CHAPTER - V

EXPENDITURE ON PROFESSIONAL EDUCATION (SCHOOL-LEVEL)

I

The preceding chapter was devoted to the study of trend in the recorded direct expenditure incurred on the nonprofessional schools of the second level of education in India. We devote this chapter to the professional schools at this level. They include vocational and technical schools, teacher training schools and exclude schools for special education.[1]

Expenditure on technical and teacher training schools can be regarded as a purely 'Investment Expenditure' because the element of consumption (which can be said to exist when

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1 (i) Vocational and technical schools cover the following categories of vocational education : (a) Agriculture, (b) Arts and Crafts, (c) Commerce, (d) Engineering, (e) Forestery, (f) Industry, (g) Medicine (h) Physical education, (i) technology - polytechnic, (j) veterinary and (k) others.

(ii) Teacher training schools include both types of training schools - basic and non-basic.

(iii) Special education schools include schools for (a) music, dance, (c) other fine arts, (d) oriental studies, (e) social workers, (f) social (adult) education, (g) reformatory and (h) handicapped persons. In terms of enrolment social (adult) education schools account for about 90 per cent of the total enrolment in special schools.

education is taken or imparted for the sake of education) is absent in this type of education. It is directly productive. The same holds for teacher training schools but not for special schools. The special schools are a class by themselves, and though professional in a sense, they impart instruction of a type, be it in music or fine arts, be it intended for adults or for handicapped children of one description or another, its content is mostly of the general or liberal variety.

Technical and teacher training schools assist the growth process by meeting the requirements for the type or types of technically trained personnel of a developing economy. They fulfil the demand of two sectors - Industrial Sector and Education Sector - for trained personnel, - workers and teachers.

Their expansion has to be planned in line with the expanding demand of a developing economy. More and more persons with special training will be demanded. So, more such schools are to be opened to cope with the demand.

This makes it necessary that the system of education should shift its emphasis from general or liberal education to technical education, imparting special training in

various skills.[2]

With the accent on industrialisation in the Indian plans, the demand for skilled personnel is bound to increase at a fast rate. It is naturally of great interest to study how the system of education in India is being readjusted to meet the above demand. This is equally applicable to professional higher education.

A study of the trends in expenditure and connected variables should help us in answering this question.

II

Trend in Expenditure :

Over the period under review, 1950-51 to 1960-61, the total direct expenditure on professional schools increased from Rs.36.9 million in 1950-51 to Rs.114.1 million in 1960-61, indicating a decennial rate of growth of 209.2 per cent. This growth rate is slightly higher compared to the growth rate of 191.3 per cent recorded for the non-professional schools (See Table-I). Still, we spent nearly 6 times more

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2. The Robbins Report on Higher Education (163) makes an interesting observation in this context :

"..... And it must be recognised that in our times, progress and particularly the maintenance of a competitive position - depends to a much greater extent than ever before on skills demanding special training. A good general education, valuable though it may be, is frequently less than we need to solve many of our most pressing problems".

in 1950-51 on general education at the secondary stage than on professional schools. In 1960-61, expenditure incurred on general education was lower at approximately five times the expenditure incurred on professional schools.

The increase in expenditure referred to above is in current prices. In Table I , following the procedure outlined in earlier chapters of expressing the increases in expenditure in constant prices, the increase in total direct expenditure incurred on professional schools of the second level has been calculated in terms of constant indices. The increase in direct expenditure, in terms of constant salary-per-teacher and constant wholesale prices, works out to 131.4 per cent over the period. In terms of constant prices, salary expenditure in professional schools went up by 64.6 per cent and non-salary expenditure by 207.8 per cent.

The increase in expenditure on professional schools in real terms is lower than the corresponding increase of 143.3 per cent in direct expenditure on general education at the secondary stage.

The growth rates of expenditure obtained above clearly indicate that the professional schools are not expanding as fast as the non-professional schools. But this is bound

to create an impression that the expansion of education at the secondary stage is not taking place in a manner consistent with the manpower requirements of development. Such an impression is not wholly warranted.

