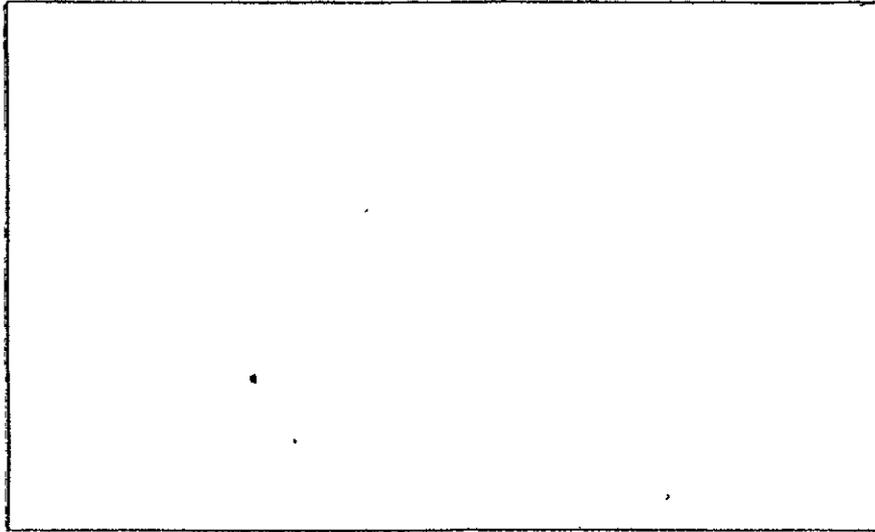


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PRITECH

Technologies for Primary Health Care

Management Sciences for Health
1655 North Fort Myer Drive, Suite 700
Arlington, Virginia 22209

PHASE TWO
MEDICAL TECHNICIAN CURRICULUM REVISION
PROJECT REPORT/EVALUATION DESIGN

A Report Prepared By PRITECH Consultants:
CHARLES R. AUSERMAN, Ph.D.
MARTHA ARNOLD, M.Ed.

During The Period:
JANUARY 29 - MARCH 6, 1984

TECHNOLOGIES FOR PRIMARY HEALTH CARE (PRITECH) PROJECT
Supported By The:
U.S. Agency For International Development
AID/DPE-5927-C-00-3083-00

936-5927

AUTHORIZATION:
AID/S&T/HEA: 9/11/84
ASSGN. NO: SS 7

Evaluation Design

INTRODUCTION

It is very important to realize that there are a number of steps which must be taken BEFORE publication of the M.T. Revised Curriculum. The Adult Basic Education Society represents a wealth of experience in Pakistan concerning successful methods of developing learning materials which are utilized by the intended audiences. In addition the Institute for Development Training has conducted numerous studies on learner centered curricula in a variety of developing countries. Both organizations agree that the key to a high quality materials which will be used by the intended audiences is that the material be pre-tested with sample groups of typical learners in their field settings. USAID/HPN has specifically requested that evaluation should be carried out to test the modules developed at the workshop. It has also been requested that the testing be conducted in all four provinces. This can be achieved within a brief time frame among a relatively small group of typical trainees. The pre-test could be given to six to twelve typical trainees in each location. A simple comparison of pre and post test scores will reveal where changes are necessary. Interviews conducted after the post-test with each trainee will also detail where the materials need to be changed. It should be obvious that data received from the pre-test MUST BE UTILIZED as the basis for the revision. Sample instruments from similar projects have been provided and are attached. The instruments themselves should be pre-tested to make certain that they are useful and understandable by those conducting the evaluation.

After the field pre-test is conducted and the materials are revised according to needs identified in the pre-test it is urged that a field test be given to the modules to make sure that the changes are sufficient. It is essential that an attitude of patience and openness to revision be maintained. The goal is to produce LEARNER-CENTERED materials which are effective with the intended users.

INSTRUMENTATION

The materials which follow are to be used as they are helpful to the pre-testing of the self-instructional modules. Typically, instruments are constructed from standardized forms which are pre-tested as to whether or not they are capable of obtaining the information desired in a particular (cultural) setting. The materials provided are far in excess of what is actually necessary. The consultant feels that since he may not be present during the pre-test, revision, field-test, revision, publication, distribution, etc. process it is necessary to provide for various contingencies. The task is to select out those items which match the objectives of the training program. Since a decision has not been made concerning who will be doing the evaluation it is difficult to formulate a rigid design with specific instruments for an organization which may very well have tried and true methods/instruments of their own.

SCHEDULE

It should be remembered that the original proposal dated November 11, 1983 contains a workplan and schedule which was approved by BHS/MOH/GOP and HPN/USAID/Islamabad. The workplan and schedule which is attached is based on the original, approved project proposal.

SUBSEQUENT PRODUCTION EVENTS

In the event that a decision is reached which permits the production of additional modules the consultant has presented copies of all the materials used in the workshop to the Training and Workshop Coordinators. 2X2 transparencies of the overhead transparencies have been given with handouts and examples of self-instruction. Various texts on the latest state of the art in appropriate educational media and instructional design have been given to the Workshop and Training Coordinators. In addition, Section 13 of this document contains a helpful review of the programmed learning production process.

For each module produced in future workshops a repeat of the evaluation/revision process is mandatory if the materials are to be actually learner-centered.

EXTENT OF EVALUATION

It is not the intent or purpose of this document to create a definitive or exhaustive research design with elaborate details along the line of an academic approach. Basically we are trying to foster the creation of learner centered training materials which work in the field as well as in the training centers. Quite naturally there are those who would argue that it is impossible to analyze one segment of the training system without taking other elements into mind. The training system is composed of many factors such as the trainees and their needs, the trainers, the training methods, the context of the training and ultimately the end use of the training within the health system. The consultant has given the Training and Workshop Coordinators copies of much larger training studies conducted in Asia. The four year study of the use of self-instruction in training doctors, nurses and mid-wives in the Phillippines has been given to the BHS project as an example of an extensive and inclusive approach to evaluation of a similar project. The protocol and instrumentation for the Phillippine study have been adapted for several other Asian countries and are therefore, provided for information.

CONCLUSION

The consultant would like to thank all those who made the workshop possible. The quality of the participants, their professional competence and eagerness to work hard and long was very impressive. The workshop facilities at the National Institute of Health provided the most suitable environment for this endeavor. The housing, meals, transportation and arrangements were also exceptionally well handled. All who were participants and facilitators at the workshop would wish to express their great appreciation to the BHS/GOP for their generous hospitality and impressive efforts to make this project a success.

A special word of thanks is due to the secretaries, drivers and other staff for their faithful dedicated endeavour on behalf of this project.

A final word of appreciation is offered to Dr. Mushtaq Ahmed Chaudhary, Project Director, Basic Health Services Cell, Chief Workshop Co-Coordinator, Dr. M. Zafar Ahmad, Assistant Director General, Basic Health Services Cell, Workshop Coordinator, Ms. Mary Lamb, Federal Training Advisor, USAID Workshop Coordinator, Dr. Connie Davis, Chief, HPN/USAID/Islamabad and Ms. Jinny Sewell, Project Monitor, HPN/USAID/Islamabad.

PHC Project Curriculum Revision Workshop

The following materials are attached to identify the Primary Health Care (PHC) Project Curriculum Revision Workshop held at the National Institute of Health and the Basic Health Services Cell February 18 - March 1, 1984:

1. Proposal for the Revision, November 11, 1983 (table of contents)
2. Curriculum Revision Workshop Staff
3. Curriculum Revision Workshop Participants
4. An outline of the present Curriculum
5. Curriculum Revision Workshop Program
6. Core Curriculum For Revision (Suggested priority topics)
7. Participants evaluation of the Workshop
8. Four completed (first draft) Self-Instructional Modules:
 - A. Pre-Natal Care -- Dr. Fatima Bukhari
 - B. Malaria Control -- Dr. Ghulam Hashim
Dr. William Chin
 - C. Community Health -- Dr. Heather Carmichael
 - D. Trauma and Emergencies -- Dr. S.M. Pasha
9. Covers of Other Revised Modules and Samples of Curriculum Revision of Present Curriculum
10. Adult Basic Education Society Curriculum Development Schedule
11. Pre-test, Field-test, Try-out, Pre-publication schedule.
12. Recommendations for Further Revision of the Four Self-Instructional Modules Before Field-Testing
13. Recommendations for Developing a Framework for Curriculum Revision

SECTION 1

PROPOSAL FOR THE REVISION

NOVEMBER 11, 1983

(TABLE OF CONTENTS)

EVALUATION OF MEDICAL TECHNICIAN CURRICULUM
AND PROPOSAL FOR REVISION

Presented to: BHS/MOH/GOP
USAID/HPN/Islamabad

Prepared by:
Charles R. Ausherman, Ph.D.
Director
Institute for Development Training

Date: November 11, 1983

TABLE OF CONTENTS

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I. Executive Summary	1
II. Introduction	2
III. Background	3
IV. Goals of the Revision	3
V. Curriculum Development in other Countries	4
VI. Description of a typical project/program	5
VII. Pakistan Revision Process/Proposal	8
A. Development Process for Programed Modules	8
B. Work Plan	10
C. Framing	11
D. Appropriate Educational Media and Training Methods	12
E. Evaluation	12
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H. Reports	15

Appendices

- Appendix A - Persons Contacted During Assignment
- Appendix B - IDT Pilot Projects in Training Innovations
- Appendix C - Sample Training Modules
- Appendix D - Memorandum of Conversation on the MT Curriculum Revision
- Appendix E - Production Event Schedule - Check List
- Appendix F - Suggested Workshop Schedule
- Appendix G - Sample Table of Contents for Training Module
- Appendix H - Materials Reviewed
- Appendix I - Relevant Studies

