

EDUCATION COMMISSION

ELEVENTH MEETING TO BE HELD AT SRINAGAR
(May 30—June 13, 1965)

AGENDA PAPERS **(PART II)**



सत्यमेव जयते

University Grants Commission Building
BAHADUR SHAH ZAFAR MARG,
NEW DELHI
1965

ELEVENTH MEETING
OF
THE EDUCATION COMMISSION

AGENDA PAPERS
(PART II)

EDUCATION COMMISSION
U.G.C. Building, Bahadur Shah Zafar Marg

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EDUCATIONAL GROWTH AND IMPROVEMENT IN INDIA:
AN ATTEMPT AT A POLICIES DOCUMENT

By

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EDUCATION COMMISSION
UNIVERSITY GRANTS COMMISSION BUILDING
BAHADUR SHAH ZAFAR MARG, NEW DELHI -1

1965 .

Educational Growth and Improvement in India:
an attempt at a policies document

1. An attempt is made in this note to construct a framework within which broad policies for the expansion of educational services and their continuing quality improvement can be formulated. Overall objectives are first examined along with their consequences for curriculum making. These are then related to the structure of the education system and to teacher training and improvement. The elements of an overall long term plan are then sketched, including a developmental strategy, and the implications for finance and administration examined.

2. It must be reiterated that the document is concerned with policies only and no attempt has been made to quantify the consequences of these policies. It will be seen that within this context the paper borrows generously from the idea of others.

Objectives of Education

3. We may begin by stating that, in India, education is recognised as being ;

(a) an individual right to be provided (within the limits of the individuals ability and the States resources) by the State (that is, in the terminology of the economist, an item of consumption);

(b) a factor (perhaps the most important) in human resources development contributing to social change and economic growth (that is an "input" in economic development).

Consequences of these two principles are:

- (a) there should be a deliberate policy of equalization of opportunities for all at all stages of the educational ladder, whatever their social, economic or geographic origin;
- (b) no part of the educational system should be a blind alley and anyone who drops out along the way should have opportunities of rejoining;
- (c) at least a part of all education should be oriented to the development of the scientific attitude and an understanding of productive forces;
- (d) particular attention and support should be given to agricultural, technical and vocational education.

5. The above two principles, while being fundamental, are so general that they could be applied to many developing countries. What can be identified as the specific objectives of education in India?

6. The neatest summary of these is contained in J.P.Naik's paper A National System of Education for India where he lists seven national goals which are "at the very basis of all development plans, including those of education." These are:

- (a) democracy;
- (b) secularism;
- (c) Hindi as the "official language;"
- (d) elimination of poverty;
- (e) science and technology;
- (f) socialism;
- (g) national integration;
- (h) maintenance of national freedom and independence.

7. For convenience, and without, I hope treason to Mr. Naik's argument, these could be grouped under two headings:

- (a) the creation of a integrated democratic, secular, socialistic society;
- (b) the transformation of a traditional subsistence economy through science and technology.

8. In order to proceed, two assumptions will be made:

- (a) that these objectives are generally agreed upon;
- (b) that education has a significant or even major role to play in their achievement.

9. In social and economic terms these objectives amount to (a) the generation of material wealth and the equalization of its spread; (b) the transformation of a static, feudalistically structured society into a dynamic and egalitarian one. These goals meet the United Nations formula "development-growth plus change"

10. In order to examine these objectives from an educational viewpoint we must spell them out in behavioural terms under two headings:

- (a) values and attitudes to be cultivated;
- (b) skills to be developed and knowledge to be imparted.

Consequences of these Objectives for the Curriculum:

11. In broad terms, valid for all stages and forms of education, these objectives can be spelt out as follows:

12. Values and Attitudes Implied by the Objectives:

- (a) Spirit of service to local and national community
- (b) Tolerance and understanding of different racial, religious, linguistic and social groups;
- (c) Feelings of patriotism and national solidarity;
- (d) Understanding of social institutions, national aspirations, citizenship;

- (e) International understanding;
- (f) Belief that man can control and use his material environment;
- (g) Understanding of the scientific attitude;
- (h) Acceptance of the dignity of manual labour;
- (i) Spirit of hard work, of standards of excellence.

13. Some Examples of skills to be Developed:

- a) Manual, craft and vocational skills;
- b) Agricultural skills;
- c) Linguistic skills;
- d) Experimental skills (i.e. skills in problem solving);
- e) Social skills (i.e. skills in working and co-operating with others).

14. Some Areas of Knowledge to be Cultivated:

- a) Knowledge of the history of India and its struggles for independence;
- b) Knowledge of present Indian society and its aspirations;
- c) Understanding of world history;
- d) Scientific and technological knowledge;
- e) Understanding of the productive forces and techniques (i.e. power, processes, capital, labour, marketing, etc.);
- f) Knowledge of different social orders - capitalism, communism, fascism, socialism, feudalism, tribalism, etc.;
- g) Knowledge of Indian Languages and literature and foreign languages and literature.

15. It should be emphasized that though skills and knowledge have been separated above, they do not refer to two different forms of education. Though the proportions might vary all education (whether labelled vocational or general) would contain elements of the three groups.

16. While no claim is made for the above list being either exhaustive or completely appropriate, it does seem to me that it would make teacher training, curriculum making, textbook writing and so on much easier if general agreement could be reached by governmental, university and private authorities that these are indeed the objectives of education in India. I believe that within them they do encompass the three aims of education: individual development; citizenship education; education of productive workers.

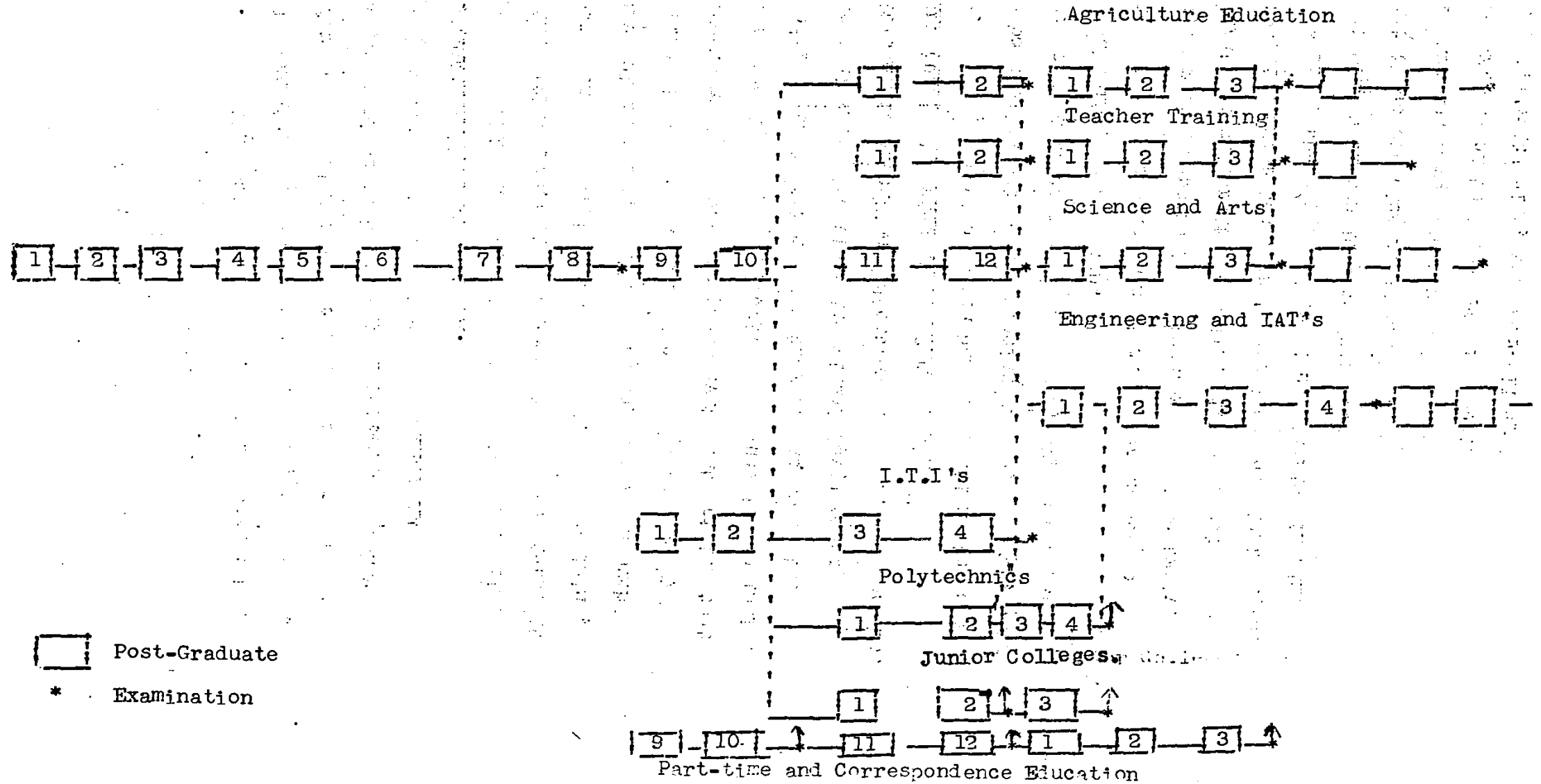
Structure and Articulation of the System:

17. If curricula, teacher preparation etc. are to be spelled out in any meaningful way, however, they must obviously relate to the level, type and length of schooling to be given.

18. For the arguments' sake, let us assume as a working hypothesis a structure based on twelve years' pre-university schooling with a first major diversion after ten years' schooling and first degree courses of three years' duration. Bearing in mind that many will continue to drop out along the way, that those who wish so should have opportunities either of pursuing home study or part-time classes or rejoining the system and that no form of education should lead to a "no exit" sign, the over-all system might look something like the following diagram:

A G E

5/6 6/7 7/8 8/9 9/10 10/11 11/12 12/13 13/14 14/15 15/16 16/17 18 19 20 21 22



19. In defining a stage of education, a combination of factors can be used:

- (a) in relation to the existing pattern;
- (b) in terms of a child's intellectual, social and emotional growth;
- (c) in relationship to employment opportunities;
- (d) in relationship to comparative international standards of achievement;
- (e) in relation to certain fixed points:
compulsory period; college entrance requirements; age of apprenticeship, etc.

20. Is it necessary to assign a fixed number of years for each stage with uniform curricula and syllabus? It may be noted here that in countries such as U.K. and U.S.A. where great latitude is left to local school authorities and even to individual headmasters and teachers, we find that more or less uniform patterns of standards and school systems have nevertheless evolved through the use of such mechanisms as:

- a) minimum standards of qualification of teachers at each level;
- b) minimum standards for examinations, such as:-
 - i) primary school leaving;
 - ii) secondary school leaving;
 - iii) College entrance.

21. Additional mechanism used to maintain and improve standards have been, inter alia:

- i) inspection of schools;
- ii) national competitive examinations for entry to certain institutions;
- iii) accreditation of schools;
- iv) nationally issued model syllabuses, textbooks, teachers' guides and handbooks.

22. It does appear clear that in India the evolution of a uniform pattern of school and college education will take some time, perhaps 5 to 10 years, and a phased programme of change for each State must be worked out. Meantime evolution along the lines achieved in the U.K. and U.S.A. could perhaps begin by:

- a) the definition and acceptance of minimum qualifications for matriculation, entry into higher education, and first degree;
- b) minimum qualifications for teachers for each level.

23. Before arriving at a quantifiable plan four further analyses are probably necessary:

- a) equalization of educational opportunity;
- b) admission policies;
- c) special requirements of agricultural education and technical and vocational education;
- d) the pursuit of quality education;
- e) programmes of adult and youth education;
- f) role of research.

Equality of Educational Opportunity.

24. The ultimate goal here will be that any child should be able to pursue his studies to as high as level as his native gifts would permit, without handicap of social origin (sex, community, religion, etc.), geographic location (rural or isolated area) or economic means. This must be admitted to be a long-term objective to be worked towards. As steps towards this goal, the

following can be envisaged:

- a) elimination of gross differences in educational facilities and opportunities between States;
- b) within States, elimination of such gross differences between regions and districts;
- c) special measures for the education of girls;
- d) special measures for the education of scheduled tribes and castes;
- e) special measures for isolated or scattered communities;
- f) part-time and correspondence education opportunities for as many as possible;
- g) scholarship schemes for talented students.

Admissions Policy:

25. Again before quantifying a developmental planned decisions, have to be made on broad policy regarding admissions. Is an open-door policy to be pursued right up the educational ladder? Is access to certain levels to be restricted? If so, at what levels and on what basis?

26. If the basic pattern of ten years schooling before diversification is admitted with two further pre-university years/ it seems to follow:

- (a) that access to the first ten years should be unrestricted and promoted within

the limits of resources;

- (b) the first 'check-point' in the system would be at the end of ten years.

27. In view of the limitation of resources further procedure from this point would have to be

on the basis of the criterion "willing and able", within differences in financial means being equalized

through a generous programme of scholarships. This would probably imply entrance 'checks' or competitive examinations to higher institutions as well as a leaving certificate for those entering employment at the end of twelve years' schooling.

28. In addition to the above some checks at an earlier stage (class 6 or 8) would be necessary to select entrants for qualify or 'merit' institutions.

Agricultural, Technical and Vocational Education.

29. Apart from the general considerations enumerated under Objectives, there are some specific policy considerations to be examined here. One must first be reasonably clear about education's contribution to the growth of agriculture. In India, about 80% of the population is dependent upon agriculture (as farmers) and as an industry it contributes about 40% to the national dividend.

30. National policy, in all probability, will aim at reducing the first figure while increasing the second. It is appropriate here to recall the U.S. figures. In 1910, 31% of the labour force was engaged in farming; in 1965 only about 7% is so engaged, though as is well recognised in India, this much reduced work-force satisfies an increased U.S. per capita consumption and produces a sizeable exportable surplus.

31. More than 7% of the labour force in the U.S. is however concerned with agriculture and this it seems to me is one of the important points in the growth of an agro-industry. There are first the supporting (input) trades and services producing better seeds, animals, fertilisers, machinery, credit,

'know-how'. Then there is the producer himself. Thirdly there are the distributive services, processors of farm products, research workers developing new uses, etc.

32. Education will have to concern itself with all these needs. To concentrate only on the education of farmers will not be sufficient to contribute to the national policy of increasing agriculture's contribution to national wealth.

In addition, therefore, to the education of farmers, the above entails the education of, among others:

- a) skilled workers for factories;
- b) technicians (for e.g. cheese, timber, paper, plastics, fertilisers industries);
- c) research workers in biology, chemistry, etc.;
- d) commercial workers for distributive trades and farm banking and credit;
- e) managerial and administrative personnel.

33. It may be that only a relatively small part of the educational system can be identified as 'Education in agriculture'. On the other hand, viewed in the wider perspective sketched above all education can contribute to agriculture's growth.

34. In the field of technical and vocational education (covering the industrial, commercial and administrative fields, but excluding that part which was labelled 'Education in agriculture' above) specific policies are more difficult to identify since much of the basic manpower data is as yet unavailable.

35. Perhaps the first need lies here:

a) to identify the different skills of the current labour force; spell out their job specifications, including educational levels;

b) to assess the short-term and long-term needs of the labour force by broad categories (say some 15-20) and again spell these out in terms of the education needed and

c) to devise the education programmes necessary to meet the above, in terms of both the training component and general education component;

36. Whereas it is not easy to assess the number of engineers India can absorb, there appears, on the other hand, to be general agreement that many more skilled workers and middle (supervisory, technician) level workers are needed. There appears also to be general agreement that technical and vocational oriented education should not begin too early and should at all stages include a substantial element of general (including science) education.

37. For rapid industrial development it would seem that India's best policy for the short future (decade or so) would be to utilise the available world stock of 'know-how', designs ^{and} through a well-organised and vigorous policy of copying and /or importing established techniques and processes. This is generally conceded to have been the path followed by such recently industrialised countries as Japan. Such a policy will still require

design and developmental engineers and original, creative work on uniquely Indian materials and conditions will always have a place. Something more than purely maintenance engineers will be required, but the accent will decidedly on the application of know industrial processes.