Taking technical schools by themselves, the rate of growth of expenditure in terms of constant salary-per-teacher combined with constant wholesale prices works out to 146.5 per cent which is higher than the rate obtained for general education. For teachers' training schools the rate of growth is 112.5 per cent.

Public Expenditure and Its Allocation :

Of the total direct expenditure incurred on professional schools in 1950-51, 77.5 per cent was met out of government funds.This proportion went up to 80 per cent in 1960-61 giving a rise of 219.2 per cent in the absolute outlay of the government funds. This is even higher than the growth rate of 209.2 per cent obtained for total direct expenditure. Still this growth rate is low compared to that of 300.0 per cent obtained for the non-professional schools. But the proportion of public expenditure to total direct expenditure with respect to professional schools was higher at 80 per cent in 1960-61 compared to the proportion of 53 per cent obtained for the non-professional secondary schools.

Of the total public expenditure incurred on the second level as a whole (including both professional and non-

-professional schools) of Rs.119.2 million in 1950-51, Rs. 90.6 million (or 76 per cent) was spent on non-professional schools. Of the total public expenditure of Rs.454.4 million in 1960-61, the non-professional schools accounted for Rs.363.1 million (or 80 per cent). This shows that the government bodies spent in 1960-61 nearly four times as much on non-professional schools as that on professional schools. Public expenditure on professional schools was Rs.91.3 million in 1960-61 (See Table III).

Allowing for the fact that some non-professional schools have technical departments and impart technical education, still the public expenditure on non-professional schools is very much larger than on professional schools.

Trend in Enrolment and Per-Pulil Direct Expenditure :

From Table IV-A, it can be observed that the total enrolment at the second level of education (i.e. professional and non-professional schools) increased from 1.4 million in 1950-51 to 3.5 million in 1960-61 - a growth of 142.0 per cent. The growth rate of enrolment was of the order of 114.2 per cent in professional schools. In non-professional schools of this level the corresponding growth rate over the decade of 1950's was 146.1 per cent. The growth rate of expenditure incurred on technical and teachers'

training schools on the one hand and non-professional schools on the other, was 209.2 per cent and 191.3 per cent respectively. Thus the growth rate of expenditure in current prices in both types of schools, professional and non-professional, exceeds the growth rate of enrolment. In terms of constant prices, however, the increase in expenditure is higher than that of enrolment only with respect to professional schools.The growth rate of real expenditure for professional schools was 131.4 per cent whereas for general education schools at the secondary stage it was 143.3 per cent.

This gives a rise of 8.2 per cent in per-pupil direct expenditure in real terms in professional schools (Col.7 Table IV-B) as against the decline of 1.2 per cent in per-pupil real expenditure in non-professional schools.

Of even greater interest is the distribution of pupils at the second level of education. The total enrolment in non-professional schools in 1950-51 was nearly 7.5 times as high[illegible] as that in professional schools. In 1960-61 the gap was even wider. The former was nearly 8.5 times the latter.

Teacher-Pupil Ratio :

It can be seen from Table V that the teacher-pupil ratio of 1:11.4 in professional schools in 1950-51 declined

to 1:14.7 in 1960-61 - a fall in ratio of 29 per cent. This means that there were more students per teacher in professional schools in 1960-61 than in 1950-51. As against this, the ratio declined by only 2.2 per cent in non-professional schools at the secondary stage. Still the ratio in the secondary stage of non-professional school was lower at 1:18.4 in 1960-61. This fall in ratio is due mainly to the decline of 55 per cent in teacher-pupil ratio in vocational and technical schools. The ratio has actually increased (i.e. there are fewer students per teacher) with respect to teachers' training schools.

This naturally leads one to feel that a deterioration in the standard of professional education in India might have taken place in the decade of 1950's.