Bibliography

List of Abbreviations

SECTION 2

CURRICULUM REVISION WORKSHOP STAFF

CURRICULUM REVISION WORKSHOP STAFF

Dr. Charles Ausherman	Training Facilitator, Director, Institute for Development Training,
Dr. Mushtaq Ahmed Chaudhary	Project Director, Basic Health Services Cell, Chief Workshop Coordinator
Dr. M. Zafar Ahmad	Assistant Director General, Basic Health Services Cell, Workshop Co-Coordinator
Ms. Martha Arnold	Training Facilitator, Institute for Development Training
Dr. Michael O'Byrne	Training Facilitator, East West Center Population Institute
Mrs. Najma Faruki	Editor, Adult Basic Education Society
Mrs. Zohra Rehman	Editor, Adult Basic Education Society
Mr. B.D. Siddiqui	Artist, Adult Basic Education Society
Mr. Khalid Latif Qureshi	Artist, Adult Basic Education Society
Miss Tasleem Razia Paracha	Provincial Training Specialist, Baluchistan
Mrs. Nasim Akhtar	Provincial Training Specialist, NWFP
Mrs. Shahnaz Imam	Provincial Training Specialist, Sind
Mrs. Mahmooda Nasreen	Provincial Training Specialist, Punjab
Ms. Mary Lamb	Federal Training Advisor, USAID, Workshop Co-Coordinator

SECTION 3

CURRICULUM REVISION WORKSHOP PARTICIPANTS

CURRICULUM REVISION WORKSHOP PARTICIPANTS

Topic	Participants
MCH 1 st WK. 2 nd	Dr. Fatima Bukhari, Principal, Public Health School, Karachi Dr. Mahmooda Bequm, Health Inspectress, Health Directorate, Lahore
Family Planning 1 st WK.	Dr. Bilquis Iqbal, Principal, Rawalpindi Regional Family Planning Training Institute, Rawalpindi
Nutrition 2 nd WK.	Dr. Mati-ur-Rehman, Nutrition Division, National Institute of Health, Islamabad
Immunization 1 st WK. 1 st WK.	Dr. Ismatullah Chaudhary, WHO Programme Officer (EPI) Health Directorate, Lahore Dr. Mahmood Alam, Assistant Chief (EPI), NWFP Peshawar
Sanitation First 2-3 days	Dr. M. Nawaz Tariq, Director and Professor of Public Health Engineering Institute, Univ. of Engg. & Tech. Lah.
Malaria 2 weeks	Dr. Ghulam Hashim, Epidemiologist, Malaria Control Programme, Rawalpindi Dr. William Chin, USAID Advisor, Malaria Directorate Rawalpindi
Community Health 2 wks. 2 wks. 2 wks.	Dr. Heather Carmichael, Director, Community Development Programme, Women Christian Hospital, Multan Mr. Kiffayatullah, Tutor, Paramedical School, Sajdu Sharif, Swat Mr. Nisar Ali Rizvi, Tutor, Medical Technicians Training School, Sialkot
Trauma & Emergencies 1 st WK.	Dr. S.M. Pasha, Registrar, Casualty Department, Central Government Polyclinic, Islamabad
Common Respiratory Problems 1 st WK.	Dr. H. Zaman Khan, Medical Officer, Chest Department Central Government Polyclinic, Islamabad

Topic	Participants
Diarrhea	Dr. Asifa Murtaza, Assistant Professor, Paediatric Department, Mayo Hospital, Lahore
Gastrointestinal Diseases Second week	Professor Dr. Mushtaq Khan, Paediatric Department, Jinnah Postgraduate Medical Centre, Karachi
Skin Diseases 1st week	Dr. S.S.H. Zaidi, Associate Physician, Dermatology, Central Government Polyclinic, Islamabad
Medical History Taking, Physical Exam. Anatomy & Physiology <u>Fever (Diff. Diagnosis)</u> 2 weeks	<p>Dr. Liaqat-Ali Shah, Programme Training Officer, Medical Technicians Training School, Sukkur</p> <p>Dr. Rafique Ahmad-Virk, Programme Training Officer, Medical Training-School, Jhand</p> <p>Dr. Safiullah, Programme Training Officer, Medical Technicians Training School, Mardan</p>
Statistics and Epidemiology 2 weeks	Dr. Mushtaq Ahmed Chaudhary, Deputy Director General, Health, Basic Health Services Cell, Islamabad
	Mr. Nazir Shaikh, Chief Statistical Officer, Health Division, Islamabad
Ear, Nose & Throat 2-3 days	Dr. Khalid Mahmood, Professor, ENT, Medical College, Rawalpindi
	Dr. Zulkifal Sabir, Registrar, ENT Department, Rawalpindi General Hospital
Eye 1st week	Dr. Rashida Ashfaque, Registrar, Eye Department, Central Government Polyclinic, Islamabad
Common Childhood Diseases 1st week	Dr. Mrs. Shamshad Bano, Registrar (Paed.) Central Government Polyclinic, Islamabad

SECTION 4

AN OUTLINE OF THE PRESENT CURRICULUM

Book-I - Core Knowledge & Skills

- Module 1. Introduction to Health Care
- Module 2. Introduction to Statistics and Epidemiology
- Module 3. Medical History Taking..
- Module 4. Anatomy and Physiology
- Module 5. Physical Examination.

BOOK -II - GENERAL CLINIC:

- Module 1. Common Skin Problems
- Module 2. Common EENT/Dental Problems
- Module 3. Common Problems of the Respiratory System and Heart
- Module 4. Common Problems of the Gastro-Intestinal Tract.
- Module 5. Common Genito-Urinary Problems.
- Module 6. Common Chronic Diseases.
- Module 7. Common Generalized Infections and Other Medical Conditions.

BOOK -III - MATERNAL AND CHILD HEALTH

- Module 1. Common Problems of Pregnancy and Reproduction
- Module 2. Obstetrical Labour and Delivery
- Module 3. Clinical Family Planning.
- Module 4. Prenatal and Postnatal Care.
- Module 5. Common Problems of Infants and Children.
- Module 6. Child Care.

BOOK-IV - TRAUMA AND EMERGENCY.

BOOK -V - COMMUNITY HEALTH

- Module 1. Community Nutrition
- Module 2. Community Family Planning.
- Module 3. Community Environmental Health.

BOOK - VI - CLINICAL REFERENCE MANUAL

- Unit. 1. Diagnostic Protocols.
- Unit. 2. Management Protocols
- Unit 3. Formulary

SECTION 5

CURRICULUM REVISION WORKSHOP PROGRAM

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CURRICULUM REVISION WORKSHOP/LEARNINGSHP/PRODUCTION EVENT
SPONSORED BY THE
NATIONAL BASIC HEALTH SERVICES CELL
MINISTRY OF HEALTH,
18TH FEBRUARY - 1ST MARCH, 1984
NATIONAL INSTITUTE OF HEALTH
ISLAMABAD, PAKISTAN

Saturday, 18 February

- 9:00 Registration and Distribution of Documents
9:30 Recitation from the Holy Quran
9:35 Welcome Address: Dr. Mushtaq Ahmed Chaudhary
Deputy Director General (BHS)
11:00 Tea Break
11:15 Introduction to the Workshop
. Identification of Materials
. Introduction of Facilitators
. Introduction of Participants
. Goals/Schedule
1:00 Lunch
1:45 Introduction to Programmed Instruction and
Systematic Instruction (Presentation)
Evaluation of Sample Prototype Materials
(Participants)
3:00 Tea Break
3:15 An Overview of the Existing Curriculum (Presentation)

Sunday, 19 February

- 9:00 Review/Preview
9:15 Writing and Revising Training/Learning Materials
for a Specific Audience (Presentation) Mrs. Lubna
Saif, Materials Coordinator, Allama Iqbal Open
University, Islamabad
10:30 Systematic Steps in the Development of Training
Modules (Presentation)
11:00 Tea Break
11:15 Writing Educational Objectives Introduction and
Illustrations (Presentation)
1:00 Lunch
1:45 Educational Objectives Practice Session (Participants)
3:00 Tea Break
3:15 Participants' Demonstration of Educational Objectives

Monday, 20 February

- 9:00 Review/Preview
- 9:15 Participants' Demonstration of Educational Objectives According to Selected Topics
- 11:00 Tea Break
- 11:15 Group/Individual Critique of Objectives Revision
- 1:00 Lunch
- 1:45 Finalization of Objectives for Topics Sequencing of Objectives
- 3:00 Tea Break
- 3:15 Designing Consistent Post-Tests Based on Objectives (Presentation)

Tuesday, 21 February

- 9:00 Review/Preview
- 9:15 Writing Post-Tests for Objectives and Subobjectives (Participants). Individualized Instruction on Testing Techniques
- 11:00 Tea Break
- 11:15 Technique of Framing Techniques for Introducing Content in Frames (Presentation)
- 1:00 Lunch
- 1:45 Role of the Trainer as Learning Facilitator (Presentation)
- 3:00 Tea Break
- 3:15 Review of Steps in Designing Learning Modules (Presentation)
Format of the Learning Module (Presentation)

Wednesday, 22 February

- 9:00 Review/Preview
- 9:15 Selection of Appropriate Media and Methods (Presentation)
- 11:00 Tea Break
- 11:15 Development of Programmed Instruction Module: Cover Design & Use of Visuals
- 1:00 Lunch
- 1:45 Development of Programmed Instruction Modules with Individualized Assistance
- 3:00 Working Tea Break

Thursday, 23 February

9:00 Development of Programmed Instruction Modules
with Individualized Assistance

11:00 Tea Break

11:15 Interpersonal Techniques in Training

1:00 Lunch

1:45 Development of Programmed Instruction Modules
with Individualized Assistance

3:00 Working Tea Break

Friday, 24 February - Free Day

Saturday, 25 February

9:00 Development of Programmed Instruction Modules
with Individualized Assistance

11:00 Tea Break

11:15 Development of Programmed Instruction Modules
with Individualized Assistance

1:00 Lunch

1:45 Development of Programmed Instruction Modules
with Individualized Assistance

3:00 Working Tea Break

Sunday, 26 February

9:00 Development of Programmed Instruction Modules
with Individualized Assistance