38. For education, there would seem to be at least two consequences of this:

- a) technical education at all levels, while containing a solid part of general education, should be oriented to and closely linked with industry;
- b) industry itself in both private and public sector should assume a greater responsibility for education, both technical and general.

39. This leads us to a last remark: as Arthur Lewis has pointed out¹, the education programme which gives the quickest returns is on-the-job training, that is improving the skill and educational level of the present labour force through apprenticeships, evening classes, day release and home study facilities, etc. This can be re-examined under Adult Education below.

40. Briefly summing up this section, it seems to me that:-

- a) education's first and perhaps best contribution to agriculture, industry, commerce and administration is to provide a solid general (including science) education to as many as

1 In "The Theory of Economic Growth".

possible while developing the right attitudes to work and making some understanding of and training in manual work and agriculture compulsory for practically all;

- b) there is urgent need to identify and spell out in educational terms all the kinds and levels of skills for the present and future needs of industry, agriculture, commerce and public administration in India;
- c) vocational, technical and professional education should not be over-specialised and should be industry and problem-oriented;
- d) there is need to re-examine the role of employers in educational programmes, particularly for on-the-job training.

Pursuit of Quality Education.

41. I have little to say here and certainly nothing original. One cannot have quality education without quality institutions and these are expensive and only a few can be had at a time. I believe if one looks at the history of education in such countries as U.K. or France one will find that, whether it was public policy or not, they relied for the last hundred years or so mainly on the products of a few institutions to man their top levels in industry, government and commerce. It is only since 1945 that the democratisation of educational opportunities has really become systematised and standards of excellence have spread.

42. Such a process can be equated with democratic equality of treatment, by basing it not on privilege or social origin, but on a merit.

43. In India this might begin by creating a system within the system whose role would be primarily to provide quality education and also to act as pacesetters for other institutions.

44. Entry to these "quality institutions" (generously supported by scholarships) would be on a merit basis only. (and to avoid the controversies such titles as "model" "demonstration" or 'experimental' schools might provoke, they could be called simply "merit" institutions'.

Adult and Youth Education

45. This field is usually bedevilled by its own statistics, which in India are so overwhelming that planners and finance authorities prefer to ignore them. When adult educators present their statistics, instead of impressing with the urgency of their case, they tend more to frighten with the enormity of the task and cost.

46. The job has to be brought within reasonable proportions and presented as a phased and realistic programme. Bearing in mind some of the thoughts expressed earlier, one could sketch a plan along the following lines:

- a) exclude all below the age of 16 (the concern of school system) and above 'say' 35 (those above the age who wished to follow programmes of education should have, of course, the opportunity of doing so);
- b) concentrate on two groups:
 - i) those gainfully employed but under-educated;
 - ii) those educated but unemployed and in need of retraining.
- c) require all employers of, say, more than 10 workers either to provide education and training for their employees or contribute on a per capita basis to public funds which provide such services; such expenses to be deductible for tax purposes;
- d) require every matriculate to make at least two people (parents or close relatives perhaps) literate;

- e) develop a widening service of evening classes, part-time schooling, home study facilities particularly correspondence courses;
- f) mobilize the use of radio and press principally to motivate people's desire to learn;
- g) extend and strengthen the extension services to farmers and farm workers.

Role of Research.

47. This section is more of a memory-ticker than a contribution. Issues needing to be settled would be, inter-alia:

- a) establishing national inventories of research programmes;
- b) orienting programmes towards developmental and operational research;
- c) co-ordinating on going and projected research programmes;
- d) linking university research programmes more closely with government and industry;
- e) general nature of research requirements at M.A. and Ph.D. levels;
- f) estimates of numbers on these levels;
- g) expectations of research by university lecturers and professors.

The Educational Plan

48. On the basis of policy decisions along such lines as the preceding, a long-term, quantified educational plan can be constructed which can be expressed in terms of a "model" such as that contained in Annexure I to this paper. (Note. This "model" merely takes the known 1960-61 figures and the 1930-31 figures proposed by J.P. Naik in his paper "Educational Finance in India - 1930-81", and interpolates arithmetically the figures for the intervening years. The figures for adult education and administration need to be added).

49. The Commission has already agreed that three such exercises should be carried out: one showing high projections, one low projections and a third with medium

projections.

Financing an Educational Programme of Growth and Improvement

50. As with others concerned with developmental programmes, the educator has a strong case for increased budgetary resources. Before arguing his case he should be clear about four prior questions:

- a) education's relative priority to health and food;
- b) the rightness of the kind of education to be provided (more education of the wrong (e.g. clerical) kind might well impede development);
- c) the fullest use is being made of every rupee presently provided (i.e. the "productivity" of education itself is assessed);
- d) the balances of spending on different levels and forms of education and between expansion and improvement have been evaluated.

51. Armed with answers to these questions the case for increased resources can be pressed and the argument based on education not only as a social welfare service but also as:

- a) a fundamental human right (and third priority after health and food, on the UN index of standards of level);
- b) a basic component of economic growth;
- c) a dynamic part of social change and human progress

52. To ensure that all resources are mobilized the sources and mechanisms of educational finance can also be examined in terms of:

- a) Central Government funds;
- b) State Government funds;
- c) Municipal, district and local contributions, in cash or kind;
- d) private contributions;
- e) Fees;
- f) Use of public loans and loans to students;

- g) Charges to public sector projects;
- h) Contributions of employees;
- i) Grants-in-aid policy;
- j) International assistance.

Administration

53. The basic task here is to analyse the principal functions involved in administering education. I suggest there are at least four:

- a) planning, operations analysis and project evaluation;
- b) management of the system;
- c) supervision and school improvement;
- d) research and development.

The skills and experience needed for these have to be identified, their services separated and training, recruitment and promotion policies formulated.

A Strategy for Implementing the Plan

54. All the above could remain a purely academic exercise unless an overall strategy for implementation is not also worked out and responsibilities clearly assigned.

55. Such a strategy might include the following elements:

- a) Central Government to be primarily concerned with:
 - i) general policy regarding financing of institutions (at all level), and to provide substantial assistance from Central funds for the development of education in Science and Technology, Post-Graduate studies and research.
 - ii) maintenance on 100% basis for say 10 years of quality (merit) institutions and projects;
- b) introduction of nationally accepted objectives for education in terms of goals contents and need of trained manpower in different sectors of the economy);
- c) introduction of nationally accepted "minimum standards" for primary, secondary, college entrance and first degree levels of achievement;

- d) introduction of accepted model teachers' handbooks and subject textbooks;
- e) a phased programme of improved teacher training and status;
- f) programmes for development of education of handicapped classes and communities;
- g) phased programme of literacy and adult education;
- h) development of mechanisms for continuing review and adjustment of content and growth of education and for its continuing improvement in quality and standards.

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ENROLMENT AND EXPENDITURE ON DIFFERENT LEVELS OF
EDUCATION IN INDIA (1960-61 to 1980-81)

| Level of Education | Years | | | | |
|--|---------|---------|---------|---------|---------|
| | 1960-61 | 1965-66 | 1970-71 | 1975-76 | 1980-81 |
| 1. First level of Education: | | | | | |
| i) Population (6-13) (in 000's) | 85,890 | 99,651 | 115,767 | 128,634 | 139,623 |
| ii) Enrolment (in 000's) | 41,700 | 63,000 | 91,000 | 127,000 | 147,375 |
| iii) Percentage of enrolment to population (6-13) | (48.6) | (63.2) | (78.6) | (98.7) | (105.6) |
| iv) Percentage of Expenditure on 1st level of Education to Total educational expenditure | (33.8) | (33.4) | 33.0 | (32.6) | (32.2) |
| 2. Second Level of Education: | | | | | |
| i) Population (14-17) (in 000's) | 35,846 | 40,801 | 47,325 | 55,682 | 62,429 |
| ii) Enrolment (in 000's) | 5,004 | 8,132 | 13,215 | 21,474 | 34,562 |
| iii) Percentage of Enrolment to Population (14-17) | (14.0) | (19.9) | (27.9) | (38.6) | (55.4) |
| iv) Percentage of Expenditure on II-Level of Education to Total Educational Expenditure | (24.3) | (26.7) | (29.3) | (32.2) | (35.4) |
| 3. Third Level of Education: | | | | | |
| i) Population (18-23) (in 000's) | 47,159 | 52,690 | 60,072 | 70,011 | 82,327 |
| ii) Enrolment (in 000's) | 1,094 | 1,737 | 2,758 | 4,380 | 6,949 |
| iii) Percentage of enrolment to population (18-23) | (2.3) | (3.3) | (4.6) | (6.3) | (8.4) |
| iv) Percentage of Expenditure on III Level of Edn. to Total Educational Expenditure | (16.5) | (18.3) | (20.3) | (22.5) | (25.1) |
| Adult Education: Expenditure (Rs. in 000's) | | | | | |
| Percentage of Total: | | | | | |
| Miscellaneous Expenditure (Rs. in 000's) | | | | | |
| (Admin. etc.) Percentage of Total: | | | | | |
| Total Expenditure on Education | | | | | |
| in (000's) 3,443,801 5,985,326 10,402,497 18,079,539 31,409,299 | | | | | |
| Expenditure per Capita | 7.8 | 12.1 | 18.6 | 28.7 | 45.2 |
| Total Population (in 000's) | 439,235 | 494,781 | 559,622 | 630,202 | 694,896 |
| Percentage of Expenditure on Education to National income | (2.4) | (3.0) | (3.8) | (4.3) | (6.0) |

SCHOOL HEALTH PROGRAMME

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1965

SCHOOL HEALTH PROGRAMME

I. Introductory:

The importance of a nationwide programme of school health education in a country where over 22 per cent of total population is of school-going age, and where the general health of the children is far below standard, cannot be over-emphasized. A school health programme should be comprehensive and should be developed as a continuous service from pre-school age to college.

2. No school health scheme can succeed fully if not supported by a general health service of the country. Thus school health is intimately connected with problems of nutrition, environmental sanitation, prevention of diseases, promotion of health - physical and psychological - and health education in the whole community.

3. A total school health programme has three facets: (a) Health Education, (b) Health Services, and (c) Healthful school living including environmental sanitation. All these three aspects should be emphasized in a closely co-ordinated manner as they all contribute to the maintenance of the good health of the children.

4. The Renuka Ray Committee set up by the Government of India, Ministry of Health, in 1962 made comprehensive recommendations on school health programmes and several steps have already been initiated during the last few years to implement these recommendations. Considerable progress has been made in the various areas of school health programme including provision of school meals. However, a great deal more has to

be accomplished if all the young people in our institutions are to reach a minimum standard of health and good living. This requires an intensive and coordinated health programme implemented by the Ministry of Education and the Ministry of Health in each State working together in very close collaboration.

5. The suggestions made in this paper are based largely on the recommendations of the Renuka Ray Committee, the action taken so far and the further programmes implemented chiefly by the Central Health Education Bureau and the Directorate-General of Health Services.

II. School Health Education

6. Health education should constitute an essential part of general education in the elementary and secondary schools. The courses on school health education already drawn up by the Central Health Education Bureau for the various age-groups may be incorporated in the curricula in a suitable manner. This need not necessarily mean an addition of further curricula load, for many of the concepts of health education can be integrated in the language, the science and the social studies courses. The emphasis should be on practical demonstration and observance rather than on mere theoretical knowledge.

7. Every school should have at least one teacher trained in school health education. Ultimately, it would be desirable to have all the teachers oriented to this subject, particularly in the lower elementary school, where habits of healthful living have to be inculcated.

8. Local resources of personnel should be fully mobilised in assisting the school in giving health education. Guide material on health education already developed by the C.H.E.B. may be widely publicised and made available to the teachers in the regional languages. Steps should be taken to develop textbooks, teaching aids and lively well-illustrated supplementary readers which will convey concepts of good health-living to children in an interesting manner. These books should be suited to the different age-levels of the pupils.

9. Health education at the upper elementary and the secondary levels can be imparted through student motivated projects.

10. The training programmes for teachers in elementary and secondary schools should include a course on health education covering knowledge about the growth and development of children, personal health, community health, school health practices, and methods of health education. The draft syllabus prepared by the C.H.E.B. on the subject may be considered. The course on health education could be coordinated with courses in child psychology, school organisation etc. It should be possible to introduce the trainee to the basic concepts and practices of school health education through practical work, assignments, and observation in the demonstrations and practising school.

11. At least one lecturer in each training institution should be responsible for coordinating programmes of health education. He should be

trained in the principles and practices of school and community health.

12. For teachers already in service special short-term courses should be organised at local centres jointly by the Education and the Health Departments. Similarly, short-term orientation courses should be organised for training college personnel.

III. School Health Service

13. The school health service has three aspects: maintenance of health, promotion of health and remedial health schemes. The service should be both preventive and curative. The aim should be to develop desirable health practices, ensure 100 per cent immunisation against communicable diseases, and promote attention to remediable defects.

14. A detailed medical examination should be conducted at least twice during the child's school life - the first time when he enters the primary school, and the second when he enters the secondary school. Referral services should be provided in case of illness and remedial defects, especially errors of refraction, caries, skin diseases and emotional disturbances.

15. The health history of each child should be kept on cards, suitably designed and fixed in the school. These cards should be passed on from institution to institution along with the other records of the child.

16. Follow-up action is very important but is the most neglected aspect of health services.

Absence of follow-up nullifies the benefit of medical examination. Timely care and treatment

may save many children from continued poor health and consequent poor studies. A large proportion of parents are too poor and illiterate to be able to follow up the medical examination with remedial treatment, and therefore it becomes the responsibility of the school to see that follow-up action is taken. Local community and philanthropic resources should be fully utilised to organise this programme.

17. Medical examination will be carried out by the personnel of the Medical Department who will be given special training for school health inspection. The purpose of the medical inspection should aim not merely to diagnose obvious diseases or deformities but also to assess the health and nutritional position of the child and to detect diseases or defects in their incipient or early stages.

18. In addition, the school should maintain close liaison with a well-organised health centre to which children can be referred by parents, teachers and school nurses.

19. Where special defects or disorders or disabilities are noticed, examination by appropriate specialists should be arranged. Dental care is particularly important at the elementary stage.

20. General inspection of students' health should be organised at the time of immunisation.

21. A well-scheduled programme of immunisation should be carried out at every school for children of different age-groups.

22. No additional personnel should be required

on the school staff for carrying out this programme of health services which will be the major responsibility of the Health Department through its primary health centres. One of the medical officers of the primary centres will be specifically responsible for student health services.

23. The health personnel in primary health centres and outside who deal with the school health services should be given orientation in school health work. Such orientation programmes should be organised by the Health Department.

24. It is expected that about 10 crores of students at all educational levels will have to be covered by health services by the end of the Fourth Plan. In view of the expense involved and the lack of trained personnel the programme will have to be phased. During the Fourth Plan the target should be to cover all the primary school children and extend the service to the upper school levels to the maximum extent possible. By the end of the Sixth Plan, however, comprehensive health service should be provided to all the pupils in the school.

25. School Meals: An important aspect of health services and one that contributes directly to the maintenance and promotion of health is the provision of school meals. In almost all the progressive countries children in schools are provided with milk and school lunch at subsidised cost and often free of cost. In our country, where a majority of children are under-nourished and suffer from deficiencies of all types, the necessity of providing school meals is all the more

acute. Due to lack of financial resources, however, we have to depend on community help to a large extent for this purpose. Some States have already made much progress in this regard. About 8½ million elementary school children from seven States are already being provided with some form of school meal or the other through local community resources as well as from CARE. It is expected that during 1965-66 five million additional children will come under the scheme.

26. The primary aim of the school meal programme should be to improve health and encourage good dietary habits among the children. The school meal should provide approximately one-third of the dietary and nutritional requirements of children.

27. The resources of the local community should be fully mobilised in providing school meals to children. The meals should be based upon locally available nutritious food. No distinction should be made between the children of the poor and of the rich.