In terms of absolute number of students per teacher, it can be observed that despite the steeper fall in teacher-pupil ratio in professional schools, there were in 1960-61 still fewer students in professional schools (15 per teacher) compared to the students per teacher in non-professional schools at the secondary stage (18 per teacher). This indicates that the ratio is still high in professional schools. In fact, it could be argued that the decline in teacher-pupil ratio should be viewed with satisfaction because this

reflects fuller utilization of schooling facilities available in professional schools. As we shall observe in the following section there is a great deal of substance in this argument because it appears on the basis of an international comparison of teacher-pupil ratio that the Indian ratio is possibly much above the optimum ratio and therefore indicates under-utilization of capacity.

III

Level of Expenditure :

For appraising the state of professional education (School level) in India, here also, we resort to the technique of making comparisons of the trends in expenditure and other related variables in professional schools in India with those of similar schools of both the developed and the underdeveloped countries.

Teacher-Pupil Ratio :

As observed earlier, the number of students per teacher in India increased by 29 per cent and still the number of students per teacher in 1960-61 was 14.7. In comparison, in West Germany the number was 27, in Japan 22 and in Canada also 22.2. On the other hand in several underdeveloped countries such as Iraq, Indonesia and U.A.R., the number was

much lower at 14.6, 14.0, and 12.7 respectively.(See Table VI)

This gives one strong reason to suspect that ratios are rather high in underdeveloped countries, including India, and that most probably quality in professional schools would not suffer if the teacher-pupil ratio is allowed to decline somewnat. Of course, this raises the question of complementary non-salary expenditure (current and capital) and it might well be that under-utilization of teacher capacity might be caused by the short-fall in non-salary expenditure.

Actually, however, as observed above, the rate of growth in real terms in non-salary expenditure during the last decade has been more than thrice as fast as in salary expenditure. This being the case, it does appear to us that under-utilization of capacity exists in Indian professional schools at the school level. This brings to our attention the possibility of enrolling pupils in still larger number without at the same time increasing the supply of teachers.

Enrolment in Professional and Non-Professional Schools :

Against the total enrolment at the secondary stage in India in non-professional schools of 3.1 million in 1960-61, enrolment in professional schools was only 0.4

million. Thus only 9.4 per cent of the students enrolled at the secondary stage were studying in professional schools. This proportion is lowest compared not only to that of the developed countries but also to that of the under-developed countries (See Table VII).

This may be taken to show that the re-adjustment in the system of secondary education in India has been taking place very slowly and taking long time.

A shift in bias in secondary education from liberal to technical subjects is necessary not only from the narrow point of view of meeting the increasing demand for technically trained hands but also from the much broader point of view of creating within the country a climate conducive to technological advance. What a difference it would make, if at some stage in India too as in West Germany for every 10 students taking secondary school courses in liberal subjects there are 11 taking technical courses, to the whole economic climate of the country.

Expenditure on Professional and Non-Professional Schools :

The impression that enough is not being done in India towards a readjustment of educational bias at the secondary stage gets further confirmation from Table VIII. The

proportion of total expenditure on secondary education, in India going to technical schools is 11.7 per cent. In Iraq and the Philippines, the corresponding percentages are 20.4 and 48.0 pespectively. In Swe¢den, France and Germany, the comparable percentages are 29.0, 38.4 and 39.1 respectively.

What is the remedy to the existing situation? If we assume that the additional funds available for the expansion of facilities at the secondary stage as a whole are fixed over, say the next period, expansion of the technical side can take place only at the expense of the general education. This would mean a drop[3] in enrolment in non-professional schools unless the teacher-pupil ratio in these schools is allowed to decline. But, as we have observe, on the basis of international comparison, there appears to be the scope for raising the number of students per teacher at the secondary stage both in the professional as well as non-professional schools. However, the scope appears to be greater in professional schools for raising the number of students per teacher.[4]

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3 Per pupil direct expenditure in technical schools was roughly 50 per cent higher than that in general education schools in the year 1960-61. On this basis, for every 2 students additionally admitted to technical schools, 3 students will be sent back from the general education schools.

