REPORT ON SCIENCE EDUCATION IN SECONDARY SCHOOLS



MITTEE ON PLAN PROJECTS GOVERNMENT OF INDIA, NEW DELHI

November 1964

REPORT ON SCIENCE EDUCATION

I N

SECONDARY SCHOOLS



COMMITTEE ON PLAN PROJECTS
GOVERNMENT OF INDIA
NEW DELHI

November 1964

LETTER OF TRANSMITTAL

Dr. K. N. Mathur, Chairman.

D.O. No. ESE/V (92)/64.

Panel for Science Education in
Secondary Schools,
Committee on Plan Projects,
Planning Commission,
Link House,
3, Mathura Road,
New Delhi-1.
December 3, 1964.

Dear Shri Nandaji,

I have great pleasure in forwarding to you the Report of the Panel for Science Education in Secondary Schools. This Panel was set up in pursuance of a meeting held in the Planning Commission under the Chairmanship of Prof. M. S. Thacker, Member, Planning Commission and as an off-shoot of the earlier COPP Report or Science Laboratories and Equipment in High/Higher Secondary Schools. As you will kindly observe from the Report, it was a broadbased and composite Panel representing State Governments, Education Boards, Ministry of Education, Council of Scientific and Industrial Research, National Buildings Organisation, Indian Standards Institution and independent scientists.

- 2. The Panel examined the detailed proceeding for allotment of funds and procurement of equipment in secondary schools and has observed that the present procedure is quite unsatisfactory and results in various malpractices besides hampering class work considerably. The Panel has recommended a definite schedule so that the financial sanctions are issued to schools at least 6 months in advance of the start of the new academic session.
- 3. While adequate attention is being given to the teaching of science at all levels in the country, it is essential that the secondary schools should be properly equipped. The Panel has, therefore, drawn standard lists of equipment for science laboratories of secondary schools and suggested suitable grants for the purpose. These lists should serve as useful guides to the State Governments as also to the middle and high schools throughout the country.

- 4. The Panel is of the view that the manufacturers of scientific instruments in the country have adequate capacity for manufacturing most of the items of scientific apparatus for schools but they are reluctant to take up any large scale programme since, according to the prevailing system of lowest tenders, the manufacturers of quanty products cannot compete with unscrupulous suppliers who would not hesitate to supply sub-standard products. To remedy this, the Panel has suggested that purchase standards should be framed and rate contracts fixed on quality basis. The Panel has also suggested that the State Governments should estimate requirements of scientific equipment on a five-year basis and the Planning Commission may then take up the question of increased production with the manufacturers.
- 5. You will be glad to know that the recommendations of the Panel have the concurrence of the Ministry of Education, who were represented on the Panel.
- 6. I may be permitted to take this opportunity to convey my personal gratitude for the keen interest that the Members of the Planning Commission, Shri Tarlok Singh, Prof. V. K. R V. Rao and Prof. M. S. Thacker have taken in the study at various stages. Prof. Thacker was originally responsible for setting up this Panel. I may also be permitted to put here the deep appreciation of the work of Shri Jagdish Singh, Member-Secretary of the Panel and his devoted workers but for whose initiative, resourcefulness and hard work this Report would not have been possible.

With my best personal regards,

Yours sincerely.

K. N. MATHUR.

Shri Gulzarilal Nanda, Chairman, Committee on Plan Projects, Planning Commission, New Delhi.

CONTENTS

Report:										PAGE
I. Introduction .										r
II. The Financial Proc	educe									8
III. Science Apparatus	s and ot	her E	quip 1	ıeat						15
IV. Planning of Labor	atories			•						19
V. Other Recommends	ations	•	•		٠			•	_	24
VI. Summary of Reco	ommen	dation	В.	•		-	•	•	-	26
Appendices:										
I. Procedure for Recu II. Procedure for fina	-			_	_				tes	32
apparatus in sch	ools		-	٠.	•		•	-	**	37
III. List of Science E	quipme	ent and	l App	aratu	for l	ligh S	choo!	ls:—		
(A) Physics] .							-			42
(B) Chemistry	•				•			_	-	47
(C) Biology .					•	-	-		-	60
IV. List of Science Ed	auiome	at for a	a Mic	idle S	choo!	Labo	rator	٧		57
V. Items of apparat								•	in Hi	
Schools .	•	• •	•	•	•	•		•	-	63
VI. Tools and Impler	nents re	quire	i for	Work-	-shop	s attac	hed to	o:—		
(A) High Schools								_	_	68
(B) Teacher Train	ing [ns	titutio:	as	•					-	67
Plates:										
I & Designs for Lab		_		chool	s .	•	•	•	-	
III Design for a Lab	oratory	Table		_	_			_	_	