,013,125

The total cost of second level education would thus come to Rs. 16.02 per head of population.

6. Total Cost of the Third Level of Education:

The costs at this level will have to be considered under two separate heads: (a) undergraduate education - general and vocational; (b) postgraduate education and research. The total enrolments at this stage would be as follows :-

(a) Undergraduate Education: As shown in the preceding section, in the age of 17 plus, 21 p.c. of the population would have completed general higher education on a full-time basis and 7 p.c. would have completed senior vocational education on a whole-time basis. Besides, about 12 p.c. of the age-group would be receiving education on a part-time basis. Of these, about one-fifth or 8 p.c. of the age-group (which is equal to 1600 for a population of one million) would proceed to higher education on a whole-time basis - half of them in courses of general education and half in those of professional education. Assuming an average duration of about 3.75 years, the total enrolment that will have to be provided in undergraduate courses will be about 6,000 - 3000 in general education and 3000 in professional education.

(b) Postgraduate Education: In post-graduate education, the total enrolment needed would be about 1,000 or 16.7 p.c. of the undergraduate enrolment as against the present rate of about 6 p.c. only.

(c) Part-time Education: In addition, it is proposed to provide part-time education to about half the total enrolment, i.e. for 3000 persons.

The costs per pupil would be as follows :-

(a) Undergraduate Education: The average annual salary of a teacher will be assumed at Rs.5400. Adding 10 p.c. for old-age benefits, the cost per teacher unit would be Rs.5940. Assuming that the ratio of teacher costs

to total expenditure is 60:40, the cost per teacher would be Rs.9,900. Assuming a pupil-teacher ratio of 15:1, the cost per pupil per year would be Rs.660. We may further provide scholarships of Rs.100 p.m. to 10 p.c. of the students which will raise the average cost per pupil to Rs.780 per year. On the professional side, this cost would be about Rs.1200 per year.

(b) Postgraduate Education: Here the average salary may be taken at Rs.7,200 per year. Adding 10 p.c. for old-age benefits, the cost per teacher comes to Rs.7,920. Taking the ratio of teacher-costs to total expenditure as 50:50, the cost per teacher would be Rs.15,840. Assuming a pupil-teacher ratio of 10:1, this gives a pupil cost of Rs.1584. If scholarships of Rs.150 p.m. are added for 15 p.c. of the enrolment, the cost per student would come to Rs.1854.

(c) The non-recurring costs may be taken at 20 p.c. of the recurring costs.

(d) The cost of research may be taken at one rupee per head of population.

(e) For part-time education, the cost may be taken at Rs.300 per pupil per year.

The total cost of education at the third level would then be as follows :-

	Enrolment	Cost per pupil	Recurring cost	Non-recurring cost
		Rs	Rs	Rs
1. Undergraduate Education (general)	3,000	780	2,340,000	468,000
2. -do- (Professional)	3,000	1200	3,600,000	720,000
3. Post-graduate education	1,000	1354	1,354,000	370,800
4. Part-time education	3,000	300	900,000	Nil
5. Research	-	-	1,000,000	100,800
	10,000		9,694,000	1,659,600
or a grand total of Rs.11,353,600.				

The total cost of third level of education would thus come to Rs.11.35 per head of population.

7. Administration and Supervision: Over and above the expenditure indicated above, funds will have to be provided for administration and supervision. These may be taken at 4 p.c. of the total expenditure on the first and the second level of education and 1 p.c. of the expenditure incurred at the third level of education. On this basis, the expenditure required for administration and supervision would come to Rs.1.35 per head of population.

8. Teacher Training: Funds will also have to be provided for teacher training. These may be taken at 5 p.c. of the expenditure on the first and the second level of education and 1 p.c. of the expenditure on the third level of education. On this basis, the total cost comes to Rs.1.67 per head of population.

9. The total educational expenditure required per head of population in 1981 would thus be as follows :

(a) First level of education	...	Rs.15.03
(b) Second level of education	...	Rs.16.02
(c) Third level of education	...	Rs.11.35
(d) Administration & Supervision	..	Rs. 1.35
(e) Teacher Training	...	Rs. 1.67
	Total	Rs.45.41

(or Rs.45/- in round figures)

10. Relation to G.M.P.: It has been assumed for the purpose of these estimates that the national income will rise in the next three Plans to 7 p.c. per annum in real terms, or from Rs.185,000 million in 1965-66 to about Rs.520,000 million in 1980-81. This will imply an increase in the national income per head from Rs.361 per head of population in 1965-66 to Rs.750 per head of population in 1980-81. Some might argue that this is

not realistic. But any increase of national income at a smaller rate would create more problems than it would solve. An increase of 7 p.c. per annum in national income must, therefore, be taken as the minimum basis for all social and economic planning in the future.

11. At the end of the Third Plan, the total expenditure on education will reach 3 p.c. of the national income. It is now proposed that this proportion should be raised to 6 p.c. by 1980-81. It would then be possible to get a total expenditure of Rs.45 per head of population for education.

12. A comprehensive table showing all the assumptions and calculations made in this paper is enclosed for ready reference. (Table No. II).

