

DEVELOPMENT & IMPLEMENTATION OF  
THE SECONDARY SCHOOL  
CURRICULUM IN MANIPUR

MANIPUR

N.I.E.P.A. DOC. CEN.



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OF  
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I INTRODUCTION

Education being a concurrent subject in India, the State Government cannot do everything with regard to it. Under 10+2+3 pattern of education, the Central Government has formulated aims of education at the primary, secondary and tertiary levels and has named areas of studies along with their broad objectives for the primary and secondary stages. The State Governments are left with the work of implementation. Still the State Governments are given free hand to modify the Central policies to suit the local conditions.

On its part, the Govt. of Manipur empowers the Board of Secondary Education, Manipur to develop curricula for secondary stage ( classes IX & X ) and higher secondary stage ( classes XI & XII ). The BSEM furnished all the secondary schools of the State with the syllabi of different areas of studies alongwith the instructional objectives ( framed by the NCERT, Delhi ) for classes IX & X for their comments for modification. A three-day discussion by groups of teachers from colleges, schools and J.A.U. Centre, Imphal on the syllabi and objectives alongwith the comments received from the schools modified the syllabi and objectives.

WORK SCHEDULE

Most of the states have already implemented the 10+2 pattern of education. The Central Government is pressing the States which have not yet implemented it to go fast. The BSEM had a mind to implement the new pattern in 1981. But under the circumstances when its man who is in charge of curriculum development is in England ( January - May, 1979 ), it may not now be possible to attain the target. The table on the next page gives schedule of work to be followed for early implementation of the new pattern.

WRITING OF INSTRUCTIONAL MATERIALS

Text-books for students and teacher guide books will be written by teams of writers. The writers will be teachers ( schools, colleges, J.A.U. Centre, Imphal ), preferably those who participated in finalising the syllabi and instructional objectives and workshops organised under the / in examination reform programme. They should have clear ideas of the following :

- (i) general aims of secondary education,
- (ii) instructional objectives of the subjects,
- (iii) up-to-dateness of the subject,
- (iv) the child psychology,
- (v) the environment,
- (vi) the relevance of his work with others of his team and other teams.

It may not be very difficult to find out teachers in regard to (iii). But something should be said about (iv).

The writer selected will be given a copy of the " Grouping of Students and Methods of Teaching " together with the following :



" There are no grounds for the assumption that all knowledge is organised hierarchically, that children must be taken through it step by step or, to change the metaphor, that they must build their knowledge brick by brick. This is another example of that folklore that has for too long hindered the establishment of a serious theoretical basis for the practice of education. Too readily it has been assumed that children cannot learn ' y ' until they have learnt ' x ', or that certain ' subjects ' can not be broached before certain others have been begun or that certain kinds of topic cannot be tackled before a certain age has been reached.

To some extent the work of psychologists such as Piaget on the development of children's thinking has reinforced this kind of view, but perhaps their findings have been interpreted with too little sophistication".

" Their work would certainly seem to suggest that there is a definite sequence to the acquisition by children of certain kinds of concept, and therefore that there are certain psychological considerations to be taken into account into curriculum planning. It does not follow that there exist psychological factors which rigidly control the sequence in which we must present pupils with the content of their education. A great deal more work

needs to be done in this area, but in the meantime it would seem safer to assume with Jerome Bruner (1962), that ' any subject can be taught to anybody at any age in some form that is honest and interesting' ( 1962, P.124); that it is possible to devise versions of any subject that will make it suitable for presentation to pupils at any stage of development, if for other reasons it seems warranted. The same material can and should be presented again later in a different way so that gradually the conceptual progress we are after can be attended to and our educational goals achieved. This process of covering the same ground again and again at different levels of complexity Bruner calls the ' Spiral curriculum ' ( 1960, 1966) ".

In the same line, we can continue -

" The sequence in the books must allow theory to follow from practice. Some people may argue : How can you teach logarithms without doing indices ? But this is not an example we follow in our own lives. How many of us take a course in telecommunication before learning how to use a telephone ? Should a student be denied a driving licence because he could not follow the theory of the internal combustion engine ? Logarithms are an aid which open doors to mathematics hitherto unattainable, as the desk calculator. This is not to deny that there is some intrinsic value in studying the theory of logarithms. But this will not be appreciated by the majority of pupils at the time when their use is taught. Motivation to learn more about a theoretical basis may come later". " Motivation for practical experience will come first".

" If history in schools is to have any meaning to our pupils now and later it must involve them activity; it should not simply require them to receive information and ideas exclusively from so-called authoritative sources like teachers and text books, but encourage them to participate in decisions about what they study and how they do it, in searching for evidence and in asking questions of it, in reconstructing ( imaginatively )\* past events, incidents, developments and lives; in puzzling out problems; and in putting their own findings and views in various ways ".

Appendix I shows workcards on History.

\* within bracket is mine.

Contd. /- 4.

(A) Text Books

Some text books - such as School Mathematics Project books ( special curriculum ) - will be made available to the writers so that they can understand the new techniques of writing text books. Our text books shall be written unitwise, so that a unit may be covered in a period of 40 minutes. Every unit will contain exercises for students. Classes IX and X shall have separate books. The sequence of units has been put in the syllabus. However, the writers can change it.