11:00 Tea Break

11:15 Development of Programmed Instruction Modules
with Individualized Assistance

1:00 Lunch

1:45 Development of Programmed Instruction Modules
with Individualized Assistance

3:00 Working Tea Break

Monday, 27 February

9:00 Review/Preview: The Revision Process

9:15 Exchanging of Modules/Peer Comments

11:00 Tea Break

11:15 Exchanging of Modules/Peer Comments

1:00 Lunch

1:45 Revision of Modules with Individualized Assistance

3:00 Working Tea Break

Tuesday, 28 February

9:00	Review/Preview
9:15	Revision of Modules with Individualized Assistance
11:00	Tea Break
11:15	Revision of Modules with Individualized Assistance
1:00	Lunch
1:45	Revision of Modules with Individualized Assistance
3:00	Working Tea Break

Wednesday, 29 February

9:00	Review/Preview
9:15	Evaluation
11:00	Tea Break
11:15	Finalization of Programmed Learning Modules
1:00	Lunch
1:45	Finalization of Programmed Learning Modules
3:00	Tea Break
3:15	Evaluation of Workshop and Facilitators - Participants

Thursday, 1 March

9:00	Staff Evaluation of Workshop; Feedback of Participants' Evaluation of Workshop Impressions, Comments, Recommendations
11:00	Closing Ceremony

SECTION 6

CORE CURRICULUM FOR REVISION

(SUGGESTED PRIORITY TOPICS)

UNITED STATES GOVERNMENT

Appendix D.

Memorandum

TO : Charles Ausherman, HPN

FROM : Dr. Cornelia E. Davis, Chief/HPN

SUBJECT: Core Curriculum for Revision

DATE: Nov. 2, 1983

I have listed the subjects that I feel should be revised in the first workshop by order of priority:

1. Preventive Interventions
 - introduction to statistics/epidemiology (geared to their application in the community i.e. health needs assessment, community surveys, determining the most prevalent illnesses etc.)
 - immunization
 - ORS
2. Outreach Work in the Community (new module for development)
 - administrative (organizing daily routine for BHU work/out reach work)
 - selecting a village
 - contacting village leaders
 - establishing health committee etc.
3. Training Community Health Workers
 - selection
 - training methodologies
 - teaching aids
 - referral
 - supervision
4. MCH
 - prenatal, delivery, postnatal
 - emphasis on FP/child spacing
 - emphasizing the practical
 - ensuring that the female MT does a specified number of the above so she is competent



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5. What is Health Education
 - make it practical
 - "do"able
6. Selected Common Health Problems
 - diarrhea and dehydration
 - undernutrition (height, weight, road to health card)
 - anemia
 - malaria
 - TB
 - pneumonia
7. Trauma and Emergencies
8. Practical Procedures
 - injections
 - IVs
 - suturing
 - malaria slide preparation
 - sputum slide preparation
9. Core Curative Knowledge (simplify)
 - ENT
 - Heart
 - Lungs
 - Kidneys
 - GI
 - UG
10. Physical Examination

In a following workshop the following subjects can be revised: environmental sanitation work, medical history, other communicable diseases, serious and chronic illnesses.

SECTION 7

PARTICIPANTS EVALUATION OF THE WORKSHOP

PARTICIPANTS EVALUATION OF BHS CURRICULUM REVISION WORKSHOP

February 11 - Marcy 1, 1984

National Institute of Health, Islamabad, Pakistan -
N = 11

	<u>Responses</u>
1. The <u>course objectives</u> were:	
a. clearly stated or written	5
b. stated or written; but not all of them were clear to me	6
c. stated or written; but most of them were not clear to me	0
d. neither stated or written	1
2. The <u>course content</u> was geared to a level that was generally:	
a. appropriate for my background	7
b. too elementary	4
c. too difficult	0
d. inappropriate for my background	0
3. I think the <u>Organization</u> of the course material was:	
a. completely clear and useful; excellent	3
b. for the most part, clear and useful; good	2
c. some topics were organized in a clear and useful manner, while others were not; fair	3
d. there was little apparent organization in this course; poor	3
4. After reading the <u>course manual</u> , I think it is:	
a. both a well written and useful document	5
b. a fairly well written document, but nevertheless useful	2
c. a poorly written document that is of limited utility	3
d. neither a well written nor useful document	0
e. there is no course manual	4
5. The <u>time</u> required to complete the <u>homework assignments</u> was:	
a. reasonable	4
b. unreasonable	1
c. wasted; these assignments were "busy work"	3
d. there were no homework assignments in this course	2
6. The amount of <u>time allotted</u> for this <u>course</u> was	
a. sufficient	6
b. too long	2
c. too short	3
d. this course should last _____ number of days	0
7. <u>Overall</u> , I think this course was:	
a. excellent	2
b. good	5
c. fair	3
d. a waste of time and money	1
8. Given the objectives of the course and the skills required for a meaningful understanding of the material would:	
a. recommend this course to a friend without reservation	1
b. recommend this course with some possible changes	8
c. not recommend this course unless there were definite improvements	1
d. not recommend this course under any circumstances	1

9. For future courses, there should be:
- a. no substantive changes 0
 - b. more practical application of the course material 4
 - c. more theory presented as a basis for the material taught 0
 - d. more of a "balance" provided between theory and practical application 6
10. How did you hear about this course?
- a. employer 7
 - b. friend 1
 - c. schedule 2
 - d. conference 0
 - e. other 0

	<u>Strongly agree</u>	<u>Agree</u>	<u>Disagree</u>	<u>Strongly Disagree</u>	<u>No opinion</u>
. The <u>course content</u> was useful for my <u>professional growth</u> .	(5) 5	(3) 4	(1) 3	(1) 2	(1) 1
. The <u>course content</u> was what had <u>expected</u> .	5	(6) 4	(3) 3	2	1
. The <u>course content</u> was <u>too complex</u> .	5	(2) 4	(4) 3	(4) 2	1
. The <u>course content</u> was <u>too simple</u> .	5	(3) 4	(4) 3	(1) 2	(1) 1
. The <u>course content</u> was <u>up to date</u> .	5	(7) 4	(1) 3	(1) 2	1
<hr/>					
. During the course I felt <u>challenged</u> to learn.	(4) 5	(4) 4	(1) 3	(2) 2	1
Generally, the course materials were <u>presented</u> in an <u>interesting manner</u> .	(1) 5	(6) 4	(3) 3	(2) 1	(1) 1
The <u>course content</u> was well <u>coordinated</u> among the instructors.	(1) 5	(6) 4	(5) 3	(1) 2	1
The <u>instructors</u> were well <u>prepared</u> for most class sessions.	(1) 5	(7) 4	(1) 3	(1) 2	(1) 1
. The <u>instructors</u> were quite <u>knowledgeable</u> about their subject area.	(4) 5	(5) 4	(1) 3	(1) 2	1
<hr/>					
. Generally, I understood what I was expected to learn in this course.	(1) 5	(6) 4	(2) 3	2	1
. Throughout the course I received <u>sufficient information</u> on anything I <u>did not understand</u>	(1) 5	(5) 4	(3) 3	2	1
. The <u>questions</u> raised during the lectures were usually answered to my <u>satisfaction</u> .	(1) 5	(5) 4	(2) 3	2	1
. My <u>background</u> was <u>adequate</u> for success in this course.	(3) 5	(6) 4	3	2	1
. The <u>teaching methods</u> used in this course were <u>effective</u> for my learning.	(3) 5	(4) 4	(2) 3	(1) 2	(1) 1
<hr/>					
. This course contained a <u>sufficient amount of practice experience</u>	5	(6) 4	(1) 3	(2) 2	1
. The course <u>assignments</u> were <u>useful</u> for my learning	(3) 5	(5) 4	(1) 3	(1) 2	1
. The production quality of the audio-visual materials was <u>technically adequate</u> .	(2) 5	(5) 4	(1) 3	(1) 2	1
. The <u>audio-visual materials</u> aided my <u>understanding</u> of the topics presented.	5	(7) 4	(1) 3	(1) 2	1
. The <u>final exam</u> accurately <u>represented</u> the <u>material covered</u> in the course.	5	(2) 4	(1) 3	(1) 2	(4) 1

Responses ()

21. Overall, I was pleased with this course	5	(6) 4	(1) 3	(2) 2
22. I think my <u>technical skills</u> and/or knowledge have been <u>strengthened</u> as a result of this course	(4) 5	(3) 4	(1) 3	(2) 2
23. I think I will be able to <u>use what I have learned</u> from this course in my current position.	(4) 5	(4) 4	(0) 3	(2) 2

SECTION 8

FOUR COMPLETED (FIRST DRAFT) SELF-INSTRUCTIONAL MODULES:

- | | | |
|---------------------------|----|---------------------------------------|
| A. Pre-Natal Care | -- | Dr. Fatima Bukhari |
| B. Malaria Control | -- | Dr. Ghulam Hashim
Dr. William Chin |
| C. Community Health | -- | Dr. Heather Carmichael |
| D. Trauma and Emergencies | -- | Dr. S.M. Pasha |

(Due to size these are separately bound)