4 At the 1960-61 level of teacher-pupil ratios, the number in technical schools could be raised by 15 per cent if the ratio in technical schools is reduced to that in the general education schools. The number can be increased by 70 per cent if the ratio is allowed to decline to the level obtaining in Germany.

Conclusions :

The allocation of the direct expenditure incurred on the second level of education between professional and non-professional schools and the distribution of pupils between two types of schools show that the re-adjustment in the system of education has been taking place rather slowly in India.

International comparisons, on the basis of the above referred to two variables, show that there is a high concentration of expenditure as well as students in non-professional schools in India.

It appears that the prime need today is the vocationalising of secondary education. And also there appears to be reasonably good prospects of increasing the enrolment capacity of professional schools by lowering the teacher-pupil ratio and at the same time without influencing adversely the quality of education.

TABLE - I

Progress of Direct Expenditure on Professional Schools in Current and Constant Prices

(In Rs. million)

Year	Total Direct Expenditure in current prices	Salary Expenditure in current prices	Non-Salary Expenditure in current prices	Salary Expenditure in constant salary-per--teacher	Non-Salary Expenditure in constant wholesale prices	Total Direct Expenditure in 'composite index' (4+5)
	1	2	3	4	5	6
1950-51	36.9	19.8	17.1	19.8	17.1	36.9
1951-52	39.6	21.0	18.6	20.9	18.7	39.6
1952-53	40.1	20.7	19.4	20.9	21.5	42.4
1953-54	40.5	21.7	18.8	22.1	20.8	42.9
1954-55	46.0	24.2	21.8	24.4	25.2	49.6
1955-56	54.6	26.0	28.6	28.4	34.6	63.0
1956-57	58.0	30.4	27.6	29.3	29.3	58.6
1957-58	72.2	35.3	36.9	31.4	38.1	69.5
1958-59	82.1	40.3	37.8	34.3	37.4	71.7
1959-60	92.9	45.6	47.3	37.5	45.2	82.7
1960-61	114.1	55.4	58.7	32.8	52.6	85.4
Decennial growth rate	209.2%	179.8%	243.3%	64.6%	207.8%	131.4%

Source: Col.1. Based on the Report on 'Education in India', Vol.I, Ministry of Education, Govt.of India.

Cols.2&3: Based on the same source as Col.1.

Col.4: Col.2 is expressed in terms of 'Salary - Index' (See Col.4, Table II).

Col.5. Col.3 is expressed in terms of constant wholesale prices.

Col.6. Col.4 + Col.5.

TABLE - II

Salary-Index of Professional School Teachers

Year	Total number of teachers	Salary expenditure (In Rs. million)	Average Annual salary per teacher (In Rs.)	Index Number of teacher's salary (1950-51=100)
	1	2	3	4
1950-51	16,396	19.8	1207.5	100.0
1951-52	17,222	21.0	1213.6	100.5
1952-53	18,226	20.7	1135.7	94.5
1953-54	18,314	21.7	1184.8	98.1
1954-55	20,259	24.2	1194.5	98.9
1955-56	22,970	26.0	1131.9	93.7
1956-57	24,218	30.4	1255.3	103.9
1957-58	2,57,061	35.3	1373.2	113.7
1958-59	28,367	40.3	1420.7	117.4
1950-60	31,071	45.6	1467.6	121.5
1960-61	27,152	55.4	2040.4	168.9
Decennial growth rate	65.6%	179.8%	68.9%	68.9%

TABLE - III

Public Expenditure and Its Allocation

(Professional and Non-Professional Schools)

(In Rs.million)