J.P. Naik
Member-Secretary

Table No. I: Population Data(1961-81)

Age	Percentage of the Population in the age to total population				No. of persons in one million of population in 1981
	1961	1966	1971	1976	
3-4	3.06	3.18	3.06	2.90	25,732
4-5	2.93	3.07	2.97	2.85	26,042
5-6	2.82	2.99	2.84	2.80	26,390
Total(Pre-primary)	8.81	9.24	8.87	8.55	78,164
6-7	2.72	2.87	2.81	2.74	26,215
7-8	2.64	2.75	2.76	2.69	25,987
8-9	2.56	2.64	2.70	2.63	25,714
9-10	2.48	2.55	2.64	2.58	25,394
10-11	2.41	2.46	2.57	2.52	25,034
11-12	2.33	2.37	2.49	2.47	24,637
12-13	2.26	2.29	2.41	2.41	24,205
13-14	2.20	2.22	2.33	2.36	23,744
Total(Elementary)	19.60	20.15	20.71	20.40	2,00,930
14-15	2.13	2.15	2.24	2.30	23,256
15-16	2.07	2.09	2.16	2.24	22,741
16-17	2.01	2.03	2.07	2.18	22,194
17-18	1.96	1.97	1.99	2.12	21,651
Total(Secondary)	8.17	8.24	8.46	8.94	89,842
18-19	1.91	1.91	1.93	2.04	21,125
19-20	1.85	1.85	1.87	1.96	20,595
20-21	1.81	1.80	1.81	1.88	20,056
21-22	1.77	1.74	1.76	1.81	19,517
22-23	1.73	1.69	1.71	1.73	18,931
23-24	1.69	1.65	1.66	1.63	18,254
Total(Higher Education)	10.76	10.64	10.74	11.10	1,18,478
Grand Total (all stages)	47.34	48.27	48.78	48.99	4,87,414

Table No. II-A Study of Costs of Education in India (1981)

Stage	Age-group concerned	Population in one million (1981)	Target of enrolment	Recurring cost per pupil			Total Recurring Cost (1981) Rs.	Non Recurring Cost. Rs.	Total Cost. Rs.	Cost per head of Population Rs.	
				Average Annual teacher salary etc. Rs.	% of teacher costs total	Pupil Teacher ratio					
FIRST LEVEL											
(i) Pro-primary	3-5	73,184	3,908 (5 p.c.)	1,800	60	30:1	110	429,830	42,988	472,868	0.47
(ii) Primary	6-10	128,344	154,013 (120 p.c.)	1,800	80	45:1	55	8,470,715	423,536	8,894,251	8.89
(iii) Middle	11-13	72,586	53,069 (70 p.c.)	-	-	-	-	5,226,174	438,997	5,665,171	5.67
(a)	Full-time	-	34,841 (42 p.c.)	2,400	70	30:1	126	4,339,966	438,997	4,828,963	4.83
(b)	Part-time	-	23,228 (32 p.c.)	30	-	15:1	36	836,208	-	836,208	0.84
TOTAL FIRST LEVEL			215,990	-	-	-	-	11,126,739	905,521	15,032,290	15.03
SECOND LEVEL											
(i) General Secondary Education (Classes IX-X)	14-15	45,997	22,999 (50 p.c.)	-	-	-	-	4,967,750	459,975	5,427,725	5.13
(a)	Full time	-	18,399 (40 p.c.)	3,000	60	25:1	250	4,599,750	459,975	5,059,725	5.03
(b)	Part time	-	4,600 (10 p.c.)	600	-	15:1	80	368,000	-	368,000	0.37
(ii) Junior vocational Education	14-15	-	9,200 (20 p.c.)	-	-	-	-	2,375,000	345,000	3,220,000	3.22
(a)	Full time	-	4,600 (10 p.c.)	-	-	-	500	2,300,000	345,000	2,645,000	2.65
(b)	Part time	-	4,600 (10 p.c.)	-	-	-	125	575,000	-	575,000	0.58
(iii) General Higher Secondary Education (Classes XI-XII)	16-17	43,845	11,338 (27 p.c.)	-	-	-	-	3,332,777	444,238	4,327,015	4.33
(a)	Full time	-	9,207 (21 p.c.)	4,200	60	22:1	336	3,553,902	444,238	3,998,140	4.00
(b)	Part time	-	2,631 (6 p.c.)	-	-	-	125	328,875	-	328,875	0.33
(iv) Senior Vocational Education	16-17	-	5,700 (13 p.c.)	-	-	-	-	2,608,725	429,330	3,038,055	3.01
(a)	Full time	-	3,069 (7 p.c.)	-	-	-	700	2,148,300	429,360 (20 p.c.)	2,577,660	2.58
(b)	Part time	-	2,631 (6 p.c.)	-	-	-	175	460,425	-	460,425	0.13
Total Second Level			49,737	-	-	-	-	14,334,252	1,671,473	16,013,125	16.02
THIRD LEVEL											
(i) Under Graduate Education	18-23	118,478	6,000	-	-	-	-	5,940,000	1,132,000	7,128,000	7.13
(a) General Education	-	-	3,000	5,400	60	15:1	780	2,340,000	464,000	2,808,000	2.81
(b) Professional Education	-	-	3,000	-	-	-	1200	3,600,000	720,000	4,320,000	4.32
(ii) Post Graduate Education	-	-	1,000	7,200	50	10:1	1851	1,854,000	370,800 (20 p.c.)	2,224,800	2.22
(iii) Part time education	-	-	3,000	-	-	-	300	900,000	-	900,000	0.90
(iv) Research	-	-	-	-	-	-	-	1,000,000	100,800	1,100,800	1.10
Total Third Level			10,000	-	-	-	-	9,694,000	1,659,600	11,353,600	11.35
Administration and Supervision.							1,355,353	-	1,355,353	1.35	
Teacher Training							1,370,000	-	1,370,000	1.67	
GRANT TOTAL			437,414	275,727	-	-	-	41,180,374	4,243,994	45,424,368	45.2

* The details do not add up to totals on account of rounding.

EDUCATION COMMISSION
GOVERNMENT OF INDIA

A note on textbook publication
in the U.S.S.R.

by Prof. S. Shumovsky.

In the USSR the task of providing good textbooks for students of all levels of education is considered as the most important.