(B) Teacher Guide Books

They will be written in such a manner that teachers may find them very interesting and helpful. Arrangement will be like this : teachers' activities-page will face the corresponding page of the student text such as in the case of SF teacher guide books. This arrangement may inhibit teachers from scrapping the type of teacher guide books produced by the NCERT, Delhi.

The guide books will suggest objectives the teacher should keep in mind while in the class. They will also provide suitable background information which the teacher himself may lack and not be able to find easily in a suitable form.

(C) Equipments necessary for writing instructional materials

Esides the typewriters and duplicators, a <sup>/ stencil</sup> scanner is necessary for writing the instructional materials. This machine can reproduce photographs, diagrams, prints, etc. very easily and economically in a short time. This is very essential, for

- the books are to be written in Manipuri medium
- the books will be modified at least twice at the evaluation stage, beside modifications at the writing stage for the approval of the team
- the books will contain many photographs, charts, diagrams etc., ( a block costs more than Rs. 30/-, and think of time too ).

So the Board should purchase a scanner immediately and this <sup>/ stencil</sup> should be ready for work by the last part of July, 1979.

The writers will be selected in the following manner from schools and colleges.

Subject	School teacher	College/JNU teacher
English	2	4
Manipuri (I)	2	4
Manipuri (II)	1	2
<b>Social Studies</b>		
I. History	1	2
II. Geography	1	2
III. Civics	1	1
<b>Science</b>		
I. Physics	1	2
II. Chemistry	1	2
III. Life Sciences	2	2
Mathematics	2	4
Health and Physical Education	6*	
Socially Useful Productive Works	6*	
Economics	1	2
Home Science	1	2

\* Writers for Health and Physical Education will be from Physical Education Department and Medical Department. And for SUPW, from Industries and Agriculture Departments.

Text books of other subjects will be adopted from other Boards as follows :

- |       |                          |   |                               |            |
|-------|--------------------------|---|-------------------------------|------------|
| (i)   | Assamese, Hindi, Bengali | - | Board of Secondary Education, | Assam      |
| (ii)  | As, Angami               | - | " " School                    | " Nagaland |
| (iii) | Punjabi                  | - | " " "                         | " Punjab   |
| (iv)  | Nepali, Urdu, Sanskrit   | - | " " Secondary                 | " W.B.     |
| (v)   | Lushai                   | - | " " School                    | " Mizoram. |

The 47 writers should be paid @ Rs. 1000/- per head. Their work extends upto the end of final moderation of the books ( for both classes IX & X ).

This comes to Rs. ( 1000x47 ) = Rs. 47,000/-.

## GROUPING OF STUDENTS AND METHOD OF TEACHING

Most of the schools in Manipal do not stream or set students. Setting is a new term and streaming ( section in our vocabulary ) is practised in a few schools. Schools having streams or otherwise seem to teach classes as units " aiming at the middle ". But "top" and " bottom" will be too apart. It will be necessary for the teacher to view his class as a collection of individuals and to recognise individual differences. Workcards, teamteaching, etc. have been suggested for teaching mixed ability groupings. But it will be a long way for us to go. In the present situation, the best strategy will be " aiming at the middle " in the normal classes and covering the " bottom " and " top " in a tutorial class every week. A class should not contain more than 35 students and the pace should be according to the text books which were written in the form of units to be covered in periods of 40 minutes.

Till now we are very much concerned with curriculum content and we see the curriculum in terms of its contents only. This concern with content blinds us to questions concerning goals of education upon which particular decisions should be based. We should know that -

" What is important is not that we should strive to ensure that all children assimilate a certain body of knowledge, but that we should be endeavouring to the same educational goals; and there may be as many roads to these goals as there are individual children. What matters is not that all children should have a knowledge of the main events of the French Revolution but that they should all be able to think historically and have a developing understanding of the problems that beset man's attempts to learn to live with his fellows; not that they should all " know " Boyle's law, but that they should all be able to think scientifically and understand how man's knowledge of his physical environment has been and is being developed; not that they should all have learnt Hamlet's soliloquy, but that they should have been introduced to value literature which is capable of interpreting and enriching human life. As Jerome Bruner has said, ' We teach a subject not to produce little living libraries on that subject, but rather to get a student think mathematically for himself, to consider matters as an historian does, to take part in the process of knowledge - getting. Knowing is a process, not a product ".

But we stress very much to produce " little living libraries ".

" The education of a person is neither an imposition on him from without nor a natural development from within; it is a combination of the two as the growing, developing individual reacts to his environment. As teachers, therefore, we ought not to be torn asunder by asking ourselves whether we should ' teach ' our pupils or let them ' find out ' things for themselves. We ought to be experimenting with both approaches, remembering that the most effective combination for each pupil will depend on his own style of learning ".

we are concerned to educate pupils. To be educated means to be autonomous and self-propelling.

" If our pupils learn everything under duress and compulsion, they may in the end be very knowledgeable but they will never be educated ".



We must try to create situations

" in which our pupil's learning is increasingly self-directed and self-propelled, until eventually that education can go without us; we become superfluous. It is the educator's job to render his own services unnecessary ".

What is needed now is not people who can store knowledge, but

" people who can use it intelligently and contribute to its continued expansion. In all of these spheres it is clear that the teacher can no longer be merely a conservative agent for the transmission of traditional skills, values and knowledge; he must set about providing children with the abilities that will ensure continued development on all of these fronts. He must look to the future rather than to the past ".