SECTION 9

COVERS OF OTHER REVISED MODULES AND SAMPLES OF CURRICULUM

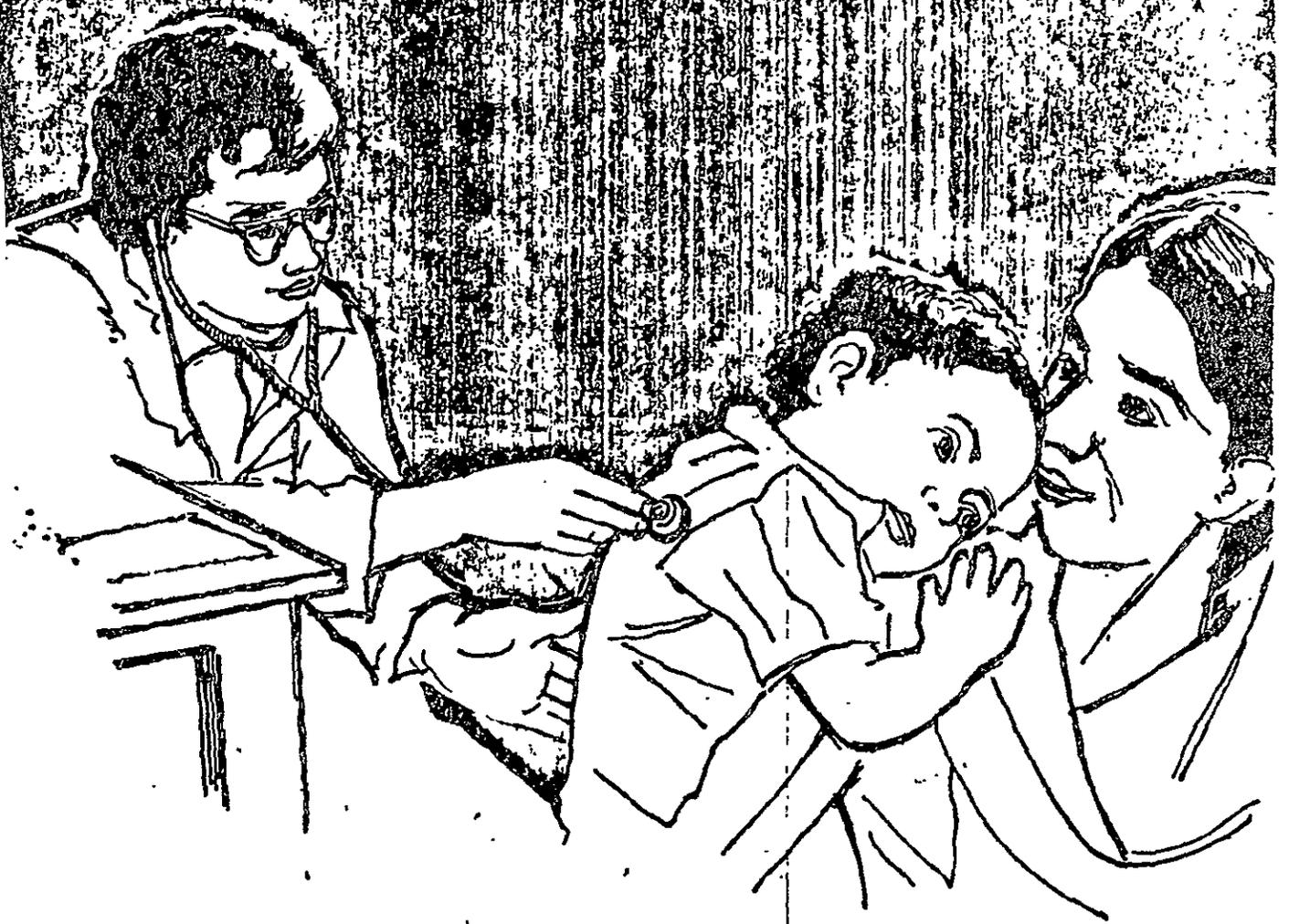
REVISION OF PRESENT CURRICULUM

EXPANDED PROGRAMME ON IMMUNIZATION



DR MAHMOUD ALAMI
ISMATULLAH

Common Problems of INFANTS & CHILDREN



DR. SHAMSHAD BANO

MALARIA



A HEALTH PROBLEM FOR PAKISTAN & THE WORLD

DR. W. CHIN
DR. G. HASHIM

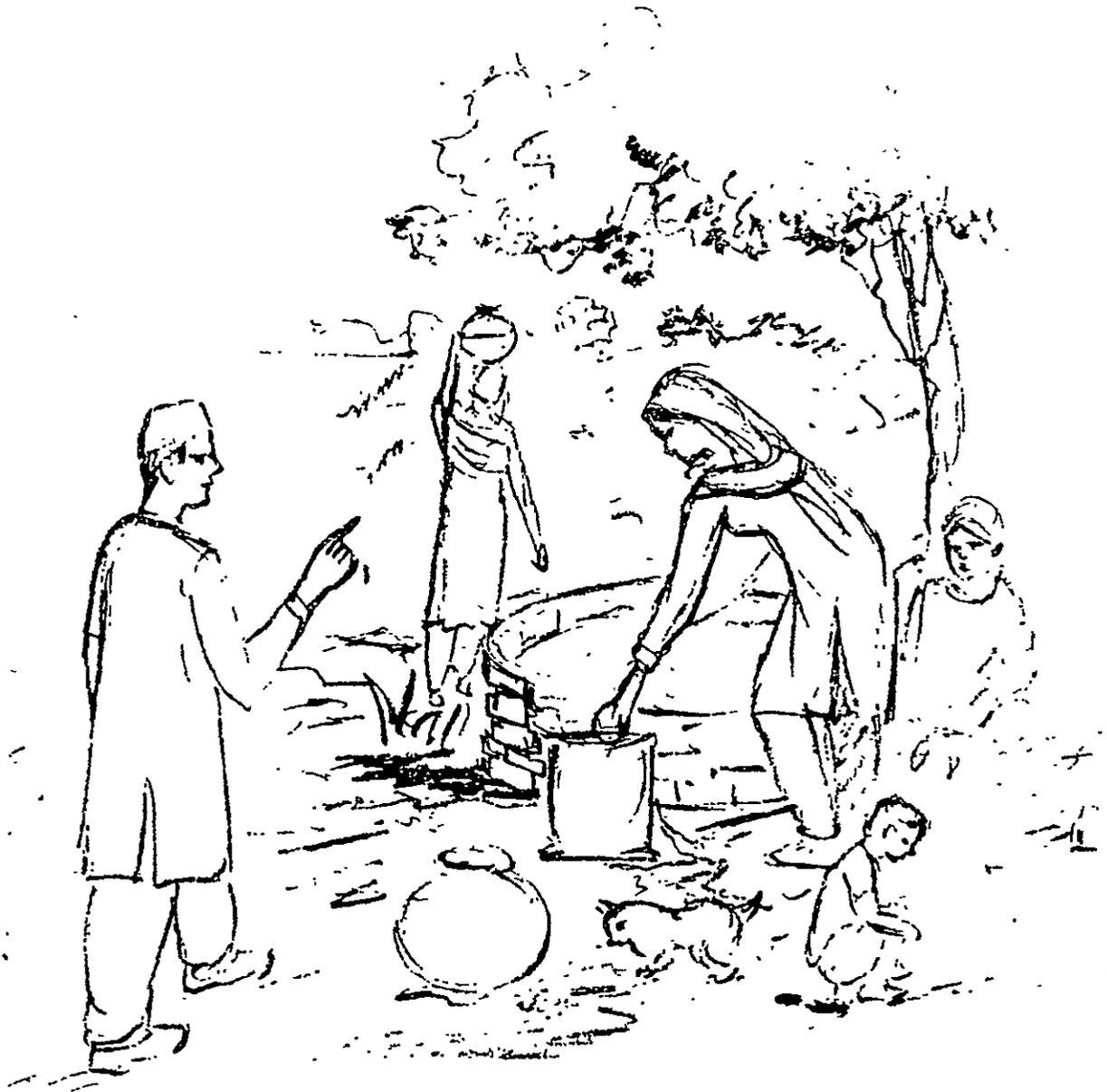
COMMUNITY HEALTH



TITLE of Books

Mrs. C. ...

DEPARTMENT OF ...