In accordance with the accepted methods of education textbooks are needed by any student for his home work, for expanding and consolidating his knowledge gained in class room through lectures, seminars, laboratory practical work etc. They are especially needed by those students, who take correspondence course, because for them good textbooks and instructions how to use them are the only means of education, not counting some assistance given over the radio and television network.

So it is quite necessary to supply each student in primary and secondary schools, in vocational schools, polytechnics, university and higher technical Institutes with up-to-date textbooks, reference books and others on each subject. This is done on a countrywide basis and is conducted in accordance with an all-Union textbook planning system. It consists of five-year textbooks production plan and one year current textbooks production plan subdivided between various Republics, Ministries and publishing houses, but coordinated on a countrywide scale.

Due to the rapid expansion of education, increasingly more textbooks and school manuals are published in the USSR with each passing year. For instance, a total of 10,589 titles of textbooks and manuals with a circulation of 353,700,000 copies were published in 1962 which is more than double of 1940 and 14 per cent more than in 1961.

A large increase has been in the production of textbooks for primary and secondary schools. Some 293,900,000 copies of textbooks were published in 1962. These textbooks were printed in 55 languages of the peoples of the USSR and in 10 foreign languages.

Following table shows distribution of total number of textbooks between various forms of education.

Types of educational establishment	1955		1962	
	NO. of books (titles)	No. of copies	No. of books (titles)	No. of copies
General Educational Schools	2210	217,700,000	2611	293,900,000
Vocational Technical Schools	59	1,100,000	98	3,700,000
Polytechnics and other secondary specialized institutions.	934	8,200,000	1524	14,200,000
Universities and higher technical institutes	2091	22,200,000	5503	34,600,000
Various Training Colleges	499	7,100,000	853	7,400,000

In addition to textbooks, literature on methods of teaching and principles of education are published in the USSR on a rather wide scale. Some 11,000 books with a total circulation of close to 68,000,000 of this kind of literature were published in 1962 alone. In addition 210 pedagogical, subject-methods and other journals on questions of culture and education with a total annual circulation of more than 37,700,000 copies and 32 Newspapers for educators are published in the USSR.

This very large volume of production of various literature for educational purpose requires very well coordinated system of publications and of very rigid control of quality.

The textbooks are written by prominent scientists and experienced teachers. Frequently they are written on a competitive basis. Some textbooks are published in test editions for a practical check-up.

The process of writing, editing and publishing of textbooks.

There are three common methods for preparing necessary textbooks.

1. As soon as the syllabus on the course has been approved text-book on that subject should be written in accordance with the basic course

outlines. Often a competition on needed textbook is announced and consequently a number of original manuals will arrive. Usually four prizes are offered: a first and second prize and two consolation prizes. The publishing house establishes a jury composed of 7 to 12 highly qualified specialists. Then a contract between the prize winners and a publishing house is signed and books are published. The best book will bear the inscription like this: "Approved by the Ministry of Higher Education of the USSR as a textbook for mathematical departments of universities" or "approved by the Ministry of Education of the RSFSR as textbooks for 8th grade of secondary schools" etc. In cases where the textbook is quite different from those which were used before, it will be put out in limited circulation and tested for a year in a number of schools. Then some discussion about merits of this book will be carried and if it proves to be better than previously recommended, it can be printed in mass circulation and recommended by the Ministry as approved textbook for any school.

2. Some textbooks are written on a contract basis by well known scientists or a group of scientists who are invited for this purpose by the Ministry or by the publishing house. In this case, competition is not announced, but the manuscript is thoroughly scrutinized by several highly qualified specialists who will write on it a very detailed criticism. Then decision about recommendation of this manuscript as a textbook is taken by the board of scientists in particular field of science after which the Ministry gives to the publishing house a permit to put recommendation inscription on a title page of the book.

At present some of the most distinguished scientists in a country are involved in writing of textbooks for schools and universities. For instance, Nobel award winner academician SEMENOV is leading the group of other well known scientists in writing a new textbook on Chemistry for primary and secondary public schools. Same is done by academician KLKOLIN who with some other scientists is writing a modern textbook on physics also for public r.

schools.

Many other scientists, none of whom has anything to do with teaching on a primary or secondary school level are involved in writing of textbooks for these schools. Such practice helps to improve science teaching and to bring into schools some very new ideas based on recent developments in science. School teachers alone, without the help of this top level scientists would not be able to do it so well and in such a short period of time.

3. Many textbooks for Universities or Higher Engineering Institutes originate in these institutions and are written by their Professors. Then the manuscript is preliminary discussed in university and recommended to the Ministry.

Upon receipt of the manuscript Ministry will send it to two other well known scientists for critical scrutiny. After that a board of scientists in that particular field would discuss the manuscript and the critical remarks on it and would decide whether this manuscript should be accepted as recommended textbook or reference book. Upon recommendation of this Board, Ministry of Higher Education will issue to the publishing house a permit for printing of this book as recommended textbook or recommended reference book.

In accordance with existing regulation each Professor while writing a textbook or reference book is entitled either to a considerable reduction of his lecture hours or to the complete leave with full pay which can be extended upto one year, during which he devotes all his time to writing a book and has no other academic duties.

In order to coordinate all activity on textbook planning, writing and publishing, Ministries of Higher Education and Ministries of Public Education have special textbook sections which take care of all practical work connected with this very important and complicated task.

But approval of this or that manuscript is decided on only upon recommendation of a Board of Scientists in that particular field.

It would be proper to add that for some courses books are supplied not as a separate textbook, but in coordinated sets which will include for instance

textbook

reference book

Exercise book

Motion picture films or diafilms

Recorded tape or gramophone records
(for language study) etc.

Such set assists in further improvement of the quality of education.