" There is a shift - from a pedagogy which, for the majority of secondary pupils, was concerned with the learning of standard operations tied to specific contexts - to a pedagogy which emphasises the exploration of principles. From schools which emphasise the teacher as a solution-giver to schools which emphasise the teacher as a problem poser or creator ".

#### SCHOOL TIME - TABLE

Time-tabling will not be an easy task in view of the introduction of new areas such as Physical and Health Education and Socially Useful Productive Work. A model time-table, to be prepared by experienced headmasters will be made available to schools. Appendix IV shows the time-table of Fairlop Secondary Girls' School, England.

#### EXAMINATION

The Board has taken up examination reform programme with the help of the NCERT, Delhi. In the first phase, key persons and the teachers have been given training in the techniques of setting improved type of question papers. And the Board has already introduced the new form of question papers in its High School Leaving Certificate Examination. The new type of question papers consisting of two sections of different durations, one section consisting of objective and very short answer type questions only and the other section short answer and a limited number of essay type questions attempt to assess students not only knowledge and understanding but also application and skill aspects. So far we have been concerned with assessing cognitive aspects only. The next phase of the programme will attempt to measure the affective domain and psychomotor aspects.

Examination will not be a one shot affair. Students will be examined every chapter during the normal class period. The marks of these class assessments should count for 50% of the final examination at the end of class IX. 50% of the test examination ( in class X ) should also go to the class assessments administered during the courses of class X.

### ORGANIZATION OF WRITING OF THE BOOKS

A meeting of all the teams of writers will be held and in this meeting the members will be let known their schedule of work. All the related papers will be given to them - Time-table for Developing and Implementing Secondary Curriculum in Manipur, Grouping of students and Methods of Teaching and extracts of the Writing of Instructional Materials. The meeting will chalk-out a general programme of working for writing the books. The programme will be essentially as follows :-

- (A) - A member of the team is assigned the task of writing an outline of a chapter/unit. A number of units makes a chapter. The number of units will be determined by the number of periods ( of 40 minutes duration ) allotted to the chapter, as in the syllabus.
- (B) - The outline is discussed by the team and scrutinized for moderation.
- (C) - Then, the author develops the chapter which includes exercises at the end of each unit, teacher guides, and a post-test.
- (D) - When completed, the chapter is again discussed and moderated by the team.

### MODERATION BEFORE TRIAL

Thirty teachers ( Mostly Headmasters ) from Schools and Colleges/ University will be invited to discuss and moderate the books in a workshop ( for each book ) held for ten days. The team members will also participate. These workshops will examine

- content's validity and reliability
- logical organisation
- psychologically relevant
- accuracy and suitability of language
- sequence
- Understanding and Critical thinking.

Moderation Before Trial should be organised in gala manner. Education Minister may be requested to inaugurate the two-week Workshop, which will be attended by Headmasters. The inaugural function will be attended by high-ups in the field of education. The closing function may be as well organised in festival style. The Education Secretary may be invited to close the workshop. Radios and other media should be used to disseminate the ideas in the new curriculum.

TRILL

Having completed moderation of text books of the students and teacher's guide-books, the books need to be tried out at representative groups of schools to gather evidences that would identify the instructional materials as "good" or "bad", "effective" or "ineffective". The instructional materials for class IX will be tried out in 24 schools in the manner indicated in the following table in Feb, 1980 - Dec, 1980 and those for class X in those 24 schools in the same manner in Feb, 1981 - Dec, 1981.

Type of the school	Urban	Rural	Hill
1. English	S <sub>1</sub>	S <sub>2</sub>	S <sub>3</sub>
2. Manipuri (I)	S <sub>4</sub>	S <sub>5</sub>	S <sub>6</sub>
3. Manipuri (II)	S <sub>7</sub>	S <sub>8</sub>	S <sub>9</sub>
4. Mathematics	S <sub>10</sub>	S <sub>11</sub>	S <sub>12</sub>
5. Science	S <sub>13</sub>	S <sub>14</sub>	S <sub>15</sub>
6. Social Sciences	S <sub>16</sub>	S <sub>17</sub>	S <sub>18</sub>
7. Health & Physical Education	S <sub>19</sub>	S <sub>20</sub>	S <sub>21</sub>
8. SIPW	S <sub>22</sub>	S <sub>23</sub>	S <sub>24</sub>

This arrangement requires special examination ( school Final ) in 1981-82 in the subjects ( new syllabi ) for the schools where the new instructional materials had been tried out. For instance, students of schools S<sub>10</sub>, S<sub>11</sub>, S<sub>12</sub> will have the school final examination, 1981-82, in the new syllabus of mathematics, while having the old syllabi for the rest of the subjects.

While trying out the instructional materials, three types of evidences will be collected : judgemental evidence, observational evidence and student learning evidence. Who will respond what kind of evidences is illustrated by the following table. The relevant instruments for gathering the evidences - Form P, Form Q's and Form R are at pages.11-14. The forms for each unit/chapter will be completed by the concerns and sent to the curriculum centre just after completing the unit/chapter.