28. Milk is the most complete diet, but in view of the general shortage of milk supply, children at least of classes I and II should be provided with milk in the first instance, and the provision extended upwards later when more favourable conditions prevail.

29. Teachers in charge of school meal programmes should be given orientation in planning palatable, cheap and nutritious diet for children. Wherever space is available, schools may grow their own vegetables, as part of their

hobbies or co-curricular activities, and the produce should go into the school meal programme.

30. The school meal programme should be subsidised to the extent of 50 per cent of the expenditure incurred.

31. This programme of school meals will have to be phased, the first priority being given to children of the age-group of 6-11. A desirable proposal would be to cover the entire school population of this age-group by the end of the Fourth Plan. Extension of the programme to cover children of the middle schools may be made according to facilities available.

IV. Healthful School Living

32. The standard of personnel and environmental health is very low in many parts of the country, particularly in the rural areas. Good environmental hygiene is important (a) to make the children's life in school a healthy and pleasant experience, and (b) to bring about indirectly a better awareness of environmental hygiene in the community.

33. School authorities should ensure that hygienic surroundings, sanitary latrines, wholesome water supply, proper lighting and ventilation, good seating arrangements, and safety measures are provided in all schools. This is necessary both for providing a healthy environment and for demonstrating good healthy practices.

34. Environmental sanitation is of the highest significance and should be implemented by teachers and pupils alike. Sewage and garbage disposal should be arranged for suitably.

35. The sale of unsanitary food by hawkers in and around the schools should be prohibited.

This can be checked and counteracted if good health meal programmes are organised. Inexpensive school canteens where clean and healthy food is served on a no-profit no-loss basis would help in keeping children away from street hawkers.

V. Organisation and Administration

36. In carrying out a comprehensive programme of school health scheme, the joint efforts of the Departments of Health and Education are necessary at all levels, national, state, district and local. The task being very heavy, the co-operation and active support of local bodies and voluntary organisations should also be mobilised to the maximum extent possible. Local co-operation and self-help schemes should be encouraged and supported as in Madras.

37. The Union Ministry of Health will take major responsibility for :

- (i) planning and coordinating programmes of student health services with the help of teachers, parents, students and persons responsible for school health administration;
- (ii) extensive general education programme of the people and production of material on student health education;
- (iii) medical examinations, referral service and follow-up;
- (iv) periodical surveys and assessment;
- (v) laying down basic standards;
- (vi) demonstration projects; and
- (vii) research.

38. The Education Department in each State will implement programmes for nutrition and provide

hygienic surroundings, sanitary latrines, wholesome water supply, proper lighting and ventilation, good seating arrangements, avoidance of overcrowding and safety measures. The actual training of teachers in health education will also be the responsibility of the Education Department with technical guidance from the Ministry of Health.

39. The Central Council of Health will lay down the minimum requirements for general health services and the State Health Department will implement the schemes to ensure that the minimum requirements are carried out, that the scheme is expeditiously developed and that local bodies provide student health services for each city, town, district and block.

40. There should be separate units in Education and Health Departments as well as in that of Food and Agriculture for giving effect to school health programmes formulated from time to time.

41. State Councils of Students Health have been set up only in five or six States. This scheme should be extended to cover the remaining States so that state-wide programme may be implemented without delay.

42. At the district level, school health and school meal committees should be set up as sub-committees of the District Development Councils. This was the recommendation of the Renuka Ray Committee, but it has not yet been implemented. The District Health Officer and the District Education Officer should alternatively be the Secretary and Joint Secretary. Together, they will be responsible for organising and conducting

school health services, school meals and health education programmes. The District Food and Agriculture Officer should look after the storage and distribution of food.

43. At the block level school health committees should be set up with the Medical Officer of the Primary Health Unit and the Inspector of Schools as the Secretary and the Joint Secretary respectively. Similarly, at the village level, local school health committees should be constituted with representatives of the Panchayat and Welfare organisations. These committees will help in mobilising community effort to make these programmes self-supporting.

VI. Phasing of the Programme

44. The programme of the type detailed in the preceding paragraphs, covering as it does comprehensive medical inspection, follow-up and remedial measures, provision of school meal programmes and maintenance of good environmental conditions, will require resources in men and materials. Since all the resources required will not be available immediately, the work will have to be phased out somewhat in the following manner:

(a) First Phase

- (i) Education programme for teachers.
- (ii) Hygiene inspection of schools and provision of minimum physical facilities, material supply, sanitary latrines, good seating arrangements and playgrounds.
- (iii) Medical examination and follow-up in schools and colleges.
- (iv) Out-patient clinics for treatment and follow-up in associated medical and health centres.
- (v) Specialist services wherever possible.
- (vi) Immunisation.

(b) Second Phase

(i) Provision of adequate number of beds for students.

(ii) Provision of hospitals for students with facilities in adjoining institutions to continue their studies.

(c) Third Phase

Extension of medical and health care in homes, holiday homes, etc.

(d) Fourth Phase

Establishment of comprehensive student health programme.

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THE ROLE OF UNIVERSITIES
IN
ADULT EDUCATION

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THE ROLE OF UNIVERSITIES
IN
ADULT EDUCATION

1. Responsibility of the University

The image of a university as a closed academic community of scholars engaged in creating and disseminating knowledge and perpetuating its type is a partial one. The universities have, from time to time, undertaken significant social functions for which there was a felt need. In recent years, the university and the society have come much closer together and become more interdependent than ever before. This relationship is expressed in the growing dependence of the university on the public funds. Growth of education among the masses has awakened a demand for more knowledge. The economic development of a nation and the efficiency of its social and professional services are dependent on new knowledge. The quality of life and refinement of public taste depend upon the growth of knowledge among the people. The well-being of a nation and its very security are dependent upon the trained intelligence of the masses of people and on the educational facilities available to them. The universities which have never been quite so cloistered as they are supposed to be, have to take their new responsibility towards education of the people outside the universities more seriously than ever before.

2. What University Can do for adult education

The universities should take on the following functions for the education of the adults:

- (1) Enable those who are not in the universities and who are willing to put forward necessary effort to educate themselves to take university examinations and

qualify for degrees. Private candidates should become eligible to take university examinations subject to certain specified conditions. In order to help them to give them guidance, the universities should provide correspondence courses and courses of instruction in specially organised evening classes. The universities should also utilise media of mass education particularly the radio for helping those who study for the university examinations as private candidates.

[This aspect has been dealt with in some details in the note "Continuation Education" under the caption "A parallel system".]

(2) (a) In addition to helping adults to prepare for the university examinations, the universities should organise inservice educational courses for the professionals in various fields: teachers, doctors, lawyers, scientists, technologists, businessmen and others. Knowledge of professional and technical personnel is in the need of constant renewal and the urgency has been greatly accentuated by the explosion of knowledge. It is hardly necessary to stress the need of this service from the university.

In this context the universities have a special responsibility in the field of education. The character and quality of secondary education is determined by the quality of the graduates produced by the university. The universities should accept it as their very special responsibility that the quality of the teachers in secondary schools and their knowledge of the subject matter which they are required to teach as well as knowledge of the modern techniques of teaching is maintained at a high level. This can be attempted through in-service training or through other special programmes such as summer courses or special classes organised in the university.

Defence Services provide regular refresher courses for their personnel at different levels. In some measure, such courses are essential to maintaining standards in services in government as well as under other employing agencies. If any of these agencies undertake refresher courses for the employees and need assistance of the university, it should be readily available.

(b) Liberal Education:

Universities should organise programmes of lectures and other extension services for widening the world of knowledge of the people, creating awareness of the context of national and international life in which they have a role to play, arousing interest in problems of philosophy, culture and civilisation, cultivating appreciation of literature and fine arts, acquainting them with the noble achievements of the human spirit in the many fields of life and doing all that is essential for creating love and reverence for knowledge.

(c) Another major field in which university extension service can play a valuable role is education of the rulers. A survey of those who control the democratic machinery from the Parliament down to the Gram Panchayat will reveal the imperative need of organising some knowledge which would make them appreciate the responsibilities of their office and give them the light in which they should be discharged.

The fact that that they command votes entitles them to positions in democratic institutions and to consequential power and authority. Their ignorance, however, does not by virtue of their election remain unpunished and, as is evident in the conditions of life today, the country suffers in consequence.

(d) The universities should also be of assistance to all agencies which endeavour to educate their workers. The university library, and where possible, the workshops and laboratories and other educational material should be made available to those who need it. The university may also help to arrange demonstrations and experiments as well as to show educational films to assist, where possible, any agency which needs help. The doors of the university should remain open to all seekers of knowledge.

3. Organisation of Adult Education Department and of Extension Services.

The universities should be encouraged to have a Department of Adult Education with the following functions:-

(i) Training adult education workers.

(a) In the note on 'Adult Literacy' the need of utilising the undergraduates for campaign against illiteracy is stressed and it is also proposed that those who go out in the campaign must while in the college or the university receive suitable training to enable them to deal with the adults to learn methods of teaching them and to appreciate the responsibilities of camp life. The Adult Education Department should organise training of the undergraduates for the purpose.

(b) Leadership in adult education will require special forms of training, such as that for adult educationists and social workers which this Department should organise.

(ii) Organise extension services and to ensure their implementation.

Extension service will undoubtedly be the function of all departments of the university. The Department of Adult Education should take the initiative

and set up inter-departmental committees for preparing schemes and plans for execution; and

(iii) To undertake and guide research in all problems connected with adult education in cooperation with other relevant Departments e.g., Education, Sociology and Psychology.

4. Universities Will Need Help

The functions described will entail

(a) additional personnel for the establishment of the Department of Adult Education, for the other departments of the university which participate in extension services and for implementation of extension services;

(b) additions to the libraries, establishment of film libraries, and obtaining stocks of audio-visual aids; and

(c) funds for carrying out extension services.

It is difficult to visualise at this stage what the requirements will be in terms of personnel and finance.

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TEACHING BY CORRESPONDENCE

By

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EDUCATION COMMISSION
UNIVERSITY GRANTS COMMISSION BUILDING
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1965

TEACHING BY CORRESPONDENCE

Introduction:

1. A good deal of the evidence for this method of instruction and an examination of its possibilities is contained in the following publications already issued in India:

- (a) Report of the Expert Committee on Correspondence Education, 1962.
- (b) Correspondence Courses, Ministry of Education, 1963.
- (c) Correspondence Education in Training Colleges, NCERT, 1964.

2. This note attempts only to summarise this material and some available foreign reports. Unesco is at the moment concluding a comparative survey on the subject and further evidence should be available in the coming months.

What Can Be Taught By Correspondence?

3. An examination of overseas practices shows that the method has and is being used for:

- (a) primary education (e.g. Australia, New Zealand, U.K.): generally for isolated or handicapped children. Limitation obvious since educated parent or supervisor necessary.
- (b) general secondary education. Widespread use, above all in socialist countries. In USSR more than half of students in higher and special secondary education follow studies in evening classes and by

correspondence while working. Generally limited to those over 16 who have had two years employment.

- (c) higher education. Generally limited to first degree work. Widely used in USA (over fifty colleges recognised by U.S. Armed Forces for such teaching).
- (d) professional education. Offered by commercial concerns as preparation for professional examinations (e.g. Institute of Engineers, Accountancy etc.).
- (e) technical and vocational education. This is one of most favoured forms of correspondence study (e.g. in Western Australia 330 different courses available with enrolment in 1960 of over 10,000). By way of reference these courses covered:

1. Agriculture and Horticulture. Agricultural theory; Animal Husbandry, Genetics, Agricultural Botany, Economic Botany, Beekeeping, Nursery practice and green keeping, Home Gardening, School Gardening, Farm Bookkeeping, Farm Machinery, etc.
2. General Education. English, Arithmetic, Trade Mathematics, Engineering Physics, Engineering Chemistry; Courses required as preparation for further studies by the pupil who has left school with a poor educational background.
3. Trade Apprenticeship. Courses to cover the five stages of apprenticeship in: Carpentry and Joinery, Brickwork Theory, Plumbing, Fitting and Machining, Blacksmithing, Motor Mechanics, Printing Composing, Letterpress Machining, Baking Trade Theory, Furniture Trades.
4. School Leaving Certificate and Matriculation. Courses are offered in subjects prescribed by the Public Examinations Board and for entry to Technical and Engineering Diploma and Associateships at Technical Institutes and Colleges.

5. Engineering and Surveying. Courses are offered at Diploma and Associateship level in : Civil, Mechanical, Electrical, Communications, Structural and Production Engineering; metallurgy and surveying. Courses are offered at certificate level for : Mechanical, Structural and Road Engineering Draftsmen; Radio Technicians, Television Operators, Television Servicing, Industrial Electronics and Lighting Technicians.
6. Commerce, General commercial subjects; Typing, Shorthand, Bookkeeping and Office practice. Accountancy, Cost Accountancy and Secretarial subjects. Insurance Institute and Bankers' Institute subjects. Public Administration, Local Government, Administration and Transport Administration subjects.
7. Teacher Training. Teachers' Higher Certificate Courses, Teachers' Certificate Courses, Technical Teachers' Certificate Courses, Teaching Techniques, Teaching Methods for Tutor Sisters.
8. Health Education. Health Inspection, Tropical Hygiene, Meat Inspection, Nutrition, Personal and Communal Health, Anatomy and Physiology and Physiology and Hygiene.
9. Other Courses. Art, Literature, Freelance Journalism, Short Story Writing, Writing for Radio, Handicrafts and Home Science.
10. University Courses. The Adelaide Technical Correspondence School assists University External Students with correspondence tuition.

(e) Teacher Training

- (f) Teacher Training. The method has been successfully used by a number of countries (e.g. Indonesia, Japan, USSR) for the training or upgrading of teachers. Either run by special institutes or by Faculties of Universities, e.g. State University of Sofia (Bulgaria) offers correspondence courses for prospective teachers of : mathematics, physics, chemistry, biology, geography, philosophy, history, languages (Belgarian, Russian, English, French) etc.

- (g) Adult Education. Many adults follow the above courses in order to obtain further qualifications. In addition, organisations (university extension, adult education centres, workers' organisations, etc., etc.) offer courses of a liberal nature, not leading to any examination.

Overcoming some of the Limitations of Correspondence Study

4. Since correspondence education is essentially self-study, though a two-way traffic of comments from a tutor forms part of this, it is frequently pointed out that the method has at least two handicaps: (a) isolation of the student from his teachers and fellow students; (b) difficulties of organising practical work in laboratory or workshop.

5. Countries using the method widely have adopted a number of measures to overcome these handicaps. Some of these are listed below:

- (a) frequent week-end and vacation courses are organised;
- (b) local schools and factories are required to give laboratory and workshop practice to students;
- (c) itinerant specialist teachers are employed to visit students and coach them over difficulties;
- (d) counsellors for a district are employed to be available to help individual students;
- (e) mobile laboratories and workshops are used to tour rural areas;
- (f) radio (Australia, Canada, New Zealand)

and television (Japan, USA) are used to give supplementary instruction and maintain contact;

(g) libraries of text and reference books are available for borrowing.

Organisational Aspects

6. One of the essentials of successful teaching by correspondence education is the existence of an efficient, smoothly operating administration of the service which ensures :

(a) availability of sound well-produced and frequently revised courses;

(b) regular despatch of assignments, comments on completed lessons, contact with students;

(c) maintenance of student records;

(d) constant search for improved operations.

7. Here is a Canadian description of an efficient correspondence school:

"There are ten distinctly different groups of related duties to be performed in the daily operation of a correspondence school. Each related group should be performed by one or more persons. In the early years of an establishment, one person only would be needed for each group and, in some cases, one person could perform the duties of two groups. The groups and their respective duties are as follows:

1. Mailing Section

To type the name and address of each newly enrolled student, and the name and address of his supervisor on a mailing-section ledger sheet.

To send out to students courses applied for and approved by the registrar, a term's work at a time.

To record the date of arrival of completed papers by students.

To sort the papers and to forward to each instructor for marking his papers for the day and to record their number.