Textbooks are sold through the bookshops and are supplied to the libraries. Books for elementary and secondary schools are sold primarily in the schools themselves usually at the end of the current year for next school year. They are also available in bookshops.

The cost of textbooks in the USSR is extremely low and therefore they are available to all students.

In Universities, higher technical institutes and many other educational institutions, in order to enable students to use many books and other publications during their studies, libraries are purchasing textbooks, reference books, science books, etc. in large quantities so that each student can take them for semester for a year and then return, when they are not needed any more.

In conclusion it can be said, that the system of textbook publication established in the USSR has proved to be quite successful.

A Note on New Instructional Methods

By
Sadatoshi Ihara

After visiting several institutes in India, I have felt the need for a new approach in technological higher education.

Man's mental powers may be classified into two categories from the standpoint of technological education: "Imaginative ability" and "formative ability". We may define imaginative ability as the intellectual power to conceive ideas regardless of their feasibility, and formative ability as the power to give concrete form to formless ideas. The problem of technological or engineering education is a problem of maintaining the proper balance between these two abilities and stimulating one without neglecting the other and maintaining a reaction between them. Instruction in the class-room and laboratory should also result in a corresponding inter-reaction of these abilities at each stage of education. A theoretical science such as mathematics, can be said to be essentially a function of imaginative ability although, as it has developed, it has its formative aspects as well whereas the workers' hand-craft is the clearest manifestation of formative ability. I should like to recall here Dewey's words, as suggested by Prof. R.N. Dogra: "It is the discipline of mind, whereby you develop an attitude of curiosity in the mind of the people or the student in respect of his environment and let him manipulate it; in that process he will educate himself." I believe that this inter-action between imaginative ability and formative ability is one way whereby we can achieve Dewey's objective.

In Japan, the long-term plan for economic development demands so much manpower that technological advance, economic growth and social development result in corresponding expansion, improvement and change in education to meet this demand. Universities and colleges must, therefore, expand enrolments and train students to increasingly higher levels of efficiency, in response to the advance of science and technology.

For this purpose, Prof. T. Takahashi and his collaborators have developed several new instructional methods in Engineering science and used them for three years in a model class. The final results have brought a wave of fresh air into the class-rooms; we

* From R.N. Dogra "Objective of technical education"

are now successfully using these methods with a 440 student class, and the Tokyo University has also begun to try using its own processes with the same objectives.

The following 'guidance' is an example used in "Mechanical Dynamics and Mathematics II" the principal subject in mechanical engineering. Other subjects could be treated in the same way. For a descriptive subject, this process will not be directly applicable.

Guidance for study*

(abstract)

A. Engineering Analysis and Design.

A.1. What kind of ability is necessary for an Engineer?

The ability of an engineer can be verified only when his knowledge has materialized into an actual tool.

Mere knowledge is nothing but an accessory and it is not ability at all. The ability of an engineer consists of the following:

- (a) The ability to meet man's basic material desires in a creative way;
- (b) The ability to synthesize various fields of Engineering Science in meeting these desires; and
- (c) The ability of getting things done as an authority in his special field.

Therefore, there is no such thing as a theoretical engineer.

An Engineer must:

- (a) think creatively (i.e. of his own accord),
- (b) judge,
- (c) make up his mind,

otherwise, he cannot act.

(A purely intellectual viewpoint, be it in the mastering of University subjects or engineering science, does not ensure action. Rather, it might make a Hamlet of the engineer.)

The purpose of engineering analysis is to make the student a 'doer' through the task of designing.

Now, I believe that you are already familiar with engineering analysis (its helpfulness, its hard training and severity) because you went through an Engineering exercise in the 1st year and

*Planned by Prof. T. Takahashi, Waseda University..

mathematics I (system analysis) in 2nd year.

In the two courses you might have discovered that you were not so much a brilliant boy as you yourself thought. So much the better; this realization is the starting point in all your endeavour.

A.2. Tips for Engineering Analysis:

- (a) study when you don't know;
- (b) get used to it when you are not accustomed to it;
- (c) Reason logically when you can't understand;
- (d) Check, when you are not sure.

A.3. Methods for Engineering Analysis:

- (a) Think of alternatives when you get stuck.

In creation, an alternative means every other conceivable idea.

In analysis, it means every other available physical principle and mathematical method.

- (b) Simplify;

In the creation of a design and in the analysis of a problem, to simplify means to discard all subordinates so as to retain only primary elements. In other words, it means to formulate a model or system.

- (c) Have a broad and flexible viewpoint. Don't stick to a narrow viewpoint which happens to coincide with what you already know.

Grasp a problem in its entirety. This becomes possible when you can think broadly, that is, without prejudice or bias.

- (d) Have a full command of basic principles. As a means to solving a problem, utilize pure science, engineering sciences and other relevant theories.

- (e) Make a decision.

In all stages of designing and analysing, it is essential to have the ability and the will of making a decision.

- (f) Have keen curiosity and learn from experience.

Accept all ideas and try to apply them to a problem in creation and analysis..

A.4 Assignment system.

It is a matter of fact that the professor and the students of engineering analysis are going to have their hands full.

Therefore, they must plan their study thoroughly.

(Requisite: Mechanical dynamics } in 2nd year
Applied Mathematics }

B-1 Attitude in doing preparation.

I am going to give you an assignment of about 10 pages of the text every week. You are to prepare on the following 2 points:-

(1) What is intended and why?

(2) What is it about?

(Description of a fact, formation and transformation of mathematical expression, process leading to a conclusion).

Point (1) is a question based on the fundamental attitude in facing an engineering problem. Point (2) is a question in handling the problem.

You have a tendency of going straight to point (2) and skipping point (1).

You must be very careful in this respect, because it is point (1) that counts in fostering the ability of imagination, planning and originality.