**CURRICIUM CRITERIA & TYPE OF EVIDENCES NEEDED AT TRIAL STAGE**

Issues being considered	Judgmental Evidence		Observational Evidence		Student Learning Evidence
	Teacher	Student	Team members/Inspectors/Headmasters/S.I.E. Training College teachers	Student	Student
	Form P	Form Q <sub>1</sub>	Form R	Form Q <sub>2</sub>	Form Q <sub>3</sub>
1. Accuracy & soundness of materials	x				To discover whether teachers are employing methods appropriate to the new approach to teaching  What has been learned well?  Overall effectiveness.  What needs to be revised?
2. Internal structure & sequence	x				
3. Clarity & meaningfulness	x	x	x		
4. Level of difficulty	x	x	x		
5. Interest value for students	x	x	x		
6. Special teaching problems	x	x	x		
7. Relevance to students' needs & aspirations	x	x	x		
8. Overall reaction	x	x	x		
9. Unintended learning & effects	x	x	x		

Form P : Teacher's Report

Name . . . . .

School . . . . .

Subject . . . . .

Unit/Chapter . . . . .

Number of students using the chapter . . . . .

Date . . . . .

Time taken to teach the units/chapter

UNIT	1	2	3			Total
MINUTE						

Please make immediate notes. If the space provided for suggestion is not sufficient, there is space at the end of this booklet.

A. Are there any errors in this chapter ? Yes/No

Suggestions for correcting these errors or inadequacies . . . . .  
. . . . .  
. . . . .

B. Do the sequence of the chapter appear to be appropriate from the viewpoint of the student ? Yes/No

Proposals for improving the internal relations among the parts of the chapter . . . . .  
. . . . .

C. 1. Are the explanations & illustrations clear ? Yes/No

2. What detailed parts are in need of improvement ?

. . . . .  
. . . . .

Suggestions . . . . .  
. . . . .

D. 1. Is the chapter at about the right level of difficulty for the students ? Yes/No

2. What detailed parts are too difficult ?

. . . . .

3. What detailed parts are too easy ?

. . . . .

Suggestions for modifications . . . . .

. . . . .

- E. 1. Do the students find this chapter interesting? Yes/No
- 2. Which detailed parts do the students find most interesting?  
.....
- 3. Which detailed parts do the students find least interesting?  
.....
- F. 1. What special teaching problems do you have with this chapter?  
.....
- 2. What special features of the chapter account for these teaching problems?  
.....
- 3. Do you need special retraining to teach this chapter? Yes/No  
Suggestions for teacher training .....  
Suggestions for changes in the chapter .....
- G. How relevant is this chapter to the student's interests, needs, and aspirations?  
.....  
Suggestions for any changes .....
- H. What is your overall judgment and views about this chapter?  
.....  
Suggestions for any changes .....
- I. 1. Does the chapter and the ways in which it is taught change the role of students and teachers?  
.....
- 2. Are the changes likely to make new problems that were not originally foreseen?  
.....

To what extent do the materials and the suggestions in the teacher's guide encourage development of the following cognitive processes :

- (a) Observing or perceiving : .....
- (b) Listening : .....
- (c) Discussing: .....
- (d) Defining and expanding key terms and concepts : .....
- (e) Contrasting and comparing : .....
- (f) Recognising a problem for further inquiry : .....

To what extent do the materials or suggestions in the teacher's guide encourage students to explore, clarify, and act :

- (a) on their own values : .....
- (b) on values held by others : .....
- (c) on the presentation of alternative and conflicting points of view : .....

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Appendix II is an example to elicit reactions from teachers concerning their use of a new programme.

For Q<sub>1</sub>: Student's report

Name . . . . .

School . . . . .

Subject . . . . .

Unit/chapter

Date . . . . .

C. 1. Are the explanations & illustrations clear you ? Yes/No

2. Where are they most clear ?

. . . . .

3. Where are they least clear ?

. . . . .

D. 1. Do you find the chapter too easy ? Yes/No

2. Do you find the chapter too difficult ? Yes/No

Which parts of the chapter are too easy ?

. . . . .

Which parts of the chapter are too difficult ?

. . . . .

E. 1. Do you find the chapter interesting ? Yes/No

2. Which parts of the chapter are most interesting ?

. . . . .

3. Which parts of the chapter are least interesting ?

. . . . .

4. How does this chapter relate to the kinds of things you would like to learn ?

. . . . .

Form Q<sub>2</sub> : Student's report

Check the appropriate box.

1. My teacher asks question that cause us think about things that we have learned in other chapters.

True

False

2. If I don't agree with what my teacher says, he wants me to say so.

3. My job is to copy down and memorise what the teacher tells.

4. Much of our class time is spent in listening to our teacher tell us about the chapter.

5. Most of the questions that we ask in class are to clear up what the teacher or text has told us.

6. Our tests often ask us to write out definitions of terms.

Form Q<sub>3</sub> : Post test

This will be of thirty minutes duration and to be administered at the end of every chapter. Instructional material writers will prepare this test.

A model of student's report is given at appendix III

Form R : Team member/Inspector/Headmaster/S.I.E./Training College Teacher's report.

Name . . . . .

Designation . . . . .

Subject . . . . .

Unit/chapter . . . . .

School visited . . . . .

Date . . . . .

D. 1. Is the chapter at about the right level of difficulty for the students ? Yes/No

2. What detailed parts are too difficult ?  
. . . . .

3. What detailed parts are too easy ?  
. . . . .

Suggestions for modifications . . . . .

E. 1. Do the students find the chapter/unit interesting ? Yes/No

2. Which detailed parts do they find most interesting ?  
. . . . .

3. Which detailed parts do they find least interesting ?  
. . . . .

F. 1. What special teaching problems are teachers likely to have with this chapter ?

2. What special features of the chapter account for these teaching problems ?  
. . . . .

Suggestions for teacher training . . . . .