DIAGNOSIS OF

FEVER



Community Health



DR. M. NAWAZ TARIQ
N.A. RIZVI

ANATOMY

and

PHYSIOLOGY

MODULE NO. III

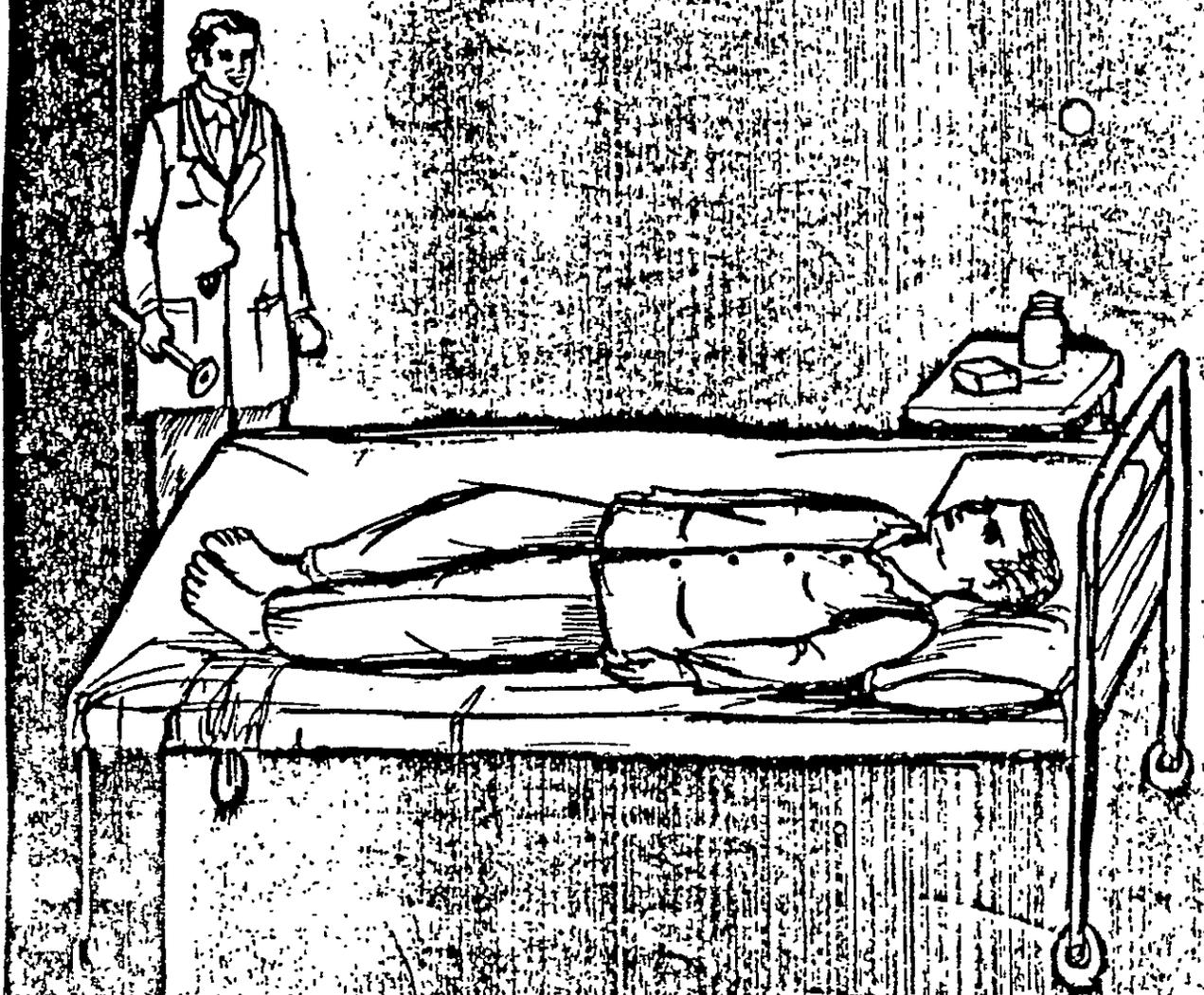


GETTING THE VILLAGE TO HELP ITSELF



Dr. Carmichael
Mr. Rizvi
Mr. Kiffayatullah

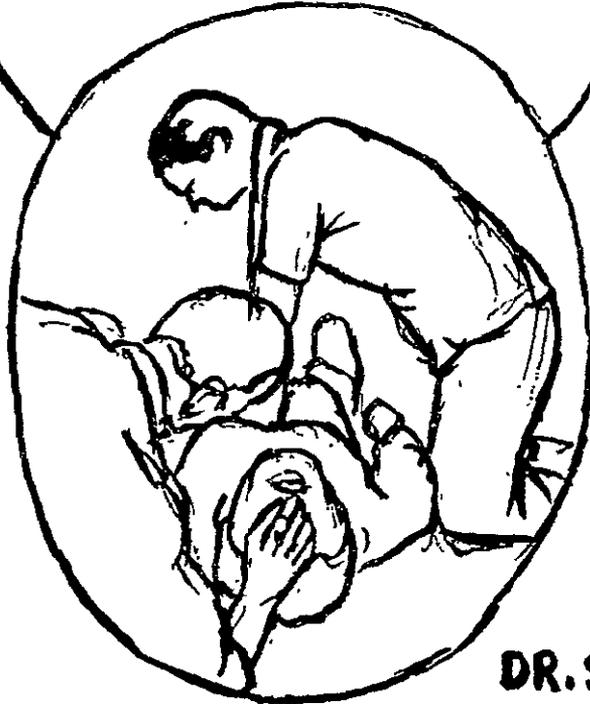
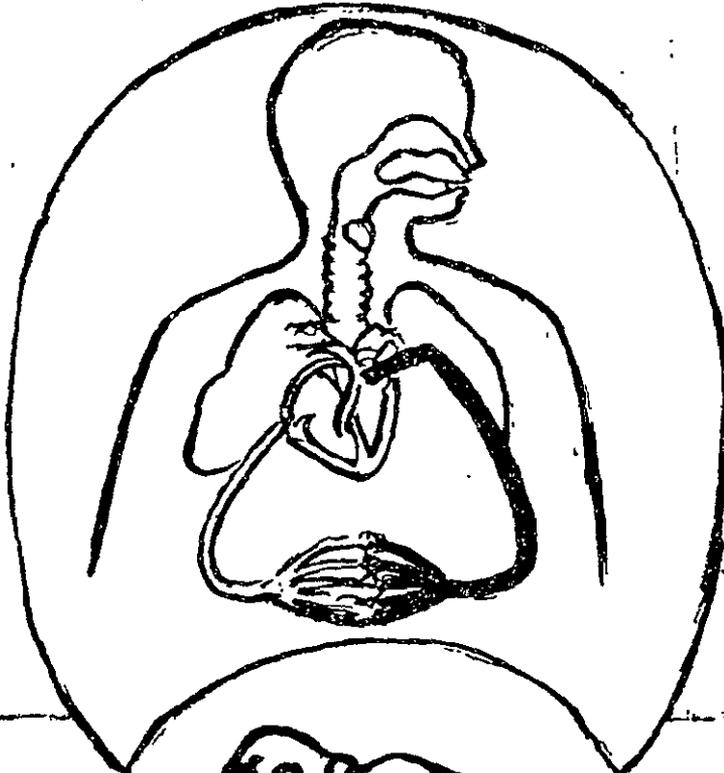
MEDICAL HISTORY TAKING & PHYSICAL EXAMINATION



DR. SAFI-ULLAH

TRAUMA & EMERGENCIES

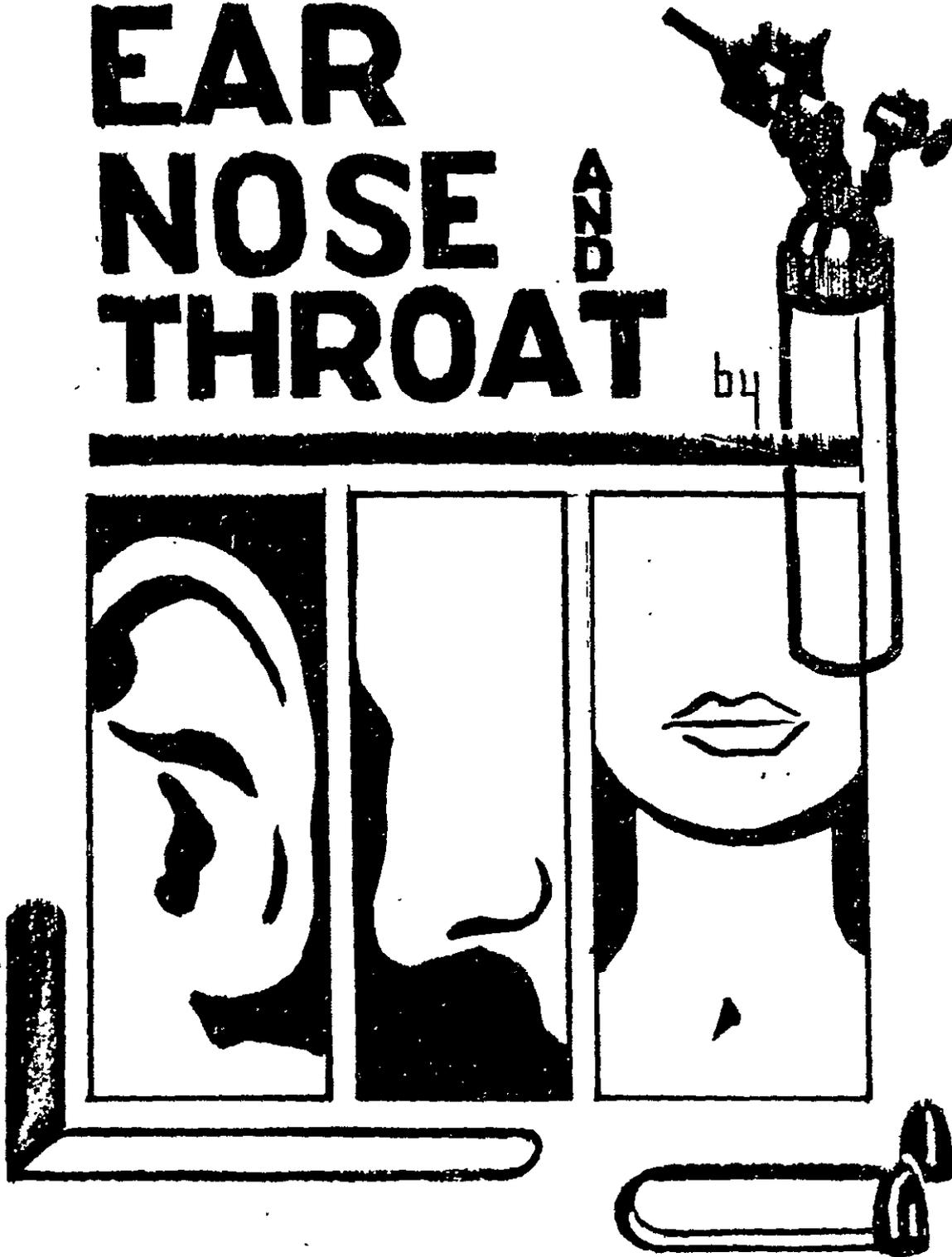
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DR. S.M.A. PASHA