Even though you may be perfect in point (2), you are only perfect as a craftsman. If you are perfect only in point (1), you are only a critic.

Don't forget that both these points are complementary, not contradictory.

Point (1) requires a grasp of a situation as a whole without considering into details. You must come to the point by reading extensively and rapidly. On the contrary, point (2) requires going after item by item in mathematical progression.

Since you don't have engineering experience, I am going to put emphasis on point (1) in the first half class. You are supposed to do point (2) 70 or 90%. It can't be that you are utterly at a loss, for you have one week and have ample opportunity to ask teaching assistants and friends.

Through this system, I urge you to acquire a forward-looking and voluntary attitude of studying. Since the pace of innovation in engineering is so tremendous to-day, you can't keep up with it if you stick only to a passive attitude.

C. Personnel and materials.

Professor & lecturer	3 or 1 persons
Teaching assistant	part-time service of student of graduate school
Service hours:	not over 6 hours/week (average 3 hrs/week)
Number of T.A.	30 or 20 persons.
Service	Counselling in seminar and O.A.M/ preparation of materials,/ arrangement or report.
Student	20 persons/group/T.A. in Seminar.

Annual Instruction Schedule
Text (-----)

Date		page	Paragraph	Target
4. 15	(1)	1-14	90-91	-----
22	(2)	14-23	9'2	---

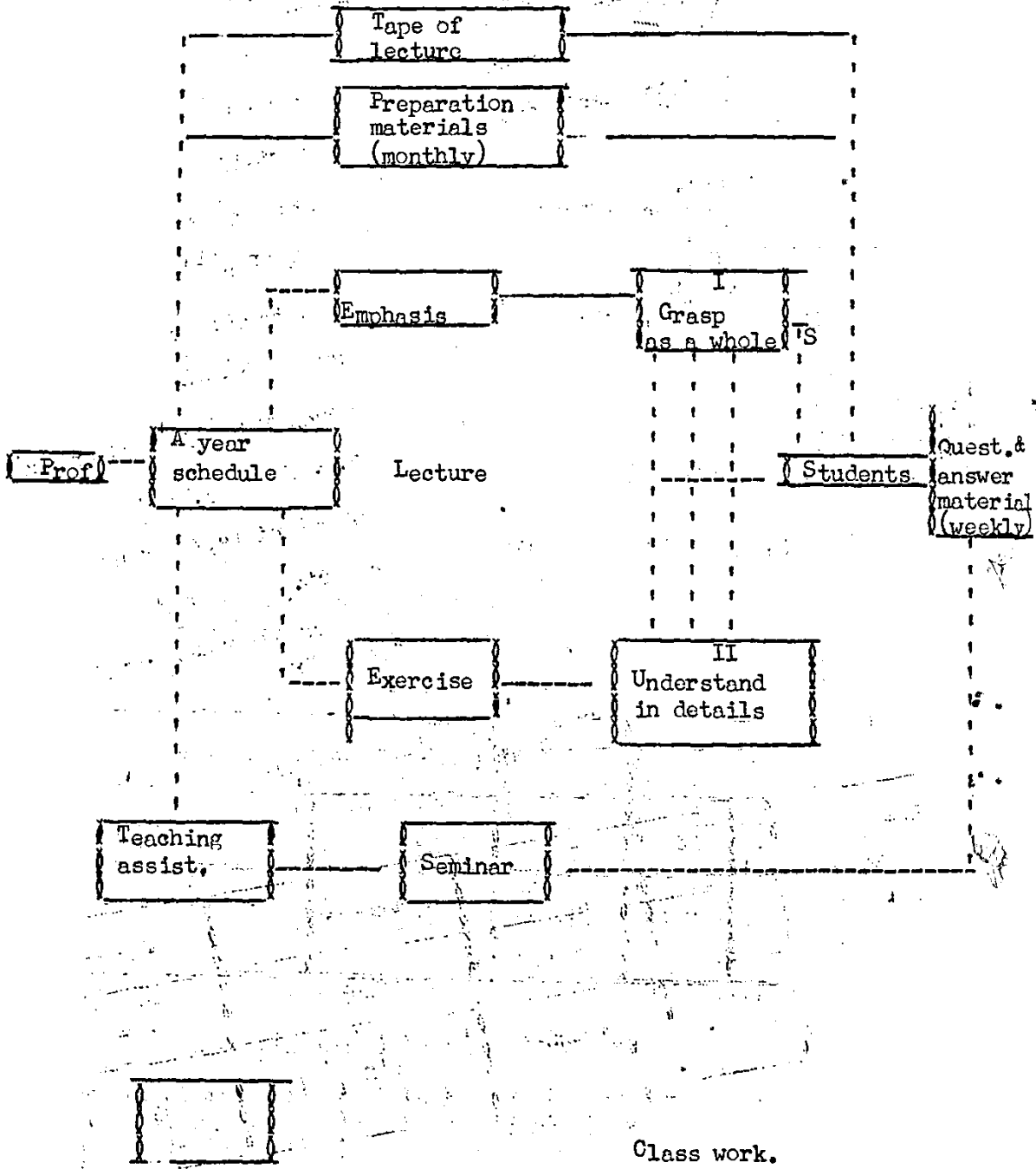
Preparation material (monthly)

= Detail instruction) in ((1) What is intended) for
and indication) { and why? } the
((2) What it is about? } target

Questions and answers (weekly)

= Arbitrary for the target;

D. Function Diagram.



EDUCATION COMMISSION
GOVERNMENT OF INDIA

WHERE ANGELS FEAR TO TREAD
BY DR. HORTIMER SMITH

The first thought that comes to mind when one is asked to discuss the education of teachers is this: What can possibly be said on the subject that has not been said a thousand times before? In view of all the print which has been used up in recent years on the question, everyone by now should know both the school men and the academics propose to educate teachers. I am not sure I can contribute new wisdom on the subject, but perhaps there is some usefulness in presenting what I trust is a fresh point of view. By this I mean that I am neither a schoolman nor an academic, but a journalist and writer who entered the field of education through the non-professional route of service on a school board. While I am an officer of an educational organization which has taken a public stand on matters relating to the education of teachers I prefer here to speak only for myself and to attempt to present a fairly distinct personal view rather than an inevitably less sharply focused organizational view. In other words, although I am certain that the members of the group I represent, the Council for Basic Education, are headed in my direction, I would not wish to commit them to my precise route.