To send out papers of the second and third term's work to students who are ready for them.

2. Enrolment Section

To type the appropriate form letter to each newly enrolled student.

To type the card on which his grades will be recorded.

To type a post office card and file it under the name of the city, village, or community in which the student lives.

To type a school card and file it under the name of the school that the student attends.

To type the coloured (we use yellow) label for the filing folder and to file the folder containing the student's file, which consists of the student's application form showing the course applied for and stamped by the mailing section and any letters which the student may have sent in prior to or at the time of enrolment.

3. Recording Section

To open parcels of corrected papers delivered or sent by instructors.

To record the number of papers marked by each instructor and the postage used.

To record the grading obtained by students on corrected papers.

To prepare corrected papers for remailing to students.

To report to the director consistently low grades obtained by any student or failure to send in papers in the proper order.

To prepare vouchers for the payment of instructors.

4. Filing Section

To open mail and stamp on each letter the date of arrival.

To find the appropriate file after the director has read each letter and indicated the person who is to attend to it.

To file letters after checking to make sure they have been answered.

5. Stenographic Section

To take letters from dictation.

To send out the form letters which can be used for routine correspondence.

6. Typist and Proof-Reading Section

To type courses from manuscripts of course writers.

To proof-read typewritten material.

7. Printing or Duplication Section

To run off required numbers of copies of papers for courses.

To assemble pages and bostitch.

8. Stock Section

To keep a record of stock of papers on hand.

To reorder stock of papers as required.

To order and control stationery stock.

9. Orders Clerk

To attend to student orders for textbooks and supplies.

To send out books and records from lending library.

10. Receptionist

To answer inquiries of the public.

To enrol people who wish to enrol in person.

To answer the telephone.

11. Book-Keeping Section

To do such book-keeping as the organisation requires.

The next requirement for the efficient operation of a correspondence school is an efficient staff of instructors. I recommend strongly the employment of "outside instructors". By "outside instructors" is meant instructors who work in their own homes and are paid on a paper basis and who are willing to work over-time during peak periods

so that papers may be returned to students within forty-eight hours of their arrival. When instructors wish to consult the director, they may do so by letter or by appointment. When corrected papers come back to the office to be returned to students, the director has ample opportunity to check on the work of the instructor.

Instructors must, of course, on appointment, receive much instruction in the correcting of papers and should be supplied with a booklet giving directions regarding techniques of instruction and information regarding the keeping of their records of papers marked during a month. The duties of an instructor are as follows:

- To acquire a thorough knowledge of the course he corrects.
- To acquire a knowledge of techniques of correspondence instruction.
- To correct papers of students promptly, giving any additional instruction required.
- To report to the director any inadequacies in the course he corrects.
- To report to the director unduly poor work on the part of any student.

When a revision of a course appears necessary, it is a good plan to have a course writer correct a course for a few months before he undertakes the rewriting of it.

The fourth requirement is a corps of course writers. At one time in British Columbia it was the practice to obtain the material for new courses from classroom teachers and to shape that material into a correspondence course in the office. This practice resulted in a few cases in excellent courses, but in most cases ended only in frustration. Classroom teachers were too busy to

complete the additional work they had undertaken. If and when the material finally did arrive, it was usually so late and so full of gaps that the editor-in-chief, that is, the director, was obliged to do countless hours of overtime work in order to issue acceptable courses on time.

In the case of technical, home economics, and agriculture courses, we are still obliged to employ classroom teachers to provide us with the material for a correspondence course. The work of presenting the material in the form of a correspondence course is then the work of a course writer.

The best possible guarantee of satisfactory correspondence courses is to employ a permanent staff of course writers.

The training of a correspondence course writer must be a fairly lengthy one. For some years the director must act as editor-in-chief of all that a new course writer produces. The duties of a course writer are:

To acquaint himself with the prescribed methods of presenting material for study, of setting up the material, of composing practice exercises and the exercises on which students are graded.

To acquaint himself with the prescriptions of the course to be written.

To explain prescribed subject matter clearly and in a lively style and to cover it adequately.

To check and recheck his work for accuracy and correctness on all details of subject matter and of expression.

To write in the form of a correspondence course material supplied by classroom teachers in technical subjects.

The last and most important requirements for an efficiently-run correspondence school are a really competent director and a registrar. All details in connection with the enrolment of students and with correspondence with students should be the responsibility of the registrar. Since I have performed the combined duties of registrar and director, I know that the combination is possible in a small establishment, but it makes the director's load a very heavy one and makes it practically impossible for him to do the travelling which his job may require. His initial duties would be :

To contact postal authorities with a view to arranging that all correspondence papers be treated as first-class mail.

To attend to the details of the physical set-up of the school.

To interview and select staff (authors of courses, instructors, office workers).

To instruct office staff in their duties.

To instruct course writers in correspondence methods of instruction.

To train instructors in techniques of instruction.

Once the first stages of organisation are completed, the duties of a director would include the following:

Training of instructors in techniques of instruction. (This work is never ending because of changes in instructional staff and because of the constant search for better methods.)

Checking of work done by beginning instructors.

Periodic checking of work trained instructors.

Checking daily to ensure that correction work does not lag.

Advising instructors on the handling of difficult cases.

Discussing with course writers the method to be employed in preparing new courses.

Acting as editor-in-chief of all new courses.

Dictating replies to letters.

Supervising office staff.

Checking delay in the postal service."

Conclusion

8. Correspondence education would appear to have a wide scope in India. As we have seen, courses can be offered by Universities, special institutes or commercial agencies. Where the latter are permitted (they predominate in such countries as Holland and Sweden), public authorities should lay down regulations for recognition.

9. Perhaps there is need for an All-India Directorate of Correspondence Education, covering both general and technical education, which would serve as a promoter of such education acting through the U.G.C., State Institutes of Education, Technical and Vocational Education Council, etc.

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TEACHER EDUCATORS - THEIR ROLE, STATUS
AND QUALIFICATIONS

by

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Teacher Educators - Their Role, Status
and Qualifications

The quality and the status of teacher education as a field of professional education cannot improve unless we have as teacher educators well-qualified persons with scholarship and academic achievement in their special subject-fields that command respect in the academic world. Besides the required academic and professional qualifications, teacher educators must have genuine interest and insight in teaching and in research in the form of trying out different methods of approach to teaching and organisation in schools and training colleges. They need a progressive outlook and readiness for experimentation. Persons with closed minds incapable of planning their work beyond the routine would do positive harm to teacher education. Great care has to be exercised, therefore, in the selection of teacher educators at all levels, since they are responsible for the professional preparation of teachers to whom education of children will be entrusted.

The scales of salary and conditions of service of teacher educators must be commensurate with the importance of their work. Separate detailed suggestions for teacher educators at elementary and secondary levels will be made at appropriate places in this paper.

The great danger that Training Colleges and their staff are likely to suffer from is that of isolation. Their work must bring them into touch with schools on the one hand, and with centres of higher education on the other. Isolation from schools will make their work as teacher educators unrealistic. Even those who are not in charge of Method courses must be intimately associated with the schools, if their work in their special-fields - be it Educational Psychology, Sociology

or Philosophy - is to be vital and of fundamental importance to education. Isolation from higher education and from academic disciplines other than education, is apt to narrow down the scope of teacher education within limits that will restrict the growth of education.

Staff of Elementary Training Institutions

At present, Elementary Training Institutions in most States are staffed by graduates with experience and qualifications in the field of Secondary education. Not having had any experience of young children at the Elementary school stage, they do not realise the needs and requirements of such children. They are, thus, not in a position to guide teachers under training regarding methods to be used in handling young children - methods depending on the understanding of children's needs, impulses and capacities.

The Elementary teacher educators must have knowledge of child psychology on the one hand and of the psychology of the adult on the other, because their students - the teachers under training - are adults with problems and attitudes peculiar to their state of development and they are to be prepared for education young children. In the study of Psychology for the B.Ed. course, the emphasis is on the characteristics of the stage of adolescence. Their previous study of Psychology, therefore, proves to be inadequate for their function as teacher-educators in Elementary Training Institutions.

In addition to the B.Ed. degree, they would require an orientation course of 3-4 months for the work involved in teacher education along with day-to-day experience for a month or so in a primary school. If they are M.Ed., who have specialised in Teacher

Education at the M.Ed. level and have offered the paper dealing with the organisation of teacher education at the primary level, no orientation will be necessary for them. It should not, however, be insisted on that only those who have offered Teacher Education at the M.Ed. level should be eligible for appointment on the staff of a Training College. Those who have specialised in other subjects will be equally necessary in a Training College to cope with the different subjects in the curriculum. They will need the orientation course for teacher educators referred to above.

In order to get suitable persons to work as teacher-educators in Elementary Training Institutions, emoluments and conditions of service must correspond to the responsible professional work they are called upon to do. Their scale of salary should be higher than that of teachers of High and even Higher Secondary schools. There should be a separate cadre for Teacher Educators and Assistant Deputy Educational Inspectors or Block Education Officers. The posts in the two sections should be interchangeable.

Staff of Secondary Training Institutions

The Task Force has recommended that Teacher Educators at the Secondary level should have the qualifications of M.A. (or M.Sc. or M.Com.) and M.Ed., preferably second class. Besides these academic and professional qualifications, they will require some experience of Secondary education and active interest and insight in the problems of education in general and Secondary education in particular.

Their status and salaries should be higher by at least three increments in the corresponding scale of Lecturers and Professors in Arts and Science colleges,

on account of the special professional type of work that they will be doing.

Their work must be so organised that they have opportunities for advanced study in their subject-fields and for research. They should have ample scope for undertaking and guiding research and other studies. Their work, therefore, should not be so heavy as to make it impossible for them to work on such problems.

Contribution of an article to an educational journal of some standard every year and preparation of a research paper in two years should be a requirement. It is to be considered whether it would be desirable to supplement the work of Secondary Training Colleges by inviting or appointing persons who have high academic attainment in basic pedagogical subjects such as Sociology or Philosophy or Psychology of Education and in basic academic subject coming under the Languages, Humanities or Sciences. They can make their unique contribution to the studies in the Training Colleges. It is the practice in Germany that for the basic pedagogic studies, recognised authorities in the subjects are appointed without their having held the Teachers' Certificate. Restricting the staff of Secondary Training Colleges to those who hold the B.Ed. and the M.Ed. degrees and have experience as Secondary School teachers is likely to have a cramping effect on the work of the Training College. A leaven of other academic disciplines appears to be necessary. Such specialists should be associated with the schools in one capacity or another. The school will provide the field of investigation for their special subjects. It will not be desirable that persons on the staff of the Training Colleges should consider that they are concerned only with the study of their own subject and have nothing to

do with school teaching. Actually team teaching in some form, where those with professional qualifications and those who are specialists in subjects such as Sociology, Philosophy or Psychology or in the subjects coming under Humanities and Sciences work as a team in planning the programme and lectures, discussions, seminars and readings and also implementing it seems to be an urgent need of Secondary Training Colleges.

The problems to be considered, therefore, are as follows :-

- (a) The qualifications of teachers-educators at Elementary and Secondary levels;
- (b) The scales of salary and conditions of service for teacher-educators;
- (c) The appointment of persons who hold no professional qualifications on the staff of training colleges; and
- (d) Arrangements for team-teaching.

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USE OF IMPROVED TEACHING TECHNIQUES
AND METHODS IN INDIAN EDUCATION

by

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Use of Improved Teaching Techniques
and Methods in Indian Education

Introduction

1. There is sufficient evidence available from overseas to show that new teaching methods and equipment can do one or several of the following things:

- (a) extend and enrich the work of the classroom teacher;
- (b) release the teacher of routine repetitive work so that he can concentrate on more creative work or on particular groups of pupils or students;
- (c) multiply the effect of scarce outstanding teachers;
- (d) on occasions, replace the teacher (e.g. self-study material).

2. To achieve any of the above on a wide scale in India four factors have to be considered:

- (a) questions of relative costs;
- (b) supply of trained teachers who can use these sophisticated methods and devices;
- (c) which agencies are to be responsible for their introduction and promotion;
- (d) availability of traditional teaching aids - textbooks, blackboards, science equipment, etc.

3. Listing these factors is another way of saying that India is not yet in a position to make a wide-scale use of these methods and devices. Granting their potential usefulness, the problem is to isolate strategic points where some can be used or experimented with and to identify the responsible agencies for this programme.

4. It is probable that such experimentation will only be worthwhile if it is done systematically, is carefully evaluated and is not too higgardly.

A question of scale probably enters; that is, a critical mass of trained people and sufficient materials must be produced before any real break-through could happen.

5. In carrying out such experimental programmes, action will be needed in each of the following fields:

- (a) research and development;
- (b) production of prototype material;
- (c) distribution to educational agencies;
- (d) use by teachers;
- (e) evaluation of each step in the foregoing processes of research, production, distribution and use.

6. The above takes account of the formal education system only. It must be recognised

that the mass media in particular - radio, films and the press - are considerable forces for informal education. Some present effects may be judged deleterious. Ways should be found and, when necessary, agencies set up to devise ways of using the mass media for truly educational purposes among adult and child audiences. It may well be also that lessons in radio and film appreciation could be given in schools.

7. Before attempting any suggestions for action a brief review of the methods and devices available for use in formal education may be helpful.

Some New Methods and Techniques

I. Devices Using Sound

A. Radio

8. Radio is already in use for classroom and adult education (Farm Forum etc.) work in India. Limitations include absence of "feed-back", inflexibility, of lessons times. Effective instructional use requires prior distribution of good-printed material. Its potentialities for information and motivational purposes yet to be fully exploited.

B. Radio-Vision

9. An attempt to overcome some of the limitations of radio by supplying the teacher with visual aids for display and projection during the broadcast lesson. Considerable administrative difficulties in this technique.

C. Tapes and Records

10. These can be used for enlivening lessons with voices of leaders in contemporary history or pre-recorded lectures by outstanding specialists. Their chief use, however, probably lies in music appreciation and above all language instruction.

D. Language Laboratories

11. A more sophisticated use of tape recorders for language instruction permitting the student to record and compare his pronunciation, construction etc. with pre-recorded master tape; to respond to questions on master tape; and permitting teacher to control individual students from

control panel while all students are at work. If used well, can speed up and improve functional language learning considerably.

12. Laboratories as presently available can handle four to 32 students simultaneously. Prices vary from about \$ 2000 to \$ 15,000. Most favoured units abroad have 16 student booths. Many feel manufacturers are keeping prices deliberately high and some agency in India (All India Radio Research Department) might develop a cheaper but robust unit based on commercially available tape records (good Japanese models can be had for around \$ 200 per unit). An Indian language laboratory with 16 booths and control panel could conceivably be made for around \$ 3000.

13. In Indian conditions one should also reckon costs of installation (e.g. a concrete floor is probably essential, air conditioning against dust and humidity certainly is). The services of a technician would also be needed.

14. Some training in use of these laboratories is necessary. A fair number of pre-recorded language courses on master-tapes are commercially available.

15. In India the chief use of these could be:

- (a) training language specialists for secondary schools and training colleges;
- (b) supplementary language instruction at universities and colleges.

16. There may also be a case for an all India Language Institute for:

- (a) training diplomats, military, commercial people etc. in variety of foreign languages;
- (b) carrying out research in language teaching methods adapted to Indian conditions;
- (c) preparing recorded material in modern Indian and foreign languages for instructional use.

II. Devices using visual images.

A. Films

17. These are scarcely new though their full potential has yet to be exploited. There is a plentiful supply of films (including full courses in science, history, geography, etc.) slides, filmstrips available on the market. These might be more fully exploited in establishments already possessing equipment, in refresher courses etc.

18. The relatively new developments may be mentioned:

(a) 8 mm. loop projectors. These are extremely simple to use, the screen and projector being one unit and the teacher being obliged only to place a cassette containing the film (which rewinds itself automatically) into the projector unit. Silent, sound, black-and white and colour films are becoming available for these. Films are short (3-8 minutes) and confine themselves to teaching a "concept" (e.g. behaviour of light waves). Teacher can stop on an image, repeat as often as necessary, prepare his own commentary.