. . . . .

Suggestions for changes in the chapter . . . . .

. . . . .

G. How relevant is this chapter to the students' interests, needs, and aspirations ? . . . . .

Suggestions for changes that would make it more relevant . . . . .

. . . . .



- H. 1. Do the chapter and the ways in which it is taught change the role of students & teachers ?  
.....
2. Are the changes likely to make new problems that were not originally foreseen ?  
.....

#### MODERATION AFTER TRIAL

It is important that the curriculum team attempts to relate the formative test (post test of the students) results to the judgements of the teachers and students as well as to the classroom observational records.

If the tryout group of students gets at least 70% correct on each chapter in the post tests, that chapter is satisfactory and needs no modification. If much less is found, then the chapter should be revised where the results indicate this is necessary. If 60% of the tryout students find the chapter interesting, this is satisfactory. Here again changes shall be made if the student results are below this level.

#### TRANSLATION

Translation of books from Manipuri to English will be done by four persons each book. Two will be teachers of English Language (their mother tongue is Manipuri) and the other two will be subject teachers. They will work in the following manner :

- One unit translated by a subject teacher is checked by a language teacher.
- One unit translated by a language teacher is checked by a subject teacher.

Translators should be given at the rate of Rs. 250 per head. His work will be translating a book. (for both classes IX & X).  
The cost of translation of a book = Rs. (250x4)  
= Rs. 1000

∴ cost of translation of 10 books = Rs. 10'000.

#### PRINTING

The books moderated finally after the trial stage will be given to the printing/publishing firms for printing and producing the books. Classes IX & X will have separate books. / and X

#### DISTRIBUTION

The books for class IX should be published so that they will be available at the shops in July, 1981 for introduction in 1982.

Contd ..../- 16

#### NUMBER OF TEACHERS

The numbers of teachers required under the new curriculum is as follows :

Subject	No. of teachers
Science	3
Mathematics	2
Health and Physical Education	1
Socially Useful Productive Work	1

For other subjects, the existing number of staff will be sufficient. This arrangement is for one-section-school. There are schools which have surplus teachers in Science and Mathematics. They should be properly deployed.

#### EQUIPMENTS

There are schools which have enough facilities for science practices. But many of the schools in Manipur have no such facilities. Schools should be properly equipped well in advance before introduction of the curriculum in 1982. This should be done in July, 1981. Equipments for SUPW are also to be supplied by the Government in July, 1981.

#### TEACHER EDUCATION

The observer's judgements and inferences obtained from observation of teachers and students using the instructional materials in the classes and the teachers' reports on using the new materials will give valuable leads in determining what kind of in-service or pre-service training teachers need.

##### (a) Training College

The only training college of secondary school teachers in Manipur which is affiliated to the Gauhati University, Assam should be brought into direct involvement with the curriculum prevalent in the State. This becomes more necessary specially when areas like Physical and Health Education and Socially Useful Productive Work are introduced in the curriculum and when syllabi of the traditional subjects have been greatly enriched. The college, which is not still having its science department, must open all the facilities for giving training teachers to teach effectively all the school subjects.

To involve the college in the Manipur situation, ways must be sought to bring it under the J.N.U. Centre, Imphal. The one-year F.T. course must give more weightage to the professional training. The Principal of the college must be asked to orient the course so that the products of the college can utilise to the maximum the training when they go back to their classes.

A Teachers Training Committee may be formed consisting of the following members.

- |                                       |              |
|---------------------------------------|--------------|
| 1. Secretary of Education             | - Chairman.  |
| 2. Director of Education (Secondary ) | - Member.    |
| 3. Chairman, E.S.E.M.                 | - Member.    |
| 4. Deputy Director of Education (S)   | - Member.    |
| 5. S.R.C., SIE                        | - Member.    |
| 6. Inspectors of Schools              | - Member.    |
| 7. 6 Headmasters                      | - Member.    |
| 8. Principal, P.G.T.                  | - Secretary. |
| 9. Academic Officer, BSEM             | - Member.    |
| 10. Principal, E.T.C.                 | - Member.    |

#### Functions

- Review of the programmes undertaken by the P.G.T.
- See ways & means of developing programmes for P.G.T. for producing effective teaching.

#### (b) Teacher Centre

A teacher centre should be opened with the Board of Secondary Education. The centre will provide opportunities for secondary school teachers to exchange ideas, acquire new skills and further their own development.

Functions of the centre will be -

- (i) Access to new materials and curricula : The centre will serve as a library.
- (ii) Skill Learning : Teachers can develop skills involved in the use of new materials.
- (iii) Renewal, rejuvenation : Centre may serve the function of generating a new start, a reconception of one's role as a teacher.
- (iv) Materials Development : Teachers may use the centre to develop apparatus or specific materials which they can take back to their own classes.
- (v) In-service education : Workshops, seminars, short courses, etc. The first four functions will give clues to what kind of inservice training will have to be organised.

There shall not be heavy financial burden to open the Teacher Centre. The existing staff of the Board can manage. Only an office assistant will help the Academic Officer in running the Centre. A big room only has to be provided for this Centre.