I must confess at once that, in my view, the question of how the teacher should be educated is not a particularly complicated one, despite the agonizing over it in recent years. A sound basic education for the teachers is the same as a sound basic education for the lawyer, doctor, banker, salesman, or housewife. We must begin with the prospective teacher as human being rather than technician;

that is, we should assume that before anything else the teachers-to-be needs to be broadly and liberally educated.

Some of the more cynical educationists (and in my opinion some of these are the most cynical people in the world when it comes to the educability of American youth) are apt to scoff at emphasis on a broad and liberal education for teachers as a futile exercise in teaching corn-fed young girls fresh from the intellectual ardors of the 4-H Club now to read Middle High German or to trace the line of literary allusion in T.S.Eliot. But if we believe in education at all, and in the teacher as the transmitting agent for education and for the common heritage of civilization, we must assume that the important things in training a teacher are to furnish him with the best thought of man in history; to stimulate in him respect for things of the mind, for intellectual activity and for the functioning of scholarship; to give him a mastery of the subject or subjects he is to teach.

VISIONS OF GREATNESS

To develop this kind of intelligence and mastery, the proper curriculum for teachers consists of the liberal subjects, such as the various divisions of science and mathematics, history, languages, literature, and philosophy subjects forming a combination of what Sir Richard Livingstone has called the two roads to knowledge, that of analysis (the sciences) and that of intuition or imagination (the humanities). These subjects can provide, in Whitehead's frequently quoted remark, "the habitual vision of greatness" without which moral education is impossible. That vision cannot be provided by courses in Group activities in Secondary Schools or Pre-project and

and Pre-seminar Conferences in the Core Curriculum.

The problem, then, of how to educate teachers is no problem at all, so far as knowing what is needed is concerned. Teachers require; as do all who would be educated, long exposure to the traditional liberal arts. That knowledge of these arts is the proper professional training for teachers has always been assumed in higher education and among private schools. It is only in public education that a counter-tradition has arisen which dictates that the teacher is not qualified, no matter how extensive his academic education, unless he has been exposed to generous dosages of "professional" courses.

What in less pretentious days was called "pedagogy" certainly has a place in the training of teachers, but not in the inflated amounts common today. If we examine the certification requirements in some states, the amount of professional course work required may seem reasonable, but if we would have an accurate picture of the extent of professional courses, we must look not at state requirements but at what students, under pressure from professional faculties, actually take. A forthcoming report* on the education of teachers says that secondary teachers of academic subjects take an average of almost one year's work in Education, and elementary teachers devote an average of about 40 per cent of their college work to it.

How much pedagogy should there be, of what should it consist, and who should teach it? As far as amount is concerned, I have always thought that James B. Angell,

* According to a study by J. Acerner to be published in Boston by Houghton Mifflin this spring.

president of the University of Michigan (which was a pioneering institution in introducing Education courses), had about the right idea back in 1874, when he suggested to the Board of Regents that "although experience alone can thoroughly train" teachers, it might be nice to have "some familiar lectures" at the university on "the art of teaching and governing a school." He thought that "a non-resident lecturer occupying a part of the year might meet the wants of our students" (5). I would gladly settle today for a few familiar lectures in place of the elaborate and repetitious structure of "professionalism" which has been built up in the last 40 years. What proportion of educational courses is useful was once suggested by Stephen Leacock (who, it should be remembered, was a successful teacher as well as a humorist) when he said that such courses are "about 10 per cent solid value and 90 per cent mixed humbug and wind" (6).

PEDAGOGICAL PITH

Methods courses for both elementary and high school teachers should be taught, in my opinion, by authorities in subjects matter; methods of teaching English, for example, should be taught by English teachers, not by professors of "English education." Such courses should be brief, and they should be tied to specifics: They should show the student how to teach a poem or novel or short story. The procedure would be similar for elementary arithmetic or American history or geography. I suspect that the most important part of the teacher's training consists of practice teaching, carrying out the Deweyan principle of learning by doings; and I believe that the majority of teachers are apt to look upon this as the most useful part of their professional training.

One of the troubles with professional courses is that so many of them are not actually pedagogical at all, in the sense of dealing with the principles and methods of teaching. Many teachers, especially on the elementary level, complain that their professional courses deal too much with generalities and platitudes - with what the late Harold Clapp called the care and feeding of the bulletin board - and too little with actual methods of teaching arithmetic, reading, and history. The complaint is not that there are too many "how to" courses, but that the courses do not really show you how to do it.

For instance, in the all-important field of reading instruction, there is apparently little phonetic training for future teachers, a training absolutely necessary for anyone who expects to teach children how to read. Carl Hansen, superintendent of schools in the District of Columbia, has said that present-day teachers "belong to those lost generations who went through school without systematic instruction in this field." If, as seems likely, there is to be a swing away from present eclectic methods of teaching reading and back to organized phonics, prospective teachers will need phonetic training. Such training should be given in college by scholars in language, not by reading "experts" who are often not themselves trained in phonetics.