(b) Overhead projectors. These permit a teacher to project on a screen above his head any object, drawing, diagram, etc. or to draw on a special plate while speaking the resulting image being projected.

B. Television

19. (a) Open-Circuit (Broadcast) television lessons for supplementing teachers work and bringing best specialists into the classroom widely used in USA, Japan, France, Federal Republic of Germany among others. Some experiments carried out in Delhi. Its best audiences would appear to be secondary schools or adults for home study purposes, though some use in higher education and teacher training possible.
- 20 (b) Closed-circuit television. Here the camera and receivers are generally in the same institution and simply linked by cable. Thus many students in medicine, for example, can follow close-ups of work of a surgeon at any distance from him.
21. Wide use is now being made of closed circuit t.v. in training colleges in U.K. permitting many teachers in training to watch a class in action, or a good teacher in action, and have the benefit of the lecturer's comments without disturbing the class.
22. Close-circuit T.V. also has a use in technical and engineering education in demonstrating processes or operations to large number of students.
23. Closed circuit T.V. units (i.e. camera plus four receivers) available in Japan for as low as \$ 2000.

24. An adaptation of closed-circuit T.V. is with the use of the video-tape recorder, something like a sound tape recorder but using different tapes and projecting both images and sound. This permits the use of pre-recorded T.V. lessons available from various U.S., U.K. and other sources or conceivable made eventually in India. Some spectacular recent technological developments in this field have brought the price of such video-recorders down from over \$ 20,000 to around \$ 3,000.

III. Programmed Instruction and Teaching Machines

25. Here we are dealing not with devices but with a teaching method, based on certain theories of learning.

26. The method consists essentially in the presentation to the student (either in printed form or through a machine) small, logically sequential steps in a learning course, to each of which he must react and on each of which he receives immediate control as to whether his answer was correct or not. The method permits students to proceed individually at their own speed and permits also a fair amount of self-study or individual remedial work.

27. The method has been tried successfully in nearly all levels and forms of education. It is extremely flexible and can be used with cyclostyled sheets, printed textbooks, loose-leaf note-books, blackboard exercises for group work, through simple or elaborate machines

(where for example tape-recordings and films are coupled to the printed material), and even with television and digital computers.

28. A fair amount of printed courses are now available from the U.S. and U.K. and some could be tried out. The best course, eventually, would be for educators in India to develop their own programmes once they have mastered the techniques and have these tried out and cheaply manufactured (by cyclostyling even) here in India. This should be well worthwhile in the field of science education and pre- and in-service training of science teachers. Programmed instruction has been called the first real revolution in teaching since printing was invented.

29. Teaching machines of the simpler kind do have a place in both the classroom and in the training of industrial operatives. But they need programmes in order to be of use.

IV. Correspondence Courses:

30. This technique is treated at greater length in a separate paper. For the record we may note that it can be used for:

- (a) part-time secondary education;
- (b) first-degree education;
- (c) certain forms of technical, vocational and professional education;
- (d) teacher training;
- (e) adult education.

V. Low-Cost Teaching Aids

31. The National Institute of Audio-visual Education has done much pioneer work in this field. A vigorous programme to develop and adapt cheap teaching aids in mathematics and science teaching and have these used in the schools is needed. Teachers (particularly in primary and middle schools) could have more coaching in making their own teaching aids, even for nature study and sciences.

VI. Some Questions and Conclusions for Discussion:

32. Without listing the arguments for and against, some suggestions for lines of action are given below:

(a) the University Grants Commission should have a unit and budget to act as clearing house of information for universities and colleges on new techniques and methods and for underwriting a series of experiments at the higher education level in arts, sciences, engineering, medicine, etc. etc.

(b) The N.C.E.R.T. ^{and State Institutes of Education} may be charged with a widespread experimental production and use of new techniques and methods in teacher training (both pre-and in-service) particularly for science and language teachers:

(c) a corporation may be set up for the development and mass manufacture

of cheap teaching aids;

(d) a national foreign language institute may be created for research training and development of language teaching;

(e) universities may be helped to develop extension programmes for more wide-spread adult education, using some of the new teaching methods and techniques.

(f) Film, press and radio Councils may be created or strengthened with participation of educators and media specialists for the development of these media as agencies of information education;

(g) there may be a case for creating a new all-India agency to overall^{see} and co-ordinate the above programmes. Alternatively, the agencies named above could be given charge of the implementation of programmes and a new body be set-up^{to} act as a research and servicing agent to them.

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SOME PROBLEMS OF TEACHER-EDUCATION

By

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1965

Some Problems of Teacher-Education

1. Organisation and duration of teacher-training:

We need to prepare teachers for schools and educational institutions at the following levels :-

- (a) Pre-Primary Schools.
- (b) Primary Schools.
- (c) Middle Schools, or Middle Classes attached to Primary or Secondary Schools.
- (d) High Schools.
- (e) Higher Secondary Schools.
- (f) Colleges.

Should there be a separate training course for each level or could training at two levels be combined with advantage to each level.

The present practice is to have a combined course of training, (a) for Primary and Middle Schools, and (b) for High Schools and Higher Secondary Schools. It is felt in many quarters that it is not desirable to combine the training for teachers of Primary and Middle Schools, as the organisation of work in schools at these two levels is on a different basis altogether. In the primary classes one teacher is required to teach all subjects and work as a class teacher, whereas specialisation begins at the middle school level, calling for a different type of training. Secondly, the curriculum at the primary level is activity-centred and the methods of teaching are informal and based on activities. At the middle class level systematic learning of subjects begins with children who are now capable of understanding more abstract types of concepts and processes. Thus there is a greater affinity in the teaching methods of Pre-primary Schools and Primary Schools (Classes I to IV or V), than there is between those used in primary and middle schools.

Similarly, it is felt that there is a greater affinity in the methods to be used at the middle

and high schools. If the organisational pattern of 7 years of elementary education, 3 years of high school education and 2 years of higher secondary education is accepted, the work at the last stage of two years will have to be organised on a different pattern from that of the high school with greater use of methods of self-study and discussion.

It is, therefore, for consideration whether teacher-training courses may be organised in the following manner:-

First level-training for pre-primary and primary schools,

Second level-training for middle and high schools;

Third level-training for higher secondary schools and colleges,

with provision made (a) for emphasis on one of the stages at each level in practice-teaching and methodology courses, and (b) for a ladder to one level of training from another.

If this is accepted as the pattern for training courses, the qualifications of student-teachers for the first level of training should be matriculation as at present. Later on it may be extended to the completion of the higher secondary course. The duration of the course could be ^{of} one year with 240 working days to be followed by in-service training programmes of one month each year during the vacations for the subsequent two years.

A year's course for teachers of Classes I-IV or V and for pre-primary teachers would make it easily possible to get the number of teachers required for the programme of compulsory universal education for the age-group 6-11. As a further study of the school subjects will not be a great need for teachers of this level, the course of one year's duration will be adequate for the necessary professional preparation required for this stage.

For the second level training, qualifications of trainees will offer a problem. If the training course is common for middle and high school teachers, it would appear to be desirable that graduation is a necessary qualification for

teachers of this level, but it is doubtful if it will be possible to insist on graduates with graduates' scales for middle schools, within the financial resources available. But if the second level training is for teachers of middle schools and high schools together, the qualifications of entrants will have to be the same.

The training course will have to deal with the needs of pupils who will be leaving off their studies at the end of the middle school stage and of those who will be proceeding to the high schools. The needs of both the groups are urgent. In the middle classes, the educational programme must be exploratory for those proceeding with higher education and of a terminal character. It will be desirable to consider these two stages as linked up with each other, as one naturally leads to the other. Where middle classes are attached to secondary schools, the whole period will form one unit. If graduates are to be trained at the second level of training, one year's duration for training will be adequate. The graduates will not need to spend much time over general education and the study of the content courses in school subjects because of their higher academic qualifications. Thus the additional period required for academic education to the graduate level will be partly compensated for by reduction in the course of training. If, however, it is not feasible to employ graduates in the middle classes, the training of matriculates or higher secondary pass teachers for middle schools will have to be separate and its duration will have to be of two years to enable the teachers to specialise in the further study of the subjects that they will have to teach at the middle school level. The Group working on Teachers-Status has recommended strongly that graduates should be employed in middle schools in large numbers so that those who will be leaving education at this stage as well as those who will be continuing will get the right kind of education.

As regards the training for high school teachers or for higher secondary school teachers, a training course of two years' duration appears to be desirable. The Pakistan Commission on National Education has recommended that the course for teachers at this level should be of two years' duration. They have stated that the lengthening of the training course recommended by them may slow up expansion, but they consider that the reforms suggested by them will not bear fruit unless this fundamental reform in the training of teachers is carried out. They remark "Indeed, this is the key to all educational progress, for a one year's course is not adequate to equip the teacher to discharge the responsibilities which we have entrusted to the teaching profession". They have pointed out that the teacher needs not only to deepen his knowledge of all the subject he is to teach, he must also learn the techniques and methodology of teaching and have time to practise these as well as to acquire insight into child psychology and the nature of child growth. In addition, he must understand class organisation and school management, know something of school and community relations and of the ethics of his profession, and have time to develop some special interests. They have maintained strongly that no course of less than two years' duration can possibly achieve all these objectives except the course of professional preparation for Classes I to IV.

The Task Force of the Commission considered this problem but came to the conclusion that it would not be feasible to recommend a two years' course for graduates. Apart from the cost involved in the lengthening of the course, there is the question of the readiness of the students to undergo two years course. It is well-known that most graduates come to the teaching profession as a last resort and if the duration was increased to two years, there might be greater willingness to undergo the training course. Besides, graduates are adults

with responsibilities of all kinds and need a special stipend while they are under training. In many of the training colleges in rural areas seats are lying unutilised because graduates do not find it possible to pursue their training without adequate financial assistance. A two years' course for graduates is not feasible but by lengthening the number of working days and daily working hours in the present one year course, it will be possible to achieve more. For the Secondary Training College programme, it would be essential to have 240 working days with the working hours arranged suitably to meet the needs of the course.

2. The Curriculum and Courses of Study for Elementary and Secondary Teachers:

In the total education of a teacher, not merely the one or two years' training course, there should be a proper balance between courses of general education, subject matter courses in the intended teaching fields and professional courses. The curriculum and courses of study for elementary and secondary teachers, therefore, will have to be considered from the point of view of achieving such balance. Underlying the course, there must also be the objective of helping the development of the personality of the individual student and building up his attitudes. He will have to be helped to develop a consciousness of values in the intellectual, aesthetic, moral and social fields. There is the need to cultivate among students under training a high sense of professional ethics and an understanding of the role of the teacher in nation-building.

Curriculum and Courses of Study for Elementary Teachers

If the completion of the High School course

which follows a broad curriculum is a necessary qualification for an intending elementary school teacher, it can be said that he has had sufficient general education for the needs of his duties by the time he has completed his High School course, at least in so far as teaching in Standards I to IV is concerned. He has also had subject matter courses in the intended teaching fields as well, though, as he has studied these subjects from his own viewpoint and not that of the children he will subsequently teach, there will be need for some study of the subject matter from the children's viewpoint. Thus, with S.S.C. as the necessary qualification for entrants, elementary teacher training institutions would be in a position to give a major portion of their time to professional subjects. A similar change came earlier in the Western countries. With the raising of the qualifications for the entrants to normal schools, in Germany, the programme of teacher training laid an emphasis on professional studies, the subject matter of one to two or perhaps three teaching fields and on practice teaching. Similarly, the time-table in French, ecoles normales for students entering with the baccalaureat reveals that about a fifth of the formal work is devoted to general education, the rest of the time being divided equally between theoretical studies in education and "preparation for social and economic activities".

The curriculum for the first level of training will thus comprise:

- (a) Pedagogic subjects such as Child Study,

School Community relationships, The Principles of Teaching in the Primary School situation in rural and urban areas, and Methods of Teaching;

- (b) Study of syllabuses and instructional material in school subjects from the viewpoint of children to be taught;
- (c) Teaching practice; and
- (d) Practical work in the preparation of teaching aids, craft and in community activities.

As mentioned earlier, the training institutions will have to assist in the development of the all-round personality of the teacher and building up attitudes to the profession of teaching and towards children and the community. The would-be teacher will need to develop a consciousness of values.

The curriculum for the second level of training - chiefly for middle-classes and with Matriculate student-teachers as entrants - will include besides pedagogic subjects as given above, a course in general education which will have a more flexible and general curriculum than that of the Higher Secondary course, specialised study of the teaching field along with a study of instructional material in school subjects from the viewpoint of children, and teaching practice.

In the syllabus and the study of the basic pedagogic subjects, the relevance of these studies to the functions of a teacher will need to be stressed, in particular.

The practice teaching must be under realistic conditions and organised in such a manner

that it will prepare the teachers for work in actual conditions in schools such as large classes of 40 to 45 pupils, pupils coming from different home backgrounds and single teacher schools. The cooperation of the teachers in the practising schools will be valuable in the organisation of such a programme. The co-operative teachers will have to work under the direction of the Principal and the staff of the training college.

The subject of school-community relationship included in the curriculum will have to be studied in an essentially practical manner. The teacher should be prepared for guiding parents who not having had the benefit of education are not education-oriented and the community in general in rural areas.

In the principles and methodology of teaching, the teacher would need to be trained to devise programmes and methods of teaching which will prove to be attractive to the children. One of the causes for drop-outs at various stages of the elementary course is that the pupils find the entire programme of work unrelated to their lives and their interests. They also find it difficult to adjust themselves to formal methods of teaching. They need methods of the type of play way and an approach through experience and activities. If the primary teacher realises this situation, he will be able to evolve methods and programmes which will appeal to children and which for that reason will have the power to retain them in school.

At these levels of training, a substantial part of the time will be devoted to practical work,

practice teaching and activity programmes. As regards practical work, a special problem has to be considered. It may be granted that teachers in Primary and Elementary Training Institutions will be prepared for activity centered schools having the physical and the social environments of the children and the crafts synthesising them as the centres of the educational programme. It is necessary to decide at which stage a craft will be introduced in Elementary Schools, the objectives of teaching craft and the expected level of attainment. It will also have to be decided whether there should be specialists to teach craft systematically in Standards V to VII or whether all trained teachers will be required to teach craft in these classes. The place of craft in the training of teachers depend on decisions on the above points. If the purpose of introducing craft in the training course is to develop manual skills, to build attitudes to manual work and to prepare teachers to manage hand work in lower classes, the course can be simpler and will not require more than 1/8th of the total time devoted to it. If, however, the trained teacher is to teach a craft in the middle classes, the craft course in the training institutions will have to be more thorough and will require more time.

A sense of professional ethics will have to be developed through example and informal discussion rather than through including it as a subject in the curriculum. The same will apply to developing a sense of values.

Curriculum and Courses of Study for Secondary Teachers:

In the present prevalent pattern of Secondary Teacher Training, graduates who have completed their studies in the university are given course in teacher training of one year's duration. It appears that for various reasons this will continue to be the predominant pattern of teacher training for a considerable time.

With graduates as students under training, the general concentration in the Secondary Teacher Training Course has been on professional subjects and teaching practice. As a matter of fact, general education courses and courses in specialisation and subject matter study in the teaching fields, have found hardly any place in the curriculum. The need for these courses is being realised on account of two main reasons; the rapid development of knowledge and the structure of the degree courses. If the significance of 'the explosion of knowledge' is realised fully, place must be found in the training college curriculum for courses in general education as well as in courses in specialised study of subjects included in the teaching field. The teacher under training may be a graduate but knowledge is advancing so rapidly that what he has learned earlier in the University, will get out-of-date unless some incentive is provided for keeping him in touch with the latest developments in the field of knowledge. The same can be said about the development that will be taking place in each of the school subjects. Another reason why the need for subject matter courses has become urgent is

that generally there is no exact correspondence between the subjects required for the first degree and the subjects taught in Secondary Schools. Detailed knowledge of the two subjects which a Secondary teacher is required to specialise in teaching, cannot be expected even from those who have graduated with subjects such as History or Geography which are also taught at the school level.