EAR NOSE ^{AND} THROAT

by

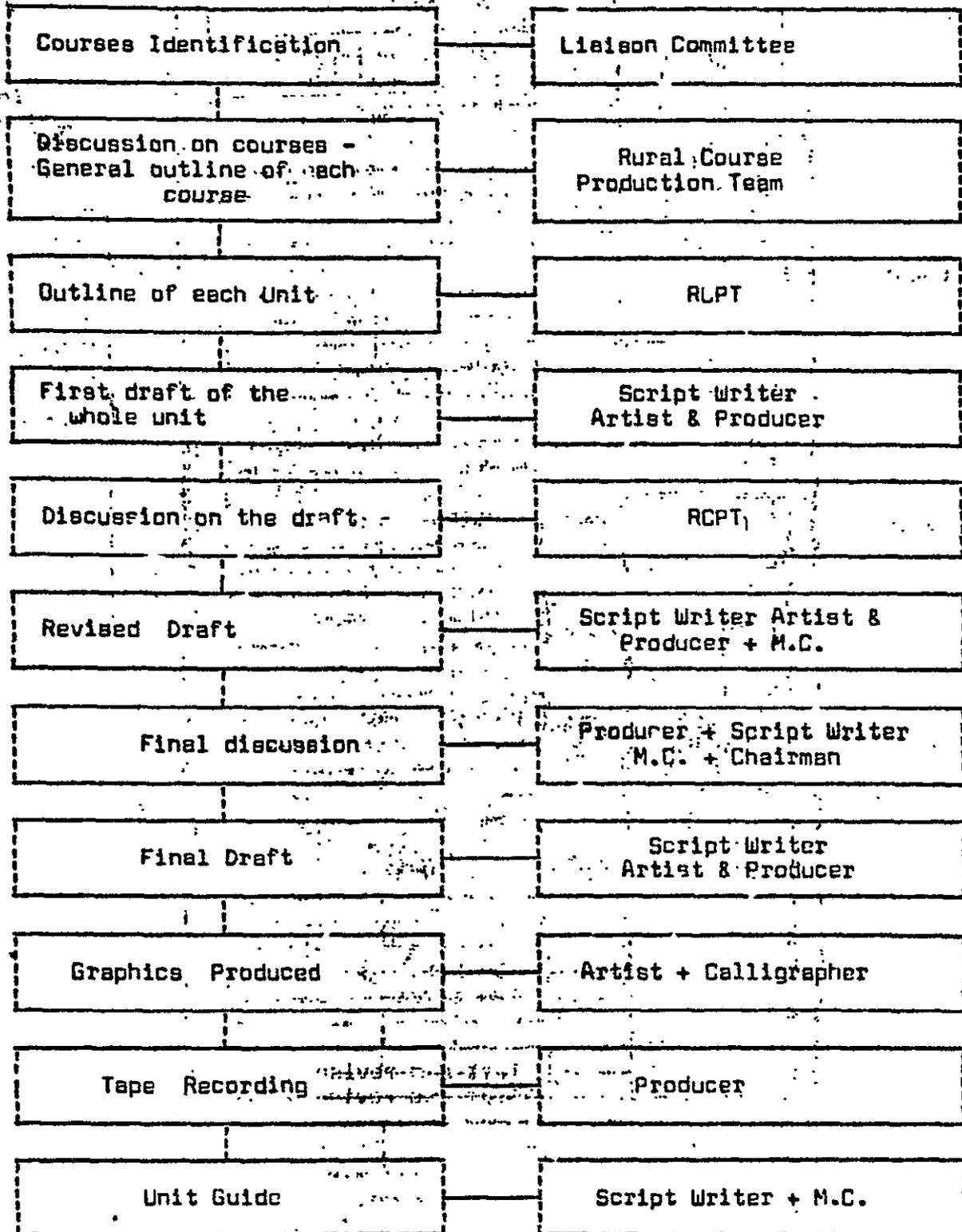


DR. ZULKIFAL SABIR.

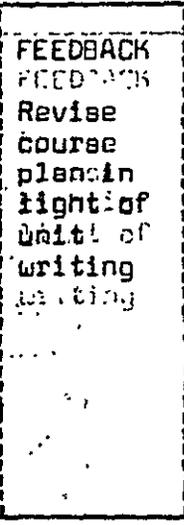
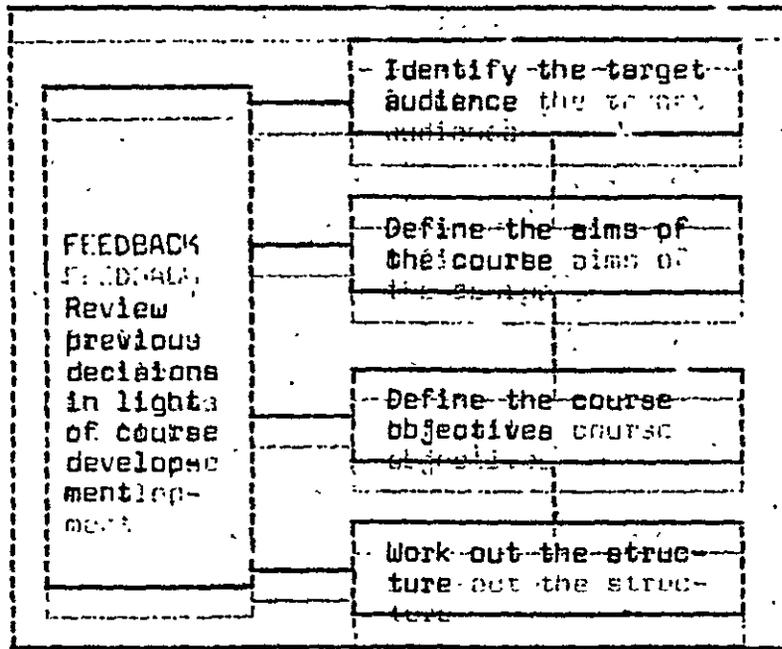
SECTION 10

**ADULT BASIC EDUCATION SOCIETY CURRICULUM
DEVELOPMENT SCHEDULE**

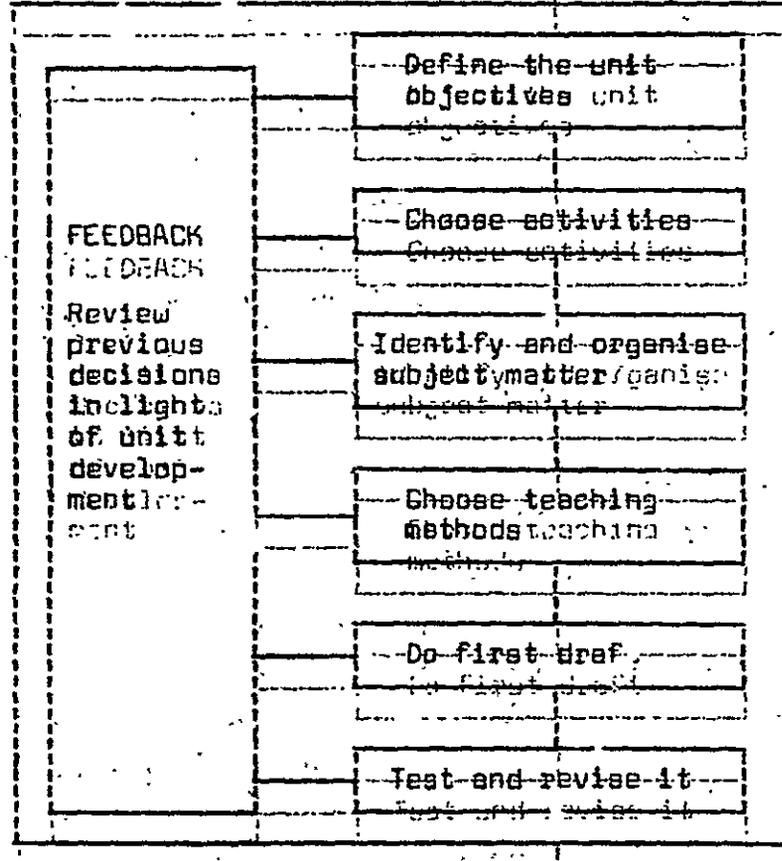
PRODUCTION SCHEDULE



Course development development



Unit development development



Course drafted

SECTION 11

PRE-TEST, FIELD-TEST, TRY-OUT, PRE-PUBLICATION SCHEDULE

Programmed Learning Training Study

1.	Workshop <u>Activities</u> (See separate Agenda)	<u>Time</u>	<u>Manpower</u> Full Staff
2.	Revision		Research Associate Consultants
	a) revising and reviewing of modules/materials		Research Assistant
	b) pre-testing revised materials		Research Associate
	c) final revision		Editor
	d) final editing		Clerk-typist
	e) preparing 2nd draft copies		
3.	Printing		
	a) type setting, proof reading, typing	(not needed if mimeographed)	Editor
	b) paste-up, insert proof corrections		Typesetter
	c) camera work, blue print, printing, binding		Proofreader Typist Artist
4.	Distribution and utilization		
	a) deliver to target groups		
	b) use of P.I. module		
5.	Evaluation		Research Associate Research Assistant
	a) QN construction (including pre-testing revision)		
	b) contract evaluation		Programmer Coders
	b.1. training interviewers		Clerk-typist
	b.2. data gathering		Secretary
	b.3. data processing		
	c) Data analysis and writing of evaluation reports		

1. Steps to Design

Pre-workshop

Concurrent Activity

DHHL/MOH
MT Curriculum Revision Project

- Needs Assessment
- Resource Assessment
- Selection of Topics
- Selection of Audiences/Learners

- Plan Workshop
- Participants
 - Facilitators

Management Plan
Development

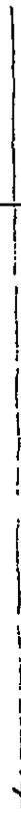
-
- Selection of Media/Methods
 - Statement of Objectives
 - Designing Post-tests Criteria
 - Writing Program - - Packaging

Workshop

-
- Evaluation
 - Pretesting Design

-
- Revision

Post Workshop



2. Publication of Materials

Distribution

Spot Checking

Feedback Mechanism

Revision

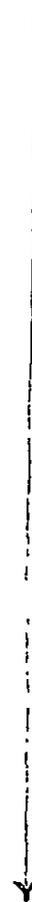
Publication

Distribution

Post Workshop



Management Plan
Implementation



3. Resource Assessment

Needs Assessment

Selection of Topics

Selection of Media/Methods.

Second workshop



Evaluation

Pretesting

Target Institution

Target Audience/Learner

- Knowledge -

- Attitude -

- Practice -

Data Collection -

Data Tabulation -

Data Analysis -

Preparation of Report

5. Dissemination of Findings:

- Publication and Distribution.

- Seminar Conference

- Journal Articles

- Feedback to Program Personnel - Leadership -

Below is a list of 12 points by which each sub-objective, post test item, content, and practice exercises may be evaluated. Please place a check in the column if the point HAS NOT been achieved.