Some pedagogical courses in their present form probably should not be taught at all. Take "guidance," for example. If I properly understand the rise of the guidance movement in this country, it was originally an attempt to help students plan appropriate academic programs, but this function has come to be overshadowed by another function, counseling in personal problems. This

does not seem to me to be a proper function for school personnel, especially for the amateur Freudists who now practice guidance. If the student is in genuine need of help in his emotional or personality adjustment, he should be treated by competent persons who have been trained in the proper professional disciplines, not in the kind of guidance courses now given in teachers colleges. The nature of such courses was well summed up by Charles C. Anderson of the University of Alberta, after visiting schools of education in the American west:

Guidance struck me as a hybrid melange of watered-down child psychology, mental health, tests and measurement, and non-practical clinical psychology. The subject never struck me as having any academic significance, and its existence presupposed that the teacher was a fool. The less distinguished the institution, the greater the proliferation of its courses in guidance (1).

I also have some prejudices about "educational research" as a course of study. I doubt if there is much place for courses in this subject in undergraduate programs, and on the graduate level, they have often come to mean teaching the modern paraphernalia of questionnaires, head-counting, and card-filling which goes by the name of research. There is much unnecessary research in education today; nobody believes in what his common sense tells him, but must always have it proven by elaborate "scientific" evidence. I have recently been reading a book by an educational sociologist who went to elaborate pains to "prove," among other earth-shaking things, that the job of a superintendent in a

small town is different from the job of a superintendent in a big city, a "finding," surely, which any sixth grader could have provided without benefit of a foundation grant. It was a professional educator and not a sour academic who recently said, "As I watch the shenanigans that take place in our colleges of education in the name of research, I am repeatedly amazed at our capacity for self-deception" (3),

EMPIRE OF CULTS AND TRIVIA

I would also be willing to dispense with "child development and human growth," another "area" which has burgeoned in recent years, more as a cult than as a study. The "experts" here are the ones who indoctrinated American educators and teachers with concepts of readiness, postponement, and permissiveness, and who convinced many of them that the function of the school is not so much to teach the three Rs as it is to provide "rich, socializing experiences." Many of their doctrinaire positions - that sacred cow, "readiness," for example - have been undermined by the research of academic psychologists, but they cling to their positions and deplore the current talk about strengthening the academic program in elementary school, and wring their hands in distress at the thought of teaching five - and six-year-olds how to read. There is, of course, little possibility that professional courses will not continue to be given, and in specialized departments and schools, manned by educationists. But if such courses are inevitable, can we not at least expect those in charge to keep them within bounds and not to tolerate trivia? There is supposed to be a fresh wind, or at least a mild breeze, blowing through schools of education these days, but I learn

from a recent article in Newsweek, which describes the "new" Teachers College, Columbia University, that last summer several dozen students at that institution were taking courses, for academic credit, in the intricacies of the box step in Social Dance.

On a less trivial level, John H. Fischer, president of Teachers College, has recently suggested in an article in the New York Times Magazine that teachers should be "properly prepared" in the "appropriate use" of television, films, tapes, projectors, and recorders. I agree, but what is meant by "properly prepared"? I daresay one could learn to operate a projector, or even a teaching machine, in a few hours at the most; and as to their "appropriate use," isn't this chiefly something to be settled by the reflective consideration and common sense of the teacher on the job, rather than by a full-blown course in Principles of Audio-Visual Aids - which will carry just as much credit as a course in history or a foreign language? This kind of inflation of the already distended body of professional education is what makes the academics suspect the building of an empire rather than a body of truly professional knowledge.

Empire building has indeed, as is well known, marked the rise of professionalism in education in this country. It is ironic that in a land which prides itself on freedom from governmental dictation and control in education, there has been erected a vast interlocking directorate of educationists, working through schools of education, accrediting associations, certification practices, and national educational organizations - a directorate which has been able to set the tone and direction of public education. What William Chandler Bagley of Teachers

College said many years ago about the power of professors of education is even more true today than when he said it:

Collectively they are discharging functions almost analogous to those that a responsible ministry of education would discharge under a highly centralized government. In a very real sense they are determining the course that American education is taking, and in the long run this is likely to affect profoundly the course that the nation will take in the future(4).

The dangers of control by "the bureaucracies of large and powerful educational organizations" have been pointed out recently by former US Commissioner of Education Sterling M. McMurrin. "These bureaucracies," said Dr. McMurrin, "are just as real, and exhibit all the vices of a government bureaucracy. Their control of the schools is not beyond possibility unless their leaders are genuinely responsible to their constituents, and there is no reason for believing that such control would be any more desirable than Federal control."²

SOME RAYS OF SUNLIGHT

Fortunately, there are some indications that the "directoriate" is less rigid in its view of teacher education than it was a few years ago. Some professional educators, partly through honest conversion and partly tempted by generous foundation grants, are participating in such new programs as the Master of Arts in Teaching programs, which recognize the liberal arts as the fundamental part of teacher preparation. There is, of course, constant

² From remarks made by Dr. McMurrin in Washington, D.C., at the annual meeting of the Council for Basic Education, 20 Oct., 1962.

pressure on the professionals from the public at large, which is increasingly skeptical of the necessity for that bifurcation which insists that some are just plain, whereas others are professional, educators. As Edward Gordon, head of Yale's Master of Arts in Teaching program and a "nonprofessional," has said, the use of the word professional in education "gives the impression that all other educators are amateurs - even though we take money for teaching. The implication is clear; the connotation of 'professional' is that knowledge is on one side and ignorance on the other."³

I now that my point of view about teacher training will be considered too simple and unsophisticated, even by many people who share my distaste for excessive professionalism. As I have suggested here, the essence of my position is that the heart of the teacher's preparation consists of his four-year college education in the liberal arts, a modicum of methodology taught by his instructors in academic subject matter, plus practice teaching. If this view of teacher training were to be widely accepted, it would, I am convinced, do much to attract into teaching those able students who are now repelled by the mediocrity and repetitiousness of education courses; moreover, it might help to keep out of teaching some of the horde of students with Caverages who now manage to get into teachers colleges.