It has, therefore, become necessary to include some content or subject matter courses in the curriculum of Secondary training colleges to meet the needs of three types of students. First of all, it will be necessary to provide content courses within the course of training for such teachers as have studied the school subjects at the University level in order to deepen their knowledge content, to make it up-to-date and to lead them to relate it to the syllabus of the subjects that will be required to teach in schools. A good teacher at the Secondary School stage cannot confine himself to the syllabus or the textbook meant for pupils; he must be able to draw out the implications underlying the different units of the syllabus and go beyond the textbook in his teaching work.

Secondly, content courses will be necessary for those who are to teach subjects like Social Studies, or General Science. These are integrated subjects and include a study of different subjects all of which graduates cannot be expected to have studied at the college level. Special content courses, therefore, will be necessary in these subjects.

In the third place, there are teachers who

have not studied any of the school subjects at the college level, except perhaps languages such as English and the mother tongue, as is the case with graduates in Philosophy, Sociology and Politics. It would not be desirable to deny admission to such graduates to the teaching profession because the study of their special subjects has given them attitudes and principles which will be valuable for work of a teacher. It is true that they lack knowledge of the subjects to be taught. It would, therefore, be necessary to introduce special diplomas with two or three papers and some practical work, according to the requirements of each subject to enable such teachers to acquire the necessary qualifications.

It must be realised that the main object of the curriculum at the secondary training level is to prepare the teachers for their work in secondary schools. The emphasis, therefore, should be on practice teaching and the theory should be closely related to the work of the teacher. At present, the courses in theory are bookish, encumbered with deadwood and unrelated to work in the school.

Practice teaching suffers at present from many defects. Practice lessons are often given under un-realistic conditions; the methods used tend to be artificial and the teacher is given no opportunity for participation in the school programme. There is hardly any active co-operation from the end of the schools; they merely provide the facilities required for practice teaching and this is done grudgingly. The scheme of practice teaching needs a drastic change and it can be modified at the secondary level. Practice teaching

should be in the form of internship with active co-operation from the schools and the teachers working in the schools. The co-operating schools and the teachers will require some orientation in the work of guidance and supervision. Some incentives and recognition will have to be provided to the schools as well as the teachers. The Education Department will have to give its active support to the training colleges in securing the co-operation of the schools. It must be realised that teacher education is a joint responsibility of good schools and training colleges. This realisation should express itself in the schools being given a responsible role in the programme of teacher education.

Concurrent courses of general and professional education such as the one at Kurukshetra University of three years' duration after the completion of the High School stage and as those at the Regional Colleges of three years' duration after the completion of the Higher Secondary stage, appear to be in the right direction as affording opportunities for co-relating general and professional education. The time over which they are spread, make it possible for the Faculty to attend to the personal and professional development of the teacher and the building up a professional and general attitudes. These experiments, however, must be studied and watched carefully before their extension on a large-scale can be recommended. They require that a student should make a choice to enter the teaching profession at the early age of 16 or 17,

and it is extremely doubtful whether at this stage many students will make such a choice. At present the stipends offered to the students joining such courses have proved to be an attraction for young Matriculates or Higher Secondary boys who might otherwise be denied opportunities of higher education.

A most urgent need of training colleges is a demonstration or a laboratory school with which the College, its staff and students will have active contacts. Much of the theory in the curriculum which at present remains merely theoretical, will have practical application in the working of such schools.

The main problems of the curriculum of the Secondary teachers are :

- (a) The need for organising courses of general education and of specialisation in teaching fields;
- (b) Giving a practical bearing to the study of all pedagogic subjects;
- (c) Proper organisation of practice teaching;
- (d) Method of developing professional ethics; and
- (e) Method of developing value consciousness.

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ENROLMENT POLICIES IN SECONDARY EDUCATION

by

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1965.

Enrolment Policies in Secondary Education

I. THE BACKGROUND OF THE PROBLEM

The paper on "Enrolment Policies in Indian Education" by Member-Secretary, Shri J.P. Naik, was considered by the Education Commission at its meeting held on 3rd and 5th April, 1965. The present paper discusses in somewhat greater detail the enrolment policies on education at the secondary stage. These policies should be examined against the background of educational developments in this country, particularly since Independence and the social, economic and other relevant factors of the existing situation. The following points deserve special consideration.

1. During the British period, secondary education progressed at a slow pace, because the view prevailing at the time was that it was not meant for the masses, that it was to be provided on a selective basis, and that it should be financed largely from the fee income. The proposals of the Sargent Plan (1944) for the reconstruction of secondary education were in keeping with this approach. These proposals required that there should be a test at the age of 11 plus, and that one child out of every five should be selected and given a good secondary schooling of six years. Public opinion, however, has changed so radically during the last 20 years that such an approach would be absolutely unacceptable today. The demand for secondary education has increased in intensity during successive Plan periods and rises now and then to clamour. This change in the public attitude is due to the following among other reasons:-

(a) The old job values which used to be attached to a primary school certificate have almost disappeared. For most clerical or teaching posts in Government service, the successful completion of at least high school education:

is the minimum academic qualification.

(b) The slow rate of economic growth in the country does not create adequate opportunities for the elementary school leaver for other kinds of employment with the result that he continues (or is made to continue) his education in the secondary school instead of remaining unemployed and idle at home.

(c) Developments in Western countries, where secondary education has been made universal, compulsory and free, have exerted a powerful influence on educational thought and practices in this country.

2. Many State Governments have responded to the public demand for more and more secondary education by providing either free studentships, as in Jammu and Kashmir and Madras, or liberal fee concessions as in Maharashtra, Gujarat and the Punjab. People now expect free education at the secondary stage before even before the completion of the programme for free universal education at the elementary stage.

3. The rapid expansion of primary education as a result of the implementation of the constitutional directive regarding free and compulsory universal education up to the age of 14 has naturally resulted in the creation of intensive pressures from below and a phenomenal increase in the enrolment of pupils in the secondary schools. The total enrolment at the secondary stage has advanced from 16.76 lakhs in 1950-51 to 22.83 lakhs in 1955-56 and 38.87 lakhs in 1960-61 and is estimated to rise up to 57 lakhs in 1965-66. If the present trends continue, it may well be that the enrolment at the secondary stage may go up by 1981 to 300 lakhs. That is to say, the total enrolment at this stage by the end of the Sixth Plan would be about 50% of the age group of 14-17 as against 18% at the end of the Third Plan period.

4. The phenomenal expansion described above has led to a great dilution of standards and the springing up of a number of sub-standard secondary schools having insufficient accommodation, unqualified staff and inadequate equipment. The dilution of standards at the institutional level leads to further expansion, which in its turns strengthens the downward process of increasing dilution. Thus a vicious circle is set up which has contributed to a marked deterioration in the quality of secondary education in recent years.

5. Even among those secondary schools which are not regarded as sub-standard there are few which offer education of a high quality and an enriched curriculum suited to the needs of talented children. Moreover such schools are by and large meant for the children of the privileged classes. Though merit scholarships are now awarded by Government to enable talented children of parents in low income groups to enter some of the residential public schools, the number of such scholarships is limited and the enrolment of such poor talented scholars insignificant.

6. Apart from the dilution of standards, one of the most serious difficulties of secondary education is that it^{is} still mainly of an academic and liberal character without adequate provision for vocational training leading to employment at the end of the secondary stage. While vocational schools of different kinds have been established, their number is small and the enrolment therein not substantial. At the end of 1961-62, there was an enrolment of 4.25 lakhs in vocational schools as against an enrolment of 34.62 lakhs in secondary schools providing general education. In other words, only about 12% of the students in secondary education are enrolled in vocational schools as against 88% in schools of general education. This imbalance in secondary education is an unsatisfactory feature in a society which is aiming^{at} a rapid economic

growth and industrial development.

7. The existing situation regarding the location of secondary schools is not very satisfactory. There are many parts of the country where secondary education is not easily available; on the other hand there are other small places with sparse populations where more than one secondary school has been established. These institutions are often uneconomic and inefficient and sometimes indulge in un-healthy competition with one another.

II. PROPOSED ENROLMENT POLICIES

Having regard to the background described above the following enrolment policies are recommended for the secondary education stage.

8. Control of indiscriminate expansion: Since resources are limited and the standards of secondary education need to be raised, it is necessary that the present rapid and indiscriminate expansion of full-time general education must be controlled. It is true that in keeping with our national goals Government should provide certain facilities in secondary education for all those who desire to have it. But this does not necessarily imply that Government should give the same kind of facilities at this stage for all the pupils coming from the elementary schools irrespective of their interests, aptitudes and abilities. The following measures may be adopted for controlling rapid and indiscriminate expansion:

(a) There should be an examination at the end of the elementary stage. It should be optional for the pupils to appear or not to appear for this examination, but a pass in it should be regarded as essential for admission to general secondary education on a full-time basis. Such a qualifying examination will help in (a) a proper selection of students for further education,

general or vocational and (b) the maintenance of standards at the elementary stage. It will help to create better motivation both for the teachers and the pupils in the elementary schools.

(b) The present policy of giving free studentships or liberal concessions in fees will have to be modified. The rule regarding fee concessions is largely misused. It is taken advantage of by people who can afford to pay fees and results in a considerable loss of fee income which could very well be used by the Government for effecting qualitative improvement. Fees should be charged from those who are able to pay, but concessions should be given to those who are deserving but economically handicapped. If free secondary education is to be provided at all, it must be done on some rational and equitable basis. We cannot have, as is the practise in some States, free education in Government schools but fees charged in private institutions.

(c) If the normal conditions of recognition of secondary schools are rigidly enforced, sub-standard schools will not spring up and the rapidly increasing enrolment can be controlled to some extent. No new schools should be allowed to be opened unless they satisfy certain well-defined criteria. It may even be necessary to withdraw recognition from those schools which are sub-standard and do not satisfy essential requirements.

9. Vocationalisation of secondary education: It is necessary to vocationalise the content of secondary education to the maximum extent possible. Vocational education will be provided at two stages: (a) after Class VII or Class VIII (at the end of the elementary stage) and (b) after Class X (at the end of the high school stage.) At the first stage, it will be necessary to establish a system of apprenticeship training on as

large a scale as possible so that children of 14 years of age can be admitted as apprentices into different industries and given preparatory training for entry into various vocations as skilled workers later on. Besides this, it will be necessary to establish a large number of vocational institutions such as junior agricultural school, junior technical schools, trade centres, industrial training institutions etc. which will prepare students for specific jobs in agriculture, industry and other occupations. At the second stage also, a large number of pupils completing the high school course will be diverted to different kinds of vocational institutions such as polytechnics, teacher training schools, health schools, agricultural training schools, industrial training institutions, home science schools, commercial and secretarial institutions etc.etc. The duration of the courses at both the stages may vary from one to three years depending upon the nature and the scope of the vocational course.

10. Facilities for part-time education: Facilities for secondary education on a part-time basis, general or vocational, should be made available for all those students who desire to have it. This may be of two categories: (a) for those who have qualified for admission to general secondary education but have not been able to get admission for some reason or the other, and (b) for those who have failed to qualify for such education but still desire to have it. Part-time education may be provided both on an institutional basis and also through correspondence.

11. Students who have entered life after completing 14 years of age should be assisted to improve their educational and vocational competence through part-time courses in which general and vocational education will be provided.

12. Establishment of selected quality schools: Since it will not be possible to improve the quality of education in all the secondary schools at the same time, a phased programme of selective improvement should be immediately undertaken. The aim should be to have by the end of the Fifth Plan at the latest a good secondary school in every community block imparting secondary education of a high quality and having adequate hostel facilities. A comprehensive programme of scholarships should be provided to enable talented students from all parts of the community development block to avail themselves of this high quality secondary education.

13. Rational location of secondary schools: The development and location of secondary schools should be on a rational basis. The educational survey should be revised as on 31.3.1966 and a comprehensive plan of secondary education prepared for each district with the following objectives: (a) to ensure equitable distribution of secondary schools and avoid over lapping (b) to ensure that secondary schools of an optimum size are established to avoid wastage and inefficiency (c) to ensure that children in all parts of the country have a fairly easy access to secondary education.

14. Flexibility in the pattern: Flexibility is of the essence in the organisation of secondary education on a comprehensive scale. The pattern of secondary education should be sufficiently flexible so as to allow for transfers of students from the vocational to the academic courses and vice versa subject to certain conditions.

III

PHASED PROGRAMME FOR THE THREE PLANS

If the policies described above are adopted it is felt that by the end of the Sixth Plan (1981) the enrolment in the Second Level of education would cover

(as stated in Shri Naik's paper) about 45% of the corresponding age-group on a full-time basis and 5% of the age group on a part-time basis. The remaining 50% of the age-group would have entered life- about 20% at the age of 14 and an additional 30% at the age of 16. The targets to be reached at the end of the Third, Fourth and Fifth Plans as given in Shri Naik's paper are reproduced below:-

| Time | In full-time general secondary education. | In full-time vocational & technical education. | In part-time education. | Total |
|---|---|--|-------------------------|-------|
| At the end of the Third Plan (1965-66) | 18% | 2% | Nil | 20% |
| At the end of the Fourth Plan (1970-71) | 24% | 3% | 1% | 28% |
| At the end of the Fifth Plan (1975-76) | 30% | 5% | 3% | 38% |
| At the end of the Sixth Plan (1980-81) | 36% | 9% | 5% | 50% |

CAUSES OF THE FAILURES AT THE PUBLIC
EXAMINATIONS

..

By

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1965.

CAUSES OF THE FAILURES AT THE PUBLIC EXAMINATIONS

The high percentage of failures (50%) at the secondary school leaving examinations in different States has been a cause of great anxiety to teachers, educationists and educational administrators. Several studies have been undertaken in recent years to find out the causes of these failures. Most of them agree with regard to major causes, which are stated below.

1. Unsatisfactory Classroom Instruction:

This may be due to one or more of the following causes:

(a) Poor quality of teachers: Many teachers in secondary schools are either untrained or under-qualified and sometimes to teach the subjects that are allotted to them. Even trained and qualified teachers are often not sufficiently equipped to be effective in classroom teaching. They do not keep themselves abreast of modern methods and techniques, as the provision for in-service training is inadequate and incentives are not provided by the managements in the form of advance increments or allowances for additional qualifications.

(b) Non-availability of teachers: In subjects like Science and Geography many schools in certain areas do not have any teachers at all. This naturally gets reflected in the quality of instruction in the classroom.

(c) Lack of interest in classroom work: Some teachers take less interest in classroom teaching than in private tuitions or other activities outside the school. This is largely due to the low salary scales and the need the teachers feel to supplement their regular income.

(d) Inadequate planning, preparation and follow-up: Many teachers go to the classroom without adequate preparation, and few of them take the trouble to develop a termwise or unitwise plan of lessons. Most of the teaching is, therefore, uncoordinated and unimaginative and slavishly imitates the pattern developed in the textbooks. Home assignments

are not very frequent, and even when they are given, they are not regularly supervised and almost never used to develop better learning methods among the pupils.

(e) Inadequate supervision of teachers: The headmaster is usually too busy with administrative matters to find time for supervising the work of the teachers. The educational officers who go to the schools for periodic inspections do not give the teachers any academic guidance.

2. Unsatisfactory Conditions of Work:

(a) Overcrowding in classes: Consequent on the phenomenal expansion of education in recent years, overcrowded classes constitute a common feature in secondary schools in urban areas today; but no serious attempt has been made to develop proper techniques of teaching for dealing with this problem. Many teachers seem to feel that, since they cannot teach a class of 50 to 60 pupils effectively, they need not do any teaching at all.

(b) Inadequate facilities: Many schools do not have adequate accommodation, proper scientific equipment or even the simple teaching aids required for ordinary classroom instruction. The conditions in some schools are so depressing that teachers are not inclined to take any interest in their work at all.