	Sub-objective	Post test	Content	Practice Exercises
1. Clear, unambiguous				
2. Level of understanding is suitable				
3. Contains essential points which must be covered				
4. Is properly sequenced				
5. Is consistent with sub-objective				
6. Performance required is provided				
7. Specifies in measurable terms				
8. Realistic, obtainable, achievable				
9. Information contained is accurate				
10. Interesting				
11. Concise, to the point				
12. Mode of presentation is most appropriate (i.e. the best way to convey information)				

CRITERIA TO BE MET

Statement of Objectives and Sub-Objectives	CRITERIA TO BE MET											
	States Performance Required	States under what conditions	Specific Performance/Level indicated	Follows logical sequence	IS measurable	Has appropriate post test/items	Is adequately covered in learning Module	Is appropriate for intended learner	Information is accurate, complete and relevant	Level of language is appropriate	Practice is appropriate and adequate	Feedback is provided
Overall Objective												
Sub-Objective 1.												
Sub-Objective 2.												
Sub-Objective 3. etc												
Frame 1												
Frame 2												
Frame 3 etc.												

Please check in each box if criteria are met ✓

Student's Name

Title of Program & Author's Name

EVALUATION FORM

FOR

PROGRAMMED INSTRUCTION

Programmed instruction is a technique for inducing learning from self-instructional materials. The nature of this responsibility implies that the technique satisfies certain conditions associated with teaching and learning. On the basis of the conditions stated below, indicate with the appropriate response your assessment of the program you are evaluating.

1. Does the program include learning objectives expressed in unambiguous terms?

Yes _____ No _____

Comments:

2. Does the program indicate the intended audience for instruction?

Yes _____ No _____

Comments:

3. Has the author included appropriate pre/post test experiences?

Yes _____ No _____

Comments:

4. Does the program identify the learning functions that will be experienced?

Yes _____ No _____

Comments:

5. Has the author applied the critical idea principle throughout the program?

Yes _____ No _____

Comments:

6. Identify the programming techniques applied throughout the program.

- 1.
- 2.
- 3.
- 4.
- 5.

7. Comment on whether you consider the technique applied appropriate for the learning functions treated.

- 1.
- 2.
- 3.
- 4.
- 5.

8. Describe the design, characteristics, and medium of the program and indicate if you think they are appropriate.

9. Express your assessment of the writing style--commenting on strengths and weaknesses.

10. Did the program/author hold your interest?

Yes _____ No _____

Comments:

EVALUATION SHEET

Please complete and turn in this sheet at the completion of the workshop session for which this unit was assigned. Your reactions and constructive suggestions are important for the evaluation and revision of this material. The response should be anonymous. Indicate the title of the unit in this space: _____

Lesson number: _____

Learning Achievement:

Please estimate your relative progress in accomplishing stated achievement objectives for this unit.. Indicate before and after levels of 1) SUBJECT MATTER KNOWLEDGE, and 2) ANALYTIC AND PROCESS SKILLS. Circle the number that most closely corresponds with your achievement level, e.g.

7 6 5 (4) 3 2 1

SUBJECT MATTER KNOWLEDGE:

<u>BEFORE</u>	Knowledgeable	7	6	5	4	3	2	1	not knowledgeable
<u>AFTER</u>	Knowledgeable	7	6	5	4	3	2	1	not knowledgeable

PROCESS SKILLS:

<u>BEFORE</u>	Knowledgeable	7	6	5	4	3	2	1	Not Knowledgeable
<u>AFTER</u>	Knowledgeable	7	6	5	4	3	2	1	Not Knowledgeable

Usefulness of Self-Instructional Format For Enhancing Learning:

Please assess the series of learning steps in this unit regarding their relative number, difficulty, time requirements for completing, and general helpfulness for enhancing your learning.

MANY	7	6	5	4	3	2	1	FEW
DIFFICULT	7	6	5	4	3	2	1	EASY
LONG	7	6	5	4	3	2	1	SHORT
HELPFUL	7	6	5	4	3	2	1	NOT HELPFUL

Use back of sheet for other suggestions for the resource information, practice or feedback of a particular step.

Interest/Motivation/Enjoyment Level:

Please indicate how you reacted to the unit as a whole regarding the general attractiveness of the format, content, ease of reading, content and illustrations:

ATTRACTIVE	7	6	5	4	3	2	1	NOT ATTRACTIVE
SUBSTANTIAL	7	6	5	4	3	2	1	NOT SUBSTANTIAL (content)

EVALUATION

I. Title _____

Author _____

Target Audience _____

Estimated Working Time _____

Materials in Package (worksheets, slides, charts, etc.)

II. Are there any relevant portions of the learning module which are not mentioned in the objectives or sub-objectives?

YES NO

If YES, please specify the portion.

III. Is the learning module:

	YES	NO
a. Suitable for intended audience?	_____	_____
b. Clear, precise, to the point?	_____	_____
c. Make appropriate use of figures, diagrams, slides, etc.?	_____	_____
d. Accurate and authentic?	_____	_____
e. Organized?	_____	_____
f. Interesting?	_____	_____
g. Comprehensive presentation of material to meet objective?	_____	_____
h. Contain the information necessary to answer <u>all</u> the post-test items?	_____	_____
i. Sequenced from simple to complex?	_____	_____

If you checked NO to any of the above items, please specify why.

IV. Are there clear statements of what the learner can do after successfully completing the package?

YES NO

V. Is frequent practice given?

YES NO

VI. Is there an overall review frame?

YES NO

VII. Please comment on any other aspects of the learning module, objectives or post-test items, that you feel might be relevant for adequate revision, e.g.,

Is the mode of presentation the most appropriate?

THANK YOU.

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EVALUATION FORM
Programmed Instruction

Title _____

1. Does the program confirm the learners' response?
2. Is the instruction sequenced from simple to complex?
3. Is the programming technique appropriate for the learning function being treated?
4. Is the "critical idea" principle applied to the structuring of program frames?
5. Is there evidence of over prompting? If your answer is yes, briefly describe the nature of the over prompting.
6. Is the display format suitable from a perceptual point of view?
7. If panels are used, do they serve a prompting function?
8. Did the program hold your interest?

On the scale presented below, rate the program by placing a check mark at any point along the continuum.

Poor

Good

Excellent

Your comments:

Evaluation Sheet

It is hoped that you would be willing to evaluate the effectiveness of the instruction, concerning how you liked it, any criticisms you might have, and any suggestions for improvement that you may have.

Did you find the package boring _____, interesting _____, easy _____, hard _____.

Comments:

Were there any parts or sections that you found irrelevant? Would you like to"

Did the illustrations help your understanding, or did you not pay much attention for

Comments:

This package was designed as part of a larger package which is to be used both e? seas. Do you have any comments about the cross-cultural aspects of the packag

Comments:

NAME: _____

VALIDATION OPINIONNAIRE

1. Which unit (section, lesson, segment) did you find to be the most informative?
2. Least informative?
3. What was your general reaction to the instructional materials?
4. Do you feel the textual material was presented clearly?
5. Do you feel the textual material was too easy (too hard) to read?
6. Do you feel the illustrations were helpful in keeping your attention, aiding in learning?
7. Were the questions consistent with the textual material (audiovisual)?
8. Were the questions too easy (too difficult)?
9. How would you improve the program?
10. Did you have enough time (too much time) to complete the program?

EXHIBIT 6.2

ITEM ANALYSIS FORM

NAME	PRETEST		POSTTEST		L.GAIN		1			2			3			4			5			6			7			8			9			10			11			12			13			14		
	S	%	S	%	S	%	Pr	E	Po	Pr	E	Po	Pr	E	Po	Pr	E	Po	Pr	E	Po	Pr	E	Po	Pr	E	Po	Pr	E	Po																		
Brown	5	20	20	80	15	60	X	✓	X	X	✓	X	X					X		X	✓	X	X	✓	X			X		X						X		X		X		X						
Haynes	6	24	22	88	16	64	X			X		X						X		X	✓	X	X		X		X		X		X							X		X		X						
Jones	5	20	23	92	17	68	X	✓		X	✓	X		X	X		X		X		X	✓	X	X		X		X		X								X		X		X						
Malove	8	32	22	88	14	56	X	✓		X		X					X		X	✓	X	X		X		X		X		X										X		X						
Martin	2	8	21	84	19	76	X			X		X					X		X		X	✓	X	X		X		X		X									X	✓	X		X					
Newman	15	60	17	68	2	8	X	✓	X	X	✓	X	X	X	X		X		X		X	✓	X	X	✓	X		X		X		X																
Olsen	7	28	21	84	14	56	X	✓	X	X		X				X		X		X		X		X		X		X		X											X		X		X			
Smith	10	40	20	80	10	40	X	✓	X	X	✓	X	X				X		X		X	✓	X		X		X		X														X		X			
Stone	3	12	23	92	20	80	X			X	✓	X				X		X		X	✓	X	X		X		X		X											X	✓	X		X				
Watson	4	16	22	88	18	72	X	✓		X		X				X		X		X	✓	X	X		X		X		X											X		X		X				
Total	6.5	26	211	84	145	58	10	7	4	10	5	3	10	1	2	0	0	8	1	1	10	3	2	10	8	10	5	0	0	10	0	0	10	0	0	1	0	0	6	3	0	10	0	0	10	0	0	

X = Items answered incorrectly
 ✓ = Embedded items answered incorrectly
 % = Percentage
 Pr = Pretest

E = Embedded question
 S = Score
 Po = Posttest
 L.Gain = Learning Gain (Posttest less Pretest score)

NOTE: Page 2, 3, etc. would contain the remaining items.

WORKBOOK OPINIONNAIRE

Directions: Please check your response to each of the following questions. Space is provided for any comments which you feel might be helpful in revision and further development of these materials.

Thank you for your cooperation.