Year	Public Expenditure on non-professional schools	Public expenditure on professional schools	Total Public Expenditure on professional and non-professional schools(1+2)	Column 1 as % of Column 3	Column 2 as % of Column 3
	1	2	3	4	5
1950-51	90.6 (39.0)	28.6 (77.5)	119.2	76.0	24.0
1951-52	103.8	30.5	134.3	77.3	22.7
1952-53	112.3	30.0	142.3	78.9	21.1
1953-54	124.6	29.3	153.9	80.9	19.1
1954-55	140.5	33.8	174.3	80.6	19.4
1955-56	165.9	40.9	206.8	80.2	19.8
1956-57	191.7	43.6	235.8	81.4	18.6
1957-58	225.4	54.9	280.3	80.4	19.6
1958-59	261.0	63.8	324.8	80.4	19.6
1959-60	315.2	72.2	387.4	81.4	18.4
1960-61	363.1 (53.0)	91.3 (80.0)	454.4	80.0	20.0
Decennial growth rate	300.0%	219.2%	286.2%		

Note: Figures in brackets in Col.1 refer to the proportion of the direct expenditure incurred on non-professional schools met out of government funds. And those in brackets in Col.2 refer to the proportion of the direct expenditure incurred on professional schools financed by the government.

A

TABLE - IV

Enrolment at the Secondary Stage (Professional and Non-Professional Schools)

B

Direct Expenditure per pupil in professional schools

Year	Total enrolment at the secondary stage (2+5)	Number of Pupils in non-professional schools	Number of pupils in vocational schools	Number of pupils in teacher training schools	Number of pupils in professional schools (3+4)	Direct Expenditure per pupil in professional schools in current prices (In Rs.)	Direct Expenditure per pupil in constant prices (composite index) (In Rs.)
	1	2	3	4	5	6	7
1950-51	14,39,170	12,51,778	1,17,778	69,416	1,87,194	196.6	196.6
1951-52	16,68,269	14,82,319	1,20,710	65,240	1,85,950	212.8	212.8
1952-53	18,21,628	16,14,519	1,36,078	71,031	2,07,109	200.5	201.9
1953-54	19,29,433	17,21,837	1,34,161	73,435	2,07,596	202.5	204.3
1954-55	20,51,359	18,17,046	1,57,607	76,706	2,34,313	230.0	216.0
1955-56	22,48,708	19,86,243	1,78,998	83,467	2,62,465	182.0	242.3
1956-57	24,24,375	21,52,731	1,88,426	83,218	2,71,644	193.3	217.0
1957-58	26,01,496	23,11,798	2,12,456	77,242	2,89,698	240.7	239.6
1958-59	28,40,886	25,15,224	2,41,463	84,199	3,25,662	249.0	217.3
1959-60	30,49,813	26,88,023	2,72,814	88,976	3,61,790	258.1	230.0
1960-61	34,82,408	30,81,134	2,90,772	1,10,502	4,01,274	284.4	212.8
Decennial growth rate	142.0%	146.1%	146.8%	59.1%	114.2%	44.6%	8.2%

Note: Col.6 - Obtained by dividing the ~~number of students (Col.5) by the~~ total direct expenditure on professional schools in current prices (Col.1 of Table I), by the number of students (Col.5)

Col.7 - Obtained by dividing the ~~number of students (Col.5) by the~~ total direct expenditure on professional schools in constant prices (Col.6 of Table I), by the number of students (Col.5)

TABLE - V

Teacher-Pupil Ratio in Professional Schools

Year	Enrolment (Professional schools)	Number of teachers	Teacher--Pupil Ratio(1+2)
	1	2	3
1950-51	1,87,194	16,396	1:11.4
1951-52	1,85,950	17,222	1:10.8
1952-53	2,07,109	18,226	1:11.4
1953-54	2,07,596	18,314	1:11.3
1954-55	2,34,313	20,259	1:11.6
1955-56	2,62,465	22,970	1:11.4
1956-57	2,71,644	24,218	1:11.2
1957-58	2,89,698	25,706	1:11.3
1958-59	3,25,662	28,367	1:11.5
1959-60	3,61,790	31,071	1:11.6
1960-61	4,01,274	27,152	1:14.7
Decennial growth rate	114.2%	65.6%	29.0%