(c) Heterogeneous composition of the class population: As a result of indiscriminate admissions and sometimes lenient promotions, pupils of different levels of attainment sit together in the same class and receive common instruction. Moreover, with the large increase in enrolment at the secondary stage, more and more average and below the average pupils are entering the school and many of them find it difficult to cope with the courses. All these developments have created educational problems in the classroom, particularly for the inexperienced teacher.

3. Defects in the System of Examinations: Examinations are used for the purpose of grading and ranking pupils, and their diagnostic and remedial functions are completely ignored. The questions are generally stereotyped and the test only rote memorisation. Quite often there is a big gap between what is prescribed (which is the basis on which the examiners set their questions) and what the pupils actually know. The questions are predominantly of the essay type so that the assessment cannot be very objective and reliable. There is a great disparity between the promotion rules adopted in the schools and those followed by the Boards for their examinations. This results in a large percentage of failures at the public examination.

4. Larger number of failures in certain subjects:

English and Mathematics have been found to contribute substantially to the large percentage of failures at the external examination. The courses in English and Mathematics^{are,} to some extent, out-of-date, and the quality of instruction in these subjects is particularly unsatisfactory.

5. Wrong selection of subjects

Where diversified courses of studies are provided, pupils choose electives not with reference to their interests, aptitudes or abilities, but because of the potential value of these subjects for admission to higher education in certain courses later on. As there are no facilities for guidance and counselling in the large majority of schools, many pupils make wrong choices and fail in the examination.

6. Influence of Home Environment:

Since the parents of most children are poorly educated, the educational environment in the home is not very congenial for hard work and proper application. The pupil receives hardly any help or encouragement at home and has to depend for his success largely on instruction in school.

7. Insufficient number of effective teaching days:

A substantial part of the school year is taken up by holidays, vacations, school functions and examinations, and there are not enough days for effective classroom instruction. The teachers find it difficult to complete the present courses within the time available to them.

8. Specific Causes:

In addition to the general causes mentioned above, there are some special causes which are applicable to failures in particular States.

(a) Medium of Instruction: In a study conducted in Delhi, it was found that a sudden shift in the medium of instruction from Hindi or Urdu in Class VIII to English in Class IX led to many failures.

(b) Frequent transfers of teachers: Mysore has reported that in some areas teachers are transferred frequently and their vacancies are not filled in for several months. This seriously affects studies in the senior classes.

(c) Non-availability of textbooks: In some multilingual areas, in Mysore, textbooks are not available in certain languages. The children have sometimes to remain without textbooks for almost the whole year.

(d) Double Shift System: Punjab has stated that the system of double shift followed in Government secondary schools has reduced the total hours of tutorial work, thereby adversely affecting the pupils' attainment in the different subjects.

(e) Vested interests and unhealthy rivalries: Reports from U.P. show that some secondary schools are run on commercial lines and are engaged in unhealthy competition with one another sometimes with the connivance of the teachers. Indiscriminate admission and promotions are made in the institutions leading to poor results.

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STATISTICAL PAPER No. I

EXPANSION OF EDUCATIONAL FACILITIES IN INDIA

(1946-47 to 1965-66)

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Educational Statistics in India (1946-47 to 1965-66)

I. Growth of Population in India according to Age-groups

| Item, | (Figures in Thousands) | | | | | | | |
|----------------------------------|------------------------|----------|-----------|----------|----------|----------|----------|----------|
| | 1950-51 | | 1955-56 + | | 1960-61 | | 1965-66 | |
| | Total | Females | Total | Females | Total | Females | Total | Females |
| 1. Total Population | 36,11,30 | 17,55,54 | 40,01,83 | 19,42,48 | 43,92,35 | 21,29,41 | 49,47,81 | 23,95,52 |
| 2. Population in the Age-groups: | | | | | | | | |
| 6-10 | 4,44,72 | 2,17,47 | 5,02,83 | 2,46,36 | 5,60,94 | 2,75,25 | 6,55,70 | 3,22,41 |
| 11-13 | 2,42,69 | 1,17,29 | 2,70,17 | 1,31,06 | 2,97,64 | 1,44,82 | 3,40,46 | 1,67,01 |
| 14-16 | 2,25,80 | 1,08,98 | 2,49,21 | 1,20,60 | 2,72,61 | 1,32,22 | 3,10,35 | 1,51,41 |
| 3. Population in the Age: | | | | | | | | |
| 10 | 84,83 | 41,17 | 95,12 | 46,35 | 1,05,42 | 51,52 | 1,21,47 | 59,73 |
| 13 | 78,96 | 38,10 | 87,63 | 42,44 | 96,29 | 46,77 | 1,09,84 | 53,79 |
| 16 | 73,56 | 35,53 | 80,92 | 39,17 | 88,28 | 42,81 | 1,00,50 | 48,92 |

+ Figures have been interpolated.

Source: Census statistics and population projections supplied by the Registrar-General of India.

Educational Statistics in India (1946-47 to 1965-66)

II. Pre-Primary Education

| Item | 1946-47 | | 1950-51 | | 1955-56 | | 1960-61 | | 1965-66 (Estimated) | |
|--|-----------|-----------|---------|-------|---------|-------|---------|-------|---------------------|-------|
| | Total | Girls | Total | Girls | Total | Girls | Total | Girls | Total | Girls |
| 1. No. of Institutions | | | 303 | 81 | 630 | 211 | 1,909 | 230 | 3,500 | - |
| 2. Enrolment in Pre-Primary Schools (in 000's) | | | 22 | 10 | 46 | 20 | 121 | 56 | 200 | 95 |
| 3. Enrolment at Pre-Primary stage (in 000's) | | | 28 | 13 | 75 | 31 | 179 | 82 | 250 | 120 |
| 4. Expenditure (Rs.) | | | | | | | | | | |
| (i) Total (in 000's) | | | 11.98 | 350 | 24.99 | 745 | 58.73 | 1079 | 1,00.00 | - |
| (ii) Percentage of expenditure on salaries of teachers to total expenditure. | | | 66.0 | 75.7 | 57.9 | 58.7 | 63.1 | 61.8 | 60.0 | - |
| 5. TEACHERS:- | | | | | | | | | | |
| (i) Total | available | available | 866 | 696 | 1,880 | 1,591 | 4,006 | 3,599 | 6,500 | 5,500 |
| (ii) Percentage of trained teachers | | | 64.0 | 63.5 | 60.9 | 61.3 | 66.5 | 66.5 | 70 | 70 |
| (iii) Percentage of Graduate & Post-Graduate teachers | not | not | 10.6 | 9.2 | 8.3 | 7.2 | 9.3 | 8.7 | 10 | 10 |
| (iv) Percentage of Intermediate & matriculate teachers. | | | 25.9 | 26.7 | 34.8 | 36.1 | 43.7 | 44.6 | 50 | 50 |
| (v) Percentage of under-matriculate teachers | Data | Data | 63.5 | 64.1 | 56.9 | 56.8 | 47.0 | 46.7 | 40 | 40 |
| 6. Pupil-Teacher Ratio | | | 25 | - | 24 | - | 30 | - | 31 | - |
| 7. Cost per pupil (Rs.) | | | 55.4 | - | 54.5 | - | 48.5 | - | 50 | - |

Source: Ministry of Education, Forms

Educational Statistics in India (1946-47 to 1965-66)

III - Primary Education

| Item | 1946-47 | | 1950-51 | | 1955-56 | | 1960-61 | | 1965-66 (Estimated) | |
|--|---------|-------|---------|-------|---------|--------|---------|--------|---------------------|----------|
| | Total | Girls | Total | Girls | Total | Girls | Total | Girls | Total | Girls |
| 1. Number of Schools, | 172361 | 21480 | 209671 | 13901 | 278135 | 15230 | 330399 | 19829 | 4,00,00 | 25,000 |
| 2. Enrolment in Primary/ Junior Basic Schools (in 000's) | 13036 | 3475 | 18294 | 5196 | 22920 | 6973 | 26644 | 8374 | 4,00,00 | 1,53,00 |
| 3. Enrolment in Classes I-V (-do-) | 14105 | 3480 | 19154 | 5335 | 25167 | 7639 | 34994 | 11401 | 5,10,00 | 1,80,00 |
| 4. Percentage of enrolment in classes I-V to population 6-10 | 35.0 | 17.4 | 43.1 | 24.8 | 50.1 | 31.0 | 62.4 | 41.4 | 77.8 | 55.8 |
| 5. Percentage of enrolment in class V to population in age 10 | N.A. | N.A. | 22.4 | 10.3 | 25.2 | 12.5 | 34.3 | 19.8 | 43.2 | 27.1 |
| 6. Expenditure (Rs.) | | | | | | | | | | |
| (i) Total (in 000's) | 184367 | 30098 | 364843 | 35049 | 537272 | 47184 | 734461 | 52756 | 112,00,00 | 10,00,00 |
| (ii) Percentage of expendi- -ture on salaries of teachers to total expenditure. | N.A. | N.A. | 80.3 | - | 83.5 | - | 88.1 | - | 90.0 | - |
| 7. TEACHERS | | | | | | | | | | |
| (i) Total | 406123 | 55575 | 537913 | 82281 | 691249 | 117067 | 741695 | 126831 | 10,50,00 | 2,00,00 |
| (ii) Percentage of trained teachers | 64.1 | 69.1 | 58.8 | 69.1 | 61.2 | 73.7 | 64.1 | 73.4 | 70.0 | 75.0 |
| (iii) Percentage of graduate & post-graduate teachers | N.A. | N.A. | 0.2 | 0.5 | 0.4 | 0.6 | 0.6 | 1.2 | 1.0 | 1.8 |
| (iv) Percentage of Intermediate/ Matriculate teachers | N.A. | N.A. | 10.1 | 11.8 | 24.0 | 21.9 | 35.7 | 34.1 | 45.0 | 43.0 |
| (v) Percentage of under- matriculate teachers | N.A. | N.A. | 89.7 | 87.7 | 75.6 | 77.5 | 63.7 | 64.7 | 54.0 | 55.2 |
| 8. Pupil Teacher Ratio | 32 | - | 34 | - | 33 | - | 36 | - | 38 | - |
| 9. Cost per pupil per annum | 14.2 | - | 19.9 | - | 23.4 | - | 27.6 | - | 28.0 | - |

Source: Ministry of Education, Forms A.

Educational Statistics in India (1946-47 to 1965-66)

IV. Middle School Education

| | 1946-47 | | 1950-51 | | 1955-56 | | 1960-61 | | 1965-66 (estimated) | |
|---|---------------|-------|---------|-------|---------|-------|---------|-------|---------------------|----------|
| | Total | Girls | Total | Girls | Total | Girls | Total | Girls | Total | Girls |
| 1. Number of schools | 12843 | 1653 | 13596 | 1674 | 21730 | 2337 | 49663 | 4666 | 78,000 | 8,000 |
| 2. Enrolment in Middle/Senior Basic Schools (in 000's) | 1781 | 321 | 2073 | 397 | 38,13 | 892 | 10611 | 3412 | 1,60,00 | 55,00 |
| 3. Enrolment in classes VI-VIII (in 000's) | 2036 | 320 | 3330 | 534 | 42,93 | 867 | 6705 | 1630 | 1,08,00 | 23,00 |
| 4. Percentage of enrolment in classes VI-VIII to age-group 11-13 | 9.0 | 2.9 | 13.7 | 4.6 | 15.9 | 6.2 | 22.5 | 11.3 | 31.7 | 16.8 |
| 5. Percentage of enrolment in class VIII to population in the age-group 13 | N.A. | N.A. | 10.8 | 3.4 | 13.2 | 5.2 | 18.3 | 8.4 | 25.3 | 12.5 |
| 6. Expenditure (Rs.) | | | | | | | | | | |
| (i) Total (in 000's) | 48029 | N.A. | 76990 | - | 154050 | 19795 | 429220 | 47834 | 65,50,00 | 8,00,00 |
| (ii) Percentage of expenditure on salaries of teachers to total expenditure | Not available | | 75.8 | - | 77.9 | - | 85.1 | - | 85.0 | - |
| 7. TEACHERS | | | | | | | | | | |
| (i) Total | 72413 | 10619 | 85496 | 12387 | 148394 | 23844 | 345238 | 83532 | 520000 | 1,40,000 |
| (ii) Percentage of trained teachers | 59.0 | 63.5 | 53.3 | 53.3 | 58.5 | 67.1 | 66.5 | 73.4 | 70 | 75 |
| (iii) Percentage of graduate/postgraduate teachers | N.A. | N.A. | 5.6 | 6.9 | 7.3 | 7.2 | 5.2 | 4.5 | 8 | 6 |
| (iv) Percentage of Intermediate/Matriculate teachers | N.A. | N.A. | 41.6 | 33.5 | 43.1 | 38.0 | 48.0 | 41.9 | 56 | 50 |
| (v) Percentage of untrained matriculate teachers | N.A. | N.A. | 62.3 | 59.6 | 49.6 | 54.8 | 46.8 | 53.6 | 36 | 44 |
| 8. Pupil Teacher Ratio | N.A. | N.A. | 24 | - | 26 | - | 31 | - | 31 | - |
| 9. Cost per pupil | 47.0 | - | 37.1 | - | 40.4 | - | 40.5 | - | 40.9 | - |

Source: Ministry of Education, Forms A.

Educational Statistics in India (1946-47 to 1965-66)

V. High/Higher Secondary Education.

| Item | 1946-47 | | 1950-51 | | 1955-56 | | 1960-61 | | 1965-66 | |
|---|---------|-------|---------|-------|---------|-------|---------|--------|---------|--------|
| | Total | Girls | Total | Girls | Total | Girls | Total | Girls | Total | Girls |
| 1. Number of schools | 5298 | 725 | 7288 | 1064 | 10838 | 1583 | 17257 | 2521 | 27,000 | 4000 |
| 2. Enrolment in high/higher secondary schools (in 000's) | 2194 | 232 | 3160 | 550 | 4714 | 977 | 7512 | 1826 | 110,000 | 3000 |
| 3. Enrolment in school classes IX and above (in 000's) | 871 | N.A. | 1220 | 163 | 1878 | 320 | 2887 | 541 | 5200 | 1000 |
| 4. Percentage to age group 14-16 | N.A. | N.A. | 5.4 | 1.5 | 7.5 | 2.7 | 10.6 | 4.1 | 16.8 | 6.6 |
| 5. Expenditure:- | | | | | | | | | | |
| (i) Total (Rs. in 000's) | 122259 | 19144 | 230450 | 35568 | 376144 | 62891 | 689117 | 115909 | 1080000 | 220000 |
| (ii) Percentage of expenditure on salaries of teachers to total expenditure | N.A. | N.A. | 69.1 | - | 72.0 | - | 72.3 | - | 72.0 | 2 |
| 6. TEACHERS:- | | | | | | | | | | |
| (i) Total | 87862 | 11643 | 126504 | 19982 | 189794 | 35085 | 296056 | 62293 | 440000 | 95000 |
| (ii) Percentage of trained teachers | 51.5 | 67.1 | 53.8 | 66.2 | 59.7 | 72.9 | 64.1 | 73.9 | 70.0 | 75.0 |
| (iii) Percentage of graduate & postgraduate teachers | N.A. | N.A. | 41.8 | 37.4 | 47.7 | 42.1 | 49.7 | 44.3 | 55.0 | 50.0 |
| (iv) Percentage of Intermediate & Matriculate teachers | N.A. | N.A. | 40.8 | 41.7 | 38.6 | 42.1 | 40.2 | 44.2 | 37.0 | 40.0 |
| (v) Percentage of under-matriculate teachers | N.A. | N.A. | 17.4 | 20.9 | 13.7 | 15.8 | 10.1 | 11.5 | 8.0 | 10.0 |
| 7. Pupil teacher ratio | 25 | - | 25 | - | 25 | - | 25 | - | 25 | - |
| 8. Cost per pupil. | 55.7 | - | 72.9 | - | 79.8 | - | 91.8 | - | 98.2 | - |

Source: Ministry of Education, Forms A.