Not only the Centre will help the teachers in their personal and professional development but also it will help greatly the Board in taking up educational programmes. If the Centre works successfully, similar Centres at Districts should be opened.

## ORIENTATION OF TEACHERS

Teachers of all secondary schools of Manipur will be given orientation for two weeks under the new curriculum. The instructors will be the textbook authors. This kind of programme should be continued until all teachers ( Secondary ) are covered.

## IMPLEMENTATION

The new curriculum for class IX will be implemented in 1982 and for class X in 1983 in all secondary schools of Manipur. But the schools which tried out the new text books for class IX in 1980 and for class X in 1981 will have separate examination ( High School Leaving Certificate Examination ) in 1982 for the trial subjects. For example, Schools S<sub>10</sub>, S<sub>11</sub>, S<sub>12</sub> will have new syllabus for Mathematics in the HSLC examination 1982, while having the old syllabi for the rest of subjects. This arrangement will have to continue till 1983.

An Implementation Committee for Secondary Curriculum should be formed with Secretary of Education, Manipur as its Chairman.

The Committee will consist of the following members :

- |   |            |
|---|------------|
| 1. Secretary of Education, Govt. of Manipur   | - Chairman |
| 2. Chairman, BSEM                             | - Member.  |
| 3. Director of Education ( Secondary )        | - Member.  |
| 4. Deputy Director of Education ( Secondary ) | - Member.  |
| 5. Deputy Director of Education ( Planning )  | - Member.  |
| 6. Principal, P.G.T. College                  | - Member.  |
| 7. Senior Research Officer, S.I.E.            | - Member.  |
| 8. Academic Officer                           | - Member.  |

### Functions of the Committee

- to suggest ways and means for successful implementation of the curriculum
- to review periodically the progress of implementation.

### APPROXIMATE COST FOR DEVELOPING THE NEW CURRICULUM

( TO BE BORN BY THE BOARD OF SECONDARY EDUCATION, MANIPUR )

- |  |              |
|--|--------------|
| 1. Remuneration to instructional material writers                                  | = Rs. 47,000 |
| 2. Remuneration to translators   | = Rs. 10,000 |
| 3. Moderation before trial   | = Rs. 3,000  |
| 4. Equipments & materials required for the work of development ( stencil scanner ) | = Rs. 25,000 |

ELEMENTS OF EXPENDITURE TO BE TAKEN INTO ACCOUNT WHILE  
IMPLEMENTING THE NEW CURRICULUM ( TO BE BORN BY THE  
GOVERNMENT OF MANIPUR )

1. Additional teachers ( each school )
  - (i) Science - 2
  - (ii) Socially Useful Productive Work - 1
  - (iii) Physical & Health Education- 1
2. Equipments for science and SUPW
3. Orientation of teachers to the new curriculum.

REFERENCES

1. Lowy, Arian : Handbook of Curriculum Evaluation - UNESCO
2. Kelly, .V. : Mixed-Ability Grouping - Harper & Row Publishers, London Theory & Practice.
3. Wragg, E.C. : Teaching Mixed-Ability Groups - David & Charles ( Holdings ) Ltd. London.
4. Evaluation in Curriculum Development : Twelve case Studies - School Council, England.
5. Curriculum Evaluation To-Day : Trends & Implications - School Council
6. Elizabeth Adams : 'In-service Education & Teachers' Centre - Pergamon Press, London.

By -

S. Nabachandra Singh,  
Academic Officer,  
Board of Secondary Education,  
Manipur, Imphal.

APPENDIX I

Roman Britain

Workcard 5

HADRIAN'S WALL

(Picture)

This is a picture of a part of Hadrian's Wall as it is now. You can also see the ruins of the Roman fort at Housesteads.

Have a copy of A Soldier on Hadrian's Wall by D. Taylor on your table.

Things to do

- 1 Write down these sentences and fill in the missing words. Pages 14 and 16 of A Soldier on Hadrian's Wall will help you.
  - (a) Hadrian's Wall was built from ..... in the east to ..... in the west. It is ..... miles long.
  - (b) It was made of .....
  - (c) It measures ..... feet high and ..... feet thick.
  - (d) In front of the wall was a ..... and behind it was a .....
- 2 Imagine that you are the Roman officer in charge of building the wall. Write a letter to a friend in Rome telling him what the various buildings are on the wall and what they are used for. You can find out about these buildings in your book, pp 16-20.
- 3 Draw a diagram of one of the buildings in your letter. Label all the parts and sizes of it. If you prefer, make a model of it to scale.
- 4 Draw and colour a picture showing a scene from Hadrian's Wall, perhaps an enemy attack or soldiers marching along it. From the picture on this card imagine what it must have been like on the wall.

A middle-level card should also be attractive, with a combination of illustration and text, but need not be so specific or detailed in its guidance. Information-searching questions can be framed so as to encourage detailed investigation, and a greater range of books for consultation should be recommended (for which references need not be so frequent). Guidance towards relevant sections or chapters, or preferably encouragement to use the index is more appropriate. Questions demanding deduction and judgement should be increased, and the use of documentary evidence is of central importance. Most pupils in a mixed-ability group will work at this level, or can be encouraged to reach it, and it is a crucial stage in the development of historical inquiry. A variety of tasks is needed, and suggestions should be made about imaginative work, written or pictorial, giving less guidance than the first level card on what to include and leaving choice of format - eg newspaper report, diary, eyewitness account - more open.