The nearest approach to this system that I know anything about is the teacher education program for seniors conducted at Barnard College, the purpose of which is to

³ As quoted in the Louisville, Ky., Courier-Journal for 19 May, 1961.

"recruit top-quality undergraduates for teaching in the schools and to give them a practical start in teaching as a career, with a minimum of theoretical pedagogy and a maximum of substantial subject-matter" (2). Here future secondary teachers (unfortunately, the program for elementary teachers has had to be discontinued) take a regular four-year liberal arts course and carry a regular academic major. In their senior year, the trainees take courses in psychology, a course in the history of education taught at Columbia, and a course in the philosophy of education, taught by the philosophy department of Barnard. In the latter, they are expected to read and discuss generous portions of the writings of the great educational philosophers - Plato, Aristotle, John Locke, Rousseau, John Henry Newman, and John Dewey. The program includes practice teaching in New York City public and private high schools and courses in the materials and methods of teaching. Up until this year, it has also included a weekly two-hour colloquium at which outstanding figures in education, representing diverse points of view, were the speakers. Granted a good student and an able liberal arts faculty, this seems to me to be the ideal way in which to train teachers at the undergraduate level. It may seem too simple to some of my readers, but its simplicity is what I like about it. (I warned at the outset that I do not consider the education of teacher to be a particularly complicated matter.)

TOWARD TEACHER-SCHOLARS

Let me interject here a mild protest against the now almost universal assumption that the proper pattern for all teachers in the future would include a fifth

year of college training. It seems to me that sixteen years of formal education is sufficient for an intelligent and alert teacher, who, if he does possess these qualities, will continue the process of self education throughout his life. This is not to say that a fifth (or a sixth or a seventh) year would not be beneficial, always assuming that the course work is solid fare; but I think it is a mistake to erect the five-year idea into a universal principle. Certainly, a teacher who is a wide reader and who has varied cultural and intellectual interest is a better staff member than the unimaginative note-taker who goes off religiously every summer for educational courses to make up his fifth year.

The more I brood over the question of how teacher should be educated, the more I tend to the conclusion that Education with a capital E cannot be reformed. It cannot be reformed because as an academic subject it does not really exist. Educational philosophy, educational psychology, educational history - these seem to me to be hopelessly contrived and artificial subjects. The philosophy of education, as Dewey himself maintained, is a part of philosophy and cannot be separated from it; and Sterling McMurrin says it should only be taught by those qualified to teach philosophy. This is true of the history of education, which should be taught, as part of general history, by an historian in an academic department of history. The laws of learning (if any clear-cut laws exist) and of human growth are subjects for investigation by academic psychologists and should not be compartmentalized and put in a slot marked "educational psychology."

In short, I believe the preparation, both academic and pedagogical, of teachers should be the province of subject-matter specialists. The primary aim of teacher education is, to quote Bagley again, to produce teacher-scholars "who know their subjects with a personal and passionate devotion, and whose chief aim in life is to get others to know and love their subjects." To produce such teachers we need to strengthen their natural training ground, the liberal arts college. If we would re-direct half the effort and funds now invested in "gimmicks" in teacher training towards improving undergraduate liberal education, we could make real, if unspectacular, advances in training the teachers needed for American schools.

REFERENCES

1. Anderson, C. A Canadian critic on teacher education in western USA. *School & Soc.*, 1960, 88, 204-207.
2. Bailey, Helen. The Barnard experiment in teacher education. *High School J.*, 1960, 43, 158-163.
3. Halpin, A. Dissemination and implementation. In *Third annual symposium on educational research*, Bloomington, Ind. Phi Delta Kappa, 1962. Pp. 171-200.
4. Kandell, I. William Chandler Bagley. New York: *Tchrs. Coll. Bur. Publ.*, Columbia Univer., 1961.
5. Knight, E. *Fifty years of American education*, New York: Ronald Press, 1952.
6. Leacock, S. *The boy I left behind me*. New York: Doubleday, 1946.

EDUCATION COMMISSION
GOVERNMENT OF INDIA

The study in the Costs of Education in India, which has now been undertaken will, it is hoped, result in the following twelve monographs :-

- (1) Educational Expenditure in India (1950-51 to 1960-61)
- (2) Financial Assistance to Students in India (1950-51 to 1960-61)
- (3) Equality of Educational Opportunity - A Study at the National Level (1956-57 to 1960-61)
- (4) Educational Expenditure in India by States (1956-57 to 1961-62)
- (5) Educational Development in the Districts in India (1961)
- (6) Educational Expenditure in India during the Third Five-Year Plan (1961-62 to 1965-66)
- (7) A Study of Grant-in-Aid System of India with special reference to Colleges of Arts and Science, Secondary Schools and Elementary Schools (1965-66)
- (8) Financial Assistance to Students in India during the Third Five-Year Plan (1961-62 to 1965-66)
- (9) Salaries of Teachers in India during the first three Five-Year Plans (1951-52 to 1965-66)
- (10) A Study of the Educational Expenditure in the first three Five-Year Plans (1951-52 to 1965-66)
- (11) A Study of Unit Costs of Education in India.
- (12) A Study of the Growth of Educational Expenditure in India during the Fourth, Fifth and Sixth Five-Year Plans (1966-67 to 1980-81).

J.P. Naik
Member-Secretary

P.S. to Chairman
All Members of the Commission
All Officers of the Commission.