Educational Statistics in India (1946-47 to 1965-66)Table No. VI - Schools for Vocational and Technical Education

| Item | 1946-47 | | 1950-51 | | 1955-56 | | 1960-61 | | 1965-66 (Estimated) | |
|--|-----------|--------|---------|--------|---------|--------|----------|---------|---------------------|---------|
| | Total | Girls | Total | Girls | Total | Girls | Total | Girls | Total | Girls |
| Total No. of Schools for Vocational and Technical Education | N.A. | N.A. | 2,339 | 460 | 3,074 | 689 | 4,145 | 857 | 5,500 | 1000 |
| Total enrolment in Vocational and Technical Schools (in 000's) | N.A. | N.A. | 187 | 41 | 261 | 63 | 401 | 79 | 6,00 | 1,00 |
| Total Expenditure (Rs. in 000's) | N.A. | N.A. | 369.43 | 25.18 | 545.08 | 78.08 | 11,40,92 | 1,22,89 | 23,00,00 | 2,00,00 |
| <u>Teacher Training Schools (included in the above)</u> | | | | | | | | | | |
| No. of Schools for Teacher Training | 649 | 206 | 782 | 215 | 930 | 252 | 1,138 | 257 | 1300 | 300 |
| Total enrolment in Teacher Training Classes* | 38,773 | 11,111 | 70,063 | 17,994 | 90,914 | 25,881 | 1,22,682 | 31,552 | 1,60,000 | 50,000 |
| Total expenditure on Schools for Teacher Training (Rs. in 000's) | 91,01 | 28,07 | 152,29 | 37,61 | 197,57 | 42,51 | 3,48,11 | 64,02 | 6,40,00 | 1,40,00 |
| Cost per pupil per annum | Rs. 234.7 | - | 219.4 | - | 236.7 | - | 315.0 | - | 400 | - |

* Includes enrolment in attached classes to other schools
 Source: Ministry of Education, Forms A.

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Educational Statistics in India (1946-47 to 1965-66)

VII - Universities, Boards and Research Institutions.

| | 1946-47 | | 1950-51 | | 1955-56 | | 1960-61 | | 1965-66 | |
|--|---------|-------|---------|-------|---------|-------|----------|-------|----------|--------|
| | Total | Girls | Total | Girls | Total | Girls | Total | Girls | Total | Girls |
| A. UNIVERSITIES | | | | | | | | | | |
| 1. No. of Universities | 17 | - | 27 | 1 | 32 | 1 | 45 | 1 | 66 | 1 |
| 2. No. of University Teaching Deptts. | N.A. | N.A. | 237 | - | 305 | - | 479 | - | 690 | - |
| 3. Enrolment in University Teaching Deptts. | 16,148 | N.A. | 31,321 | 2,733 | 49,476 | 5,649 | 73,381 | 9,296 | 1,00,000 | 12,500 |
| 4. Teachers | N.A. | N.A. | 3,085 | 92 | 3,497 | 193 | 5,589 | 275 | 8,500 | 400 |
| 5. Expenditure (Rs in thousands) | 2,29,77 | - | 4,90,53 | 2,95 | 7,98,05 | 3,36 | 14,13,89 | 4,73 | 25,00,00 | 3,00 |
| B. Boards of Intermediate/Secondary Education | | | | | | | | | | |
| 1. Number | 6 | - | 7 | - | 11 | - | 13 | - | 15 | - |
| 2. Expenditure (Rs in thousands) | 9,73 | - | 53,38 | - | 1,32,40 | - | 2,41,33 | - | 4,00,00 | - |
| C. Research Institutions | | | | | | | | | | |
| 1. Number | - | - | 18 | - | 34 | - | 41 | - | 50 | - |
| 2. Expenditure (Rs in thousands) | - | - | 62,56 | - | 1,39,04 | - | 2,69,86 | - | 6,00,00 | - |

Source : Ministry of Education, Forms A & B.

Educational Statistics in India (1946-47 to 1965-66)

VIII. Colleges for Arts and Science

| ITEM | 1946-47 | | 1950-51 | | 1955-56 | | 1960-61 | | 1965-66 (Estimated) | |
|---|----------|-------|----------|--------|----------|--------|----------|----------|------------------------|----------|
| | Total | Girls | Total | Girls | Total | Girls | Total | Girls | Total | Girls |
| 1. Number of Colleges | 420 | 59 | 498 | 69 | 712 | 104 | 1,039 | 165 | 1,500 | 200 |
| 2. Enrolment in Arts & Science Colleges | 1,96,158 | N.A. | 3,10,123 | 37,973 | 5,22,530 | 77,689 | 6,91,632 | 1,30,287 | 10,00,000 | 1,80,000 |
| 3. Enrolment in General Higher Education* | 1,93,402 | N.A. | 3,25,723 | 40,318 | 5,75,247 | 84,092 | 8,08,023 | 1,49,891 | 12,00,000 | 2,40,000 |
| 4. Expenditure: | | | | | | | | | | |
| (i) Total (Rs. in 000's) | 4,39,15 | N.A. | 7,17,14 | 62,01 | 11,64,74 | 97,69 | 20,91,53 | 2,25,02 | 30,00,00 | 5,00,00 |
| (ii) Percentage of Exp. on Salaries of teachers to total exp. | N.A. | N.A. | 57.6 | - | 62.8 | - | 62.2 | - | 60.0 | - |
| 5. Total number of Teachers | N.A. | N.A. | 15,312 | 1,623 | 23,812 | 2,929 | 35,555 | 5,345 | 50,000 | 8,000 |
| 6. Pupil Teacher ratio | N.A. | N.A. | 20 | - | 22 | - | 19 | - | 20 | - |
| 7. Cost per pupil per annum | 223.9 | - | 231.2 | - | 222.9 | - | 302.4 | - | 300.0 | - |

* Includes enrolment in University teaching Department & Research Institutions

Source: Ministry of Education, Forms A.

Educational Statistics in India (1946-47 to 1965-66)

A. Colleges for Professional Education

| Item | 1946-47 | | 1950-51 | | 1955-56 | | 1960-61 | | 1965-66 (estimated) | |
|--|---------|-------|---------|-------|---------|-------|----------|--------|------------------------|---------|
| | Total | Girls | Total | Girls | Total | Girls | Total | Girls | Total | Girls |
| Total No. of Professional Colleges | 140 | N.A. | 208 | 17 | 346 | 24 | 852 | 97 | 1200 | 130 |
| Total Enrolment in Professional Colleges (in 000's) | 44 | N.A. | 54 | 4 | 149 | 9 | 194 | 27 | 3,00 | 50 |
| Total Expenditure on Professional colleges (Rs. in 000's) | 1,86,59 | N.A. | 421,93 | 25,18 | 7,00,08 | 38,69 | 15,80,41 | 70,14 | 32,00,00 | 2,00,00 |
| <u>Teacher Training Colleges (included in the above)</u> | | | | | | | | | | |
| Total No. of colleges | 42 | N.A. | 53 | 14 | 107 | 21 | 478** | 92 | 250 | 50 |
| Total enrolment in Teacher Training Classes * | 3,095 | N.A. | 5,781 | 1,930 | 14,280 | 4,318 | 46,770 | 15,249 | 30,000 | 10,000 |
| Total Expenditure (Rs. 000's) | 22,01 | N.A. | 35,47 | 7,00 | 65,66 | 10,61 | 2,15,14 | 32,47 | 2,40,000 | 50,00 |
| Cost per pupil per annum | N.A. | N.A. | 331.8 | - | 583.0 | - | 424.1 | - | 800.0 | |

Source: Ministry of Education, Form A

** Includes undergraduate institutions also.

* Includes enrolment in Teacher Training classes attached to other institutions.

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EDUCATIONAL STATISTICS IN INDIA (1946-47 TO 1965-66)

X. Schools and Colleges for Special Education.

| ITEM | 1946-47 | | 1950-51 | | 1955-56 | | 1960-61 | | 1965-66 (Estimates) | |
|---------------------------------------|---------|-------|---------|-------|---------|-------|---------|--------|------------------------|--------|
| | Total | Girls | Total | Girls | Total | Girls | Total | Girls | Total | Girls |
| <u>Schools for Special Education</u> | | | | | | | | | | |
| 1. Total No. of Schools | N.A. | | 52,813 | 7,555 | 50,987 | 4,680 | 67,084 | 13,287 | 1,00,000 | 20,000 |
| 2. Total enrolment (in 000's) | N.A. | | 14,04 | 213 | 14,38 | 167 | 16,90 | 335 | 20,00,00 | 500 |
| 3. Total expenditure (in 000's) | N.A. | | 233,35 | 25,35 | 265,29 | 24,33 | 3,19,97 | 38,02 | 4,00,00 | 50,00 |
| <u>Colleges for Special Education</u> | | | | | | | | | | |
| 4. Total No. of Colleges. | N.A. | | 92 | 7 | 112 | 14 | 208 | 21 | 300 | 40 |
| 5. Total enrolment (in 000's) | N.A. | | 7 | 2 | 13 | 4 | 25 | 10 | 50 | 20 |
| 6. Total expenditure (in 000's) | N.A. | | 22,24 | 301 | 36,35 | 612 | 91,25 | 14,68 | 1,50,00 | 20,00 |

Source: Ministry of Education, Forms A.

Educational Statistics in India (1946-47 to 1965-66)XI Educational Expenditure by Sources

| SOURCE | 1946-47 | | 1950-51 | | 1955-56 | | 1960-61 | | 1965-66 (estimated) | |
|-----------------------------------|----------------|----------------------|----------------|----------------------|----------------|----------------------|----------------|----------------------|---------------------|------------|
| | Amount | Per- cent- age | Amount | Per- cent- age | Amount | Per- cent- age | Amount | Per- cent- age | Amount | Percentage |
| | (Rs. in 000's) | | (Rs. in 000's) | | (Rs. in 000's) | | (Rs. in 000's) | | (Rs. in 000's) | |
| 1. Central Government | 25,95,89* | 45.3 | 3,52,47 | 3.1 | 12,14,94 | 6.4 | 29,57,78 | 8.6 | 40,00,00 | 7.3 |
| 2. State Government | | | 61,74,31 | 54.0 | 1,05,05,56 | 55.4 | 2,04,51,36 | 59.4 | 3,60,00,00 | 65.5 |
| 3. District Boards | 5,18,67 | 8.7 | 7,86,02 | 6.9 | 9,89,98 | 5.2 | 11,83,36 | 3.4 | 16,00,00 | 2.9 |
| 4. Municipal Board | 3,21,54 | 5.8 | 4,63,85 | 4.0 | 6,45,50 | 3.4 | 10,65,78 | 3.1 | 20,00,00 | 3.6 |
| 5. Fees | 15,22,22 | 25.6 | 23,32,72 | 20.4 | 37,90,33 | 20.0 | 59,02,58 | 17.1 | 80,00,00 | 14.5 |
| 6. Endowment and other sources | 8,07,81 | 14.6 | 13,28,85 | 11.6 | 18,19,80 | 9.6 | 28,77,15 | 8.4 | 34,00,00 | 6.2 |
| 7. Total | 57,66,13 | 100.0 | 1,14,38,22 | 100.0 | 1,89,66,10 | 100.0 | 3,44,38,01 | 100.0 | 5,50,00,00 | 100.0 |

* Includes Expenditure from Central Government funds.

Source:- Ministry of Education. 'Form A'

Educational Statistics in India (1946-47 to 1965-66)

XII - Educational Expenditure by Objects (% in 000's)

| Objects | 1946-47 | | 1950-51 | | 1955-56 | | 1960-61 | | 1965-66 (Estimated) | |
|--|-----------|------------|----------|------------|------------|------------|------------|------------|---------------------|------------|
| | Amount | Percentage | Amount | Percentage | Amount | Percentage | Amount | Percentage | Amount | Percentage |
| <u>DIRECT Expenditure</u> | | | | | | | | | | |
| 1. Pre-Primary Schools | N.A. | - | 11,98 | 0.1 | 24,99 | 0.1 | 58,73 | 0.2 | 1,00,00 | 0.2 |
| 2. Primary Schools | 18,48,67 | 32.6 | 36,48,43 | 31.9 | 53,72,72 | 28.3 | 73,44,61 | 21.3 | 1,12,00,00 | 20.4 |
| 3. Middle Schools | 4,80,29 | 8.5 | 7,69,90 | 6.7 | 15,40,50 | 8.1 | 42,92,20 | 12.5 | 65,50,00 | 11.9 |
| 4. High/Higher Secondary Schools | 12,22,59 | 21.5 | 23,04,50 | 20.1 | 37,61,44 | 19.8 | 68,91,17 | 20.0 | 1,08,00,00 | 19.6 |
| 5. Schools for Vocational and Technical Edn. | N.A. | N.A. | 3,69,43 | 3.2 | 5,45,08 | 2.8 | 11,40,92 | 3.3 | 23,00,00 | 4.2 |
| 6. Universities, Research Insts. and Boards | 2,39,50 | 4.2 | 6,06,47 | 5.3 | 10,69,49 | 5.7 | 19,25,08 | 5.6 | 35,00,00 | 6.4 |
| 7. Colleges for Arts and Science | 4,39,15 | 7.7 | 7,17,14 | 6.3 | 11,64,74 | 6.1 | 20,91,53 | 6.1 | 30,00,00 | 5.4 |
| 8. Colleges for Professional Edn. | 1,86,59* | 3.3 | 4,21,93 | 3.7 | 7,00,08 | 3.6 | 15,80,41 | 4.6 | 32,00,00 | 5.8 |
| 9. Schools and Colleges for Special Edn. | 2,55,56// | 4.5 | 2,55,59 | 2.2 | 3,01,64 | 1.6 | 4,11,22 | 1.2 | 5,50,00 | 1.0 |
| 10. Total Direct Exp. | 46,72,35 | 82.3 | 91,05,39 | 79.6 | 1,44,80,69 | 76.4 | 2,57,35,88 | 74.7 | 4,12,00,00 | 74.9 |

* Includes expenditure on Special Colleges also

// Excludes expenditure on Special Colleges.

----- contd. on
next page

XII (contd)

| Objects | 1946-47 | | 1950-51 | | 1955-56 | | 1960-61 | | 1965-66 (Estimated) | |
|--|----------------------|------------|------------|------------|------------|------------|------------|------------|---------------------|------------|
| | Amount | Percentage | Amount | Percentage | Amount | Percentage | Amount | Percentage | Amount | Percentage |
| <u>INDIRECT Expenditure</u> | | | | | | | | | | |
| 11. Direction and Inspection | 1,82,38 | 3.2 | 2,73,64 | 2.4 | 4,00,06 | 2.1 | 7,01,23 | 2.0 | 10,45,00 | 1.9 |
| 12. Buildings | 2,84,53 | 5.0 | 9,92,70 | 8.7 | 19,63,58 | 10.4 | 42,81,58 | 12.4 | 61,05,00 | 11.1 |
| 13. Scholarships, Stipends and other Financial Concessions | * | - | 3,44,56 | 3.0 | 8,21,72 | 4.3 | 20,02,22 | 5.8 | 38,50,00 | 7.0 |
| 14. Hostel Charges | | | 1,82,64 | 1.6 | 2,66,10 | 1.4 | 4,31,49 | 1.3 | 8,75,00 | 1.6 |
| 15. Miscellaneous | 5,36,57 [@] | 9.5 | 5,39,28 | 4.7 | 10,33,96 | 5.5 | 12,85,62 | 3.7 | 19,25,00 | 3.5 |
| 16. Total Indirect Expenditure | 10,03,48 | 17.7 | 23,32,82 | 20.4 | 44,85,42 | 23.6 | 87,02,14 | 25.3 | 1,38,00,00 | 25.1 |
| 17. Grand Total | 56,75,83 | 100.0 | 1,14,38,22 | 100.0 | 1,89,66,10 | 100.0 | 3,44,38,01 | 100.0 | 5,50,00,00 | 100.0 |

* Included in Miscellaneous

@ Includes expenditure on Scholarships etc.

Source: Ministry of Education, Form 'A'