Contd ..../-

### HADRIAN'S WALL

(Picture)

This is a picture of part of Hadrian's Wall today.

#### Read

A Soldier on Hadrian's Wall by D. Taylor

Roman Britain by R. Mitchell

Roman Britain by J. Livesidge, pp-33

The Romans in Scotland by O. Thomson, Chapter 3

#### Things to do

- 1 Answer these questions as fully as you can :
  - (a) Why did Hadrian build a wall across Britain ?
  - (b) If you were an enemy of the Romans trying to break through the wall from the north, where do you think its weakest points would be? You will need to find information about the various forts and defences along the wall.
  - (c) Another wall was built twenty years later by the Romans in Scotland. Which Emperor built it ? Why was it built? How different was it from Hadrian's Wall?
- 2 Imagine that you are the Roman officer in charge of building Hadrian's Wall. Write a report to the Emperor telling him why you have decided to change the wall from turf to stone and to alter the sizes.
- 3 Draw a diagram of a cross-section of the wall, or of a fort, and label it carefully. If you prefer, make a scale model of it.
- 4 Either, as the Roman officer, write an entry for your diary describing an incident on the wall.  
Or, draw and colour a picture of the incident.  
Do both of these if you wish.

Finally, for those pupils who quickly, need less direction but considerable stimulus in discussion, a workcard should leave much to the individual initiative and predilection. A wide range of books and other sources should be recommended, with page and chapter references only where indexes are poor or unavailable. More detailed and sophisticated written work is to be encouraged, with questions requiring a problem-solving or divergent thinking approach. Here the aim is to develop historical skills and research techniques, such as the questioning of evidence and the handling of conflicting accounts, and interpretation and judgement. Pupils should be urged to plan the detail of their own work, and the ways in which they might express their findings and ideas. They should be encouraged to see that in their work non-written activities are also valid. If their training has been sound they will spot the possibilities for reconstructing historical events, changes and personalities imaginatively, and the teacher can emphasise the importance of finer points of historical inquiry in discussion with individuals or small groups, rather than spelling this out on the card.

The teacher must be sensitive to the developing requirements of pupils working at this level in particular, and here the use of optional cards is a means of providing for the very rapid worker. But investigation in depth is to be urged for each chosen topic of study, in order to exhaust the range of possibilities involved rather than to rush too hastily to another topic.

Roman Britain

Workcard 5

### HADRIAN'S WALL

(Picture)

Consult the books in the class history library on Roman Britain, in particular *The Roman Frontiers of Britain* by D.R. Wilson; *The Roman Imperial Army of the First and Second Centuries* by G. Webster; *The Romans in Scotland* by O. Thomson; *Handbook to the Roman Wall* by I.A. Richmond

- 1 Why did Hadrian build a wall across Britain between the Solway and the Tyne? Why were no other routes suitable?
- 2 Find a picture of a British hill-fort (eg Maiden Castle or Hod Hill) and compare it with Houssteads as a fortification. Illustrate your answer.
- 3 If you were an enemy of the Romans trying to break through the wall from the north, where do you think its weakest points would be? Why?
- 4 The Emperor Antoninus Pius decided to build a wall in Scotland in about AD 142. Imagine and write a conversation between Antoninus and his senior advisor about building the wall in Scotland in which they discuss why Hadrian's Wall is no longer suitable, and in what ways the new wall should be different.
- 5 Either, make a scale model or draw a picture of part of Hadrian's Wall. Do both if you wish.

----



APPENDIX II

Table 8.6 Geography Program Monitoring Form

Please tick the most appropriate response to each question

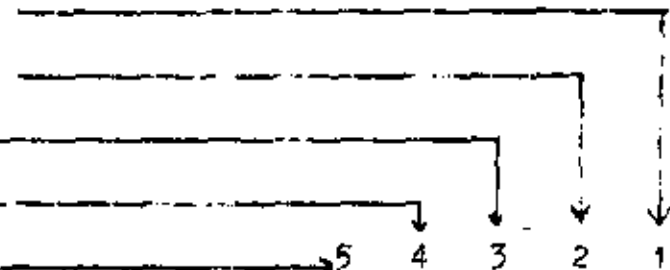
Tick box 1 for Definitely Yes

Tick box 2 for Probably Yes

Tick box 3 for Don't know

Tick box 4 for Probably No

Tick box 5 for Definitely No



	5	4	3	2	1
1. In general did you find teaching the unit(s) interesting?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Was there enough guidance on the unit(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Did you find the layout of the unit(s) satisfactory?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Would you prefer to have the objective more precisely stated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Did you find basic resources (including books) easy to find?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Would you like more ancillary materials given to you?(If so, specify at end of questionnaire)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Did you think the unit too difficult for your pupils?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Was there an interest in the unit throughout?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Did you think the units in the course restricted your teaching style?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Did the units in this course encourage you to alter your S1/2 syllabus at all?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Do you think meeting with other teachers attempting these units would help you in your teaching of it?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Do you think the course of units is generally too long?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Source : B.J.McGetterick, "Geography Programme Monitoring Form" (Scottish Centre for Social Subjects, Jordanhill College, Glasgow, 1975). Mimeographed.



APPENDIX III

Fig. 6 Sixth Form Mathematics: form D

---

Package ..... Trial no. ...

Name .....