TABLE - VI

Teacher-Pupil Ratio in Professional Schools of the Developed and Underdeveloped Countries

Name of the country and the year of statistics.	Teachers	Pupils	Teacher-pupil ratio
1	2	3	4
(I) DEVELOPED COUNTRIES :			
(a) Federal Republic of Germahy (Vocational schools) (1962)	68,833	18,65,815	1:27
(b) Canada(1957-58) (Vocational Schools)	5,100	1,13,205	1:22.2
(c) Japan (1962)	3,98,030	7,41,466	1:22
(d) France (1962-62)	14,742	2,56,500	1:17.4
(II) UNDERDEVELOPED COUNTRIES			
(a) India (1960-61)	27,152	4,01,274	1:14.7
Vocational Schools	18,571	2,90,772	1:15
(b) Iraq (1961-62)	997	14,596	1:14.6
Vocational Schools	639	7,369	1:11.5
(c) Indonesia (1957-58)	20,925	2,93,686	1:14.0
(d) U.A.R. (1957-58)			
Vocational schools (1957-58)	6,729	86,701	1:12.7

Sources: (Developed countries): (b) - World Survey of Education - III, UNESCO.
a, c, &d - International year book of Education, Vol.XXV, 1963.
(Underdeveloped countries) - c & d - World Survey of Education - Secondary Education - III, UNESCO.
a- based on Table V
b- International yearbook of Education.

Note: (i) Wherever essential, part-time teachers as well as part-time students are converted into full-time by equating two part-time teachers or students to one full-time teacher or student.
(ii) Professional schools include both the vocational and teacher training schools, whereas vocational schools alone exclude the teachers' training schools.

TABLE - VII

Proportion of Students Enrolled in Professional Schools to enrolment in Non-Professional Schools

Name of the country and the year of statistics	Enrolment in non-professional schools	Enrolment in professional schools	Percentage of pupils in professional schools to pupils in non-professional schools
1	2	3	4
(I) DEVELOPED COUNTRIES			
a. Germany (1957-58) Vocational Schools	11,43,930	12,69,478	111.0
b. Norway (1957-58) (Public Schools)	60,087	51,319	85.5
c. Sweeden(1957-58)	19,93,92	94,449	47.4
d. France (1962-63)	7,11,000	2,56,500	36.7
(II) UNDERDEVELOPED COUNTRIES			
a. Iran (1957-58)	1,88,803	10,596	5.6
b. India (1960-61)	30,81,134	4,01,274	9.4
c. Philippines (1957-58)	5,32,361	95,323	18.0
d. U.A.R. (1957-58)	4,42,461	89,396	20.0

Source: Except for India and France, World Survey of Education, Secondary Education-III, UNESCO.

France - International yearbook of Education.

India - See Cols.2 and 5 Table IV-A

Note: Wherever necessary part-time students are turned into full-time students by equating two part-time students to ~~the~~ one full time student.

TABLE - VIII

Allocation of Recurring Expenditure between Non-Professional and Professional Schools

(In percentages)

Name of the country and the year of statistics.	Types of Schools		
	General education schools	Vocational schools	Teacher training schools
1		2	
DEVELOPED COUNTRIES			
Sweeden (1957-58)	62.5	29.0	8.5
Germany (1957-58)	61.9	39.1	Included in General education schools
France (1957-58)	55.3	38.4	16.3
Netherlands (1957-58)	52.0	43.1	4.9
UNDERDEVELOPED COUNTRIES			
India* (1960-61)	83.1	11.7	5.2
U.A.R. (1958-59)	79.3	12.1	8.6
Iran (1958-59)	72.0	20.4	7.6
Philippines (1957-58)	52.0	48.0	-

Sources : World Survey of Education, Secondary Education-III, UNESCO.

* Based on the report on 'Education in India' - Vol.I, Ministry of Education, Government of India.