This is not a test and there are no 'right' or 'wrong' answers. Would you indicate the degree to which you agree or disagree with the statements in quotation marks on the scale explained on this sheet. (This is included below.)

1 'The questions were quite interesting' Agree      disagree

2 'The questions were difficult to understand' Agree      disagree

3 'I would have preferred straight exercises without the problems' Agree      disagree

4 'I would like to try a package on another topic' Agree      disagree

5 'Looking at mathematics in this way one can really see what it is getting at' Agree      disagree

6 'I could not see the wood for the trees' Agree      disagree

Would you tick the appropriate box or delete the inappropriate phrase:

	Yes	No
7 'Mathematics is my favourite sixth form subject'	<input type="checkbox"/>	<input type="checkbox"/>
8 'Mathematics is the sixth form subject I like least'	<input type="checkbox"/>	<input type="checkbox"/>
9 'I worked very hard/quite hard/not very hard on the package'		
10 'I generally find mathematics hard going/fairly hard/quite easy'		

Name any other school subjects or topics in current affairs or general skills and knowledge which you find interesting:

.....

Would you comment on the following statements:

1 'The package brings out the use of mathematics and makes the subject more interesting' .....

2 'The package would be improved if there were no "problems" in it but more concentration on straight algebra' .....

.....

Any other comments on the package:

.....

Which subjects beside mathematics are you studying at A level?

1 ..... 2 ..... 3 .....

Answering code for the questionnaire




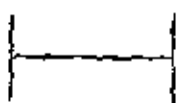

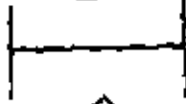


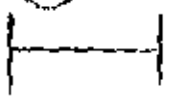




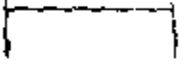



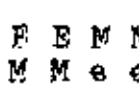



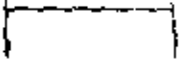



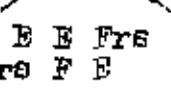
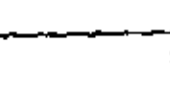

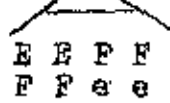



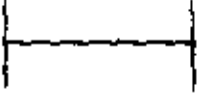


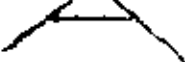
To answer the question, one puts a tick in one of the spaces:

- |       |                                     |                                     |                                     |                                     |                                     |                |                                |
|-------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|----------------|--------------------------------|
| Agree | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | disagree means | 'I agree very much'            |
| Agree | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | disagree       | 'I agree with reservations'    |
| Agree | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | disagree       | 'I neither agree nor disagree' |
| Agree | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | disagree       | 'I disagree somewhat'          |
| Agree | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | disagree       | 'I disagree strongly'          |

APPENDIX IV

Fairlop School

FAIRLOP SECONDARY GIRLS' SCHOOL

	Year 5	Year 4	Year 3	Year 2	Year 1
Monday	 M M e e E E M M +Pe +Pe	E E M M M M e e +Pe +Pe		 E E F F F F e e	 E E F F F F e e
Tuesday	  	  	R E Frs F Frs F e e  M M Pe Pe Pe Pe M M	M M Pe Pe Pe Pe M M  M M Pe Pe Pe Pe M M	M M Pe Pe Pe Pe M M  
Wednesday	 	 	 M M Pe Pe Pe Pe M M	M M Pe Pe Pe Pe M M 	  E E F F F F e e
Thursday	 M M e e e e M M	E E M M M M e e 	  E E Frs F Frs F E E	  	 M M Pe Pe Pe Pe M M
Friday	 	E E M M M M e e	 	E E F F F F e e	 

Proposed Timetable Allocation 1973-4

Key

- H= Humanities (History, Geography, Sociology, Religious Education)
- E= English
- M= Mathematics
- O= Main options
- X= Science (General Science, Home Economics)
- F= French
- A= Arts (Art, Music, Movement, Drama, English)
- Frs= French Studies
- Pe= Physical Education (see also Movement)

Needlecrafts occur within Home Economics or within Arts.

"To expand the Fairlop timetable, the explanation of a sample situation may serve to illustrate. For instance the letter "H" denotes Humanities. For our purposes we use this word to describe the subjects History, Geography, Sociology and Religious Education in the first three years of the school. Four specialists form a team and they will all be working simultaneously in the same age group. If they wish to give a lecture to start the session and follow it up with work-sheets in the four subjects, the time-table allows this. If they each wish to teach for one lesson one class in the year group, the timetable will allow this. If an outside speaker is to address the year group he can easily be accommodated. Similarly educational visits can be arranged for the half day without any other subject teacher being inconvenienced.

The advantage of this flexible arrangement, only possible because of mixed ability grouping for a common curriculum, are very obvious. It is a positive encouragement to any group of staff who wish to write a thematic syllabus. The most recent example of the use of this was when I saw a year group working on the theme of "wealth/poverty". The History syllabus was a fairly straightforward chronological story of the British attitude to poverty and wealth over the past few centuries, with emphasis on the church assumption of responsibility for the poor followed by state responsibility. The geographical syllabus dealt with areas of the world with natural resources and the development of trade. The sociology teacher used the local environment in which to find examples of poverty and wealth and took discussion lessons on deprivation, human needs, family life, environmental hardship and so forth. The R.E. teacher gave lessons on the holy poverty ideas that St. Francis and other saints and ascetics have exemplified.

- M.R. Horne  
The Head teacher

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