- | | YES | NO |
|---|-------|-------|
| 1. Did you feel that the text material was clearly presented?
Comments: _____ | _____ | _____ |
| 2. Did you feel that the text material was too elementary?
Comments: _____ | _____ | _____ |
| 3. Did you feel that the illustrations were helpful?
Comments: _____ | _____ | _____ |
| 4. Did you answer all of the self-test questions on the Worksheet?
Comments: _____ | _____ | _____ |
| 5. Did you "guess" answers to some self-test questions?
Comments: _____ | _____ | _____ |

The following types of questions might also be used in the same format as on the Workbook Opinionnaire:

- | | YES | NO |
|---|-------|-------|
| 6. Were the self-test questions clearly stated?
Comments: _____ | _____ | _____ |
| 7. Were the self-test answer choices clearly stated?
Comments: _____ | _____ | _____ |
| 8. Did you miss any of the self-test questions?
Comments: _____ | _____ | _____ |
| 9. If you missed any self-test questions, did you then review the text material?
Comments: _____ | _____ | _____ |
| 10. If you missed a question and then reviewed the text material, did you find the information you needed?
Comments: _____ | _____ | _____ |
| 11. Did you feel that the directions given were easy to follow?
Comments: _____ | _____ | _____ |
| 12. Did you feel that the self-test questions helped prepare you to do a better job on the posttest?
Comments: _____ | _____ | _____ |

SECTION 12

RECOMMENDATIONS FOR FURTHER REVISION OF THE FOUR-SELF-
INSTRUCTIONAL MODULES BEFORE FIELD-TESTING

RECOMMENDATIONS FOR FUTURE CURRICULUM REVISION

The success or failure of the Curriculum Revision Workshop is probably not a clear or relevant issue, although the reasons that make it an irrelevant issue should certainly be a subject for careful and thorough analysis. It is not the purpose of this report to pursue this analysis but rather to recommend a direction of thought and a conceptual framework for decision making on the curriculum revision itself that should be useful regardless of which instructional methodology is finally selected. In other words, this report will address the question: "What does one do next in this curriculum revision project?"

This report will describe four basic recommendations for the curriculum revision project based on the events, experiences, and discussions of the past 3½ weeks. It is hoped that these recommendations will help resolve some of the problems that seem to exist at this time. Following is a list of the four recommendations. The rest of the report will elaborate on how to implement each one.

1. Clarify the terms "curriculum" and "revision" so everyone involved will be working from the same basic assumptions.
2. Reach a mutual understanding on the nature and scope of the revision.
3. Clarify the goals of the revision as much as possible so there can be some concrete guidelines.
4. Devise a systematic framework for the revision process to help organize the revision task and to facilitate decision making.

1. CLARIFICATION OF TERMS

There seems to be a basic misunderstanding of the two terms, "curriculum" and "revision". This is not just a point of semantics but rather an issue with implications for the whole project. "Curriculum" in this instance should denote the entire training process for the medical technician including all three phases: the classroom phase, the hospital phase, and the field phase. The three phases seem to be, or certainly should be, interrelated. Therefore, with any revision one should look at the entire curriculum as changes in one phase will certainly have implications for the other two phases. The written course material is one segment of the curriculum and should be viewed in this context. The misunderstanding seems to be on whether in fact the entire curriculum is to be revised or just small sections of the written course.

"Revision" is the term which seems to be the base of many misunderstanding during the entire workshop. "Revision" means too many things if it isn't given some specific parameters. It is important for the future that all people involved in the project have the same sense of the word & what it specifically involves.

2. NATURE AND SCOPE OF REVISION

Revision is a process that can range from simple changes and deletions of content to a complete restructuring of content and methodology. It is absolutely essential that some agreement be reached on the exact nature and scope of the revision project. In other words, which parts of the curriculum are to be revised and to what extent are they to be revised?

Basically the issue that still needs to be resolved is whether the written course material of the MT curriculum should ^{be} significantly revised and restructured around key health issues and whether the methodology of the written content should be self-instructional. There are certain constraints that may influence any decision such as time & personnel resources and national accreditation requirements for the training program. But regardless of whether the revision is moderate or substantial, some mutual understanding among concerned parties must be reached before proceeding with this project.

3. GOALS OF REVISION

Without goals for the total revision project, there are no guidelines for working on individual sections of the revision. In this project, goals can be influenced by a variety of inputs: (1) some general approximation of the MT's job responsibilities over the next five or ten years, or at least a skill (or competency) listing which excludes those specific duties which the MT has not or should not be asked to perform and which includes duties the MT is or should be doing but has not received formal training to do; (2) the information of the base line survey on basic health needs; (3) the amount of curriculum change the system can bear and will accept; (4) problems & needs in the present MT program that can be addressed by training; and (5) material and staff resources. Certainly there may be other information to consider, but these five seem essential to consider. The point is to set goals which have been carefully thought out and mutually agreed upon.

4. A SYSTEMATIC PROCESS

Following is an outline of a systematic approach to developing/ revising curriculum. It is not included here as an academic exercise

but to suggest a framework or context in which to view the tasks of curriculum or course revision. Hopefully this process will aid in clarifying what has been done and what needs to be done.

Stages in Designing Curriculum

CURRICULUM LEVEL

1. Analyze needs, goals, and priorities
2. Analyze resources, constraints, and alternate delivery systems
3. Determine the scope and sequence of the curriculum and the courses (i.e., all phases of the training)

COURSE LEVEL

4. Determine the course structure and sequence
5. Analyze course objectives

LESSON LEVEL

6. Define performance objectives for each lesson, unit or module
7. Prepare lessons or modules
8. Develop and select educational materials, media
9. Assess student performance

A Note of Caution: If it is finally decided that the nature of the revision is to be a modest revision of the present written course material, it is recommended that this revision be done carefully and systematically, taking into account fully the structure & organization of the material and the integrated content. There is no quick and easy revision process.

The recommendations outlined in this report may be phased in an academic manner but actually they are simple, straight forward considerations for planning which will make the successive stages easier and which will give the project staff (ABES workers, consultants, etc.) clear direction and guidelines for working efficiently and effectively. If these issues are not addressed in some fashion, there may be a lot of conscientious time and effort expended with results that may not be effective or even usable.

SECTION 13

RECOMMENDATIONS FOR DEVELOPMENT A FRAMEWORK
FOR CURRICULUM REVISION

Recommendations for Additional Revision of the Four Self-Instructional Modules Before Field Testing

Four self-instructional modules were produced at the Curriculum Revision Workshop: "Prenatal Care," "Community Health," "Malaria," and "Cardio-Pulmonary Resuscitation." The purpose of this report is to summarize briefly the revision work which has been done on these four modules and to recommend additional revision tasks which are necessary before the modules are field tested.

After the workshop, this consultant and the two ABES editors, Mrs. Zohraa Rahman and Mrs. Najma Faruki, spent approximately four days arranging the content of the modules into a consistent format and editing the content for clarity as well as for punctuation, spelling, and sentence structure. The ABES editors were asked to review and edit each module by:

1. checking spelling, sentence structure, and punctuation
2. editing lists to assure that the phrase structure is parallel
3. adding subheadings to clarify topics and to highlight the sequence of the content
4. writing simple organizing sentences and paragraphs where there were too many strings of lists and at the beginning and ending of sections for clarity and continuity
5. reviewing the "question" sections of each module to make sure the answers to the questions could be found easily within the text

Both of the ABES editors are very thorough and competent in their work. By Sunday, March 4, the editors should have had time to review at least three out of the four modules, but they will probably need additional time to review the fourth module ("Malaria"), and to make sure that the elements of the format are consistent throughout all four modules. At some point in the revision process, all four modules will need to be retyped in a standard format.

After this initial editing of the rough drafts for format consistency and content clarity, the four modules must be reviewed for the following: (1) internal consistency; (2) integrity and relevance of the objectives; and (3) medical validity. This review and revision should take place before any initial field testing. A person with good conceptual skills and a medical background in these four areas could complete this revision in two days.

Internal consistency simply means that within each module, there should be a logical and strict correlation of the objectives, the text, and the test questions. A review of the integrity and relevance of the objectives involves a content assessment to find out if any concepts or facts need to be added or excluded. A review of the medical validity includes an assessment of the present content for correctness in the sense that the learner has all the information he/she needs to perform each specific objective and that this information is medically correct.

WORKBOOK

CRITERION PERFORMANCE TESTS

- | WORKBOOK | CRITERION PERFORMANCE TESTS |
|---------------------------------------|---|
| 1. Behavioral Task Analysis | Do a Task Analysis
Do a Behavioral Analysis |
| 2. Criterion Test Items | Construct criterion-referenced tests |
| 3. Learning Hierarchies and Modules | Construct Learning Hierarchies
Design Instructional Modules
Construct Course Outlines |
| 4. Selecting Instructional Strategies | Select appropriate, alternate instructional strategies |
| 5. Selecting Media and Materials | Select appropriate media
Select appropriate off-the-shelf materials |
| 6. Developing Instructional Materials | Develop script/storyboard
Develop progress reviews
Develop interactive capacity |
| 7. Validation | Validate instructional materials to a 90/90 level |

TASK ANALYSIS

TASK
NUMBER

TASK

CRITERION

LEARNING
TIME
ESTIMATE

TASK NUMBER	TASK	CRITERION	LEARNING TIME ESTIMATE

CONSTRUCT TASK ANALYSIS

GUIDELINES

- 1.0 Perform a Behavioral Task Analysis
- 1.1 Construct a Task Analysis
 - 1.1.1 List each major task to be performed
 - 1.1.1.1 List sub- (sub-) tasks needed to perform major tasks
 - 1.1.1.2 Stop task and subtask analysis at the point at which learning begins
 - 1.1.1.3 Identify prerequisite
 - 1.1.2 List tasks in performance sequence
 - 1.1.3 Use suggested numbering system: 1.0, 1.1, 1.1.1, etc.
 - 1.1.3.1 Do not indent numbers
 - 1.1.3.2 Indent subtasks
 - 1.1.4 Establish criterion
 - 1.1.4.1 Determine level of accuracy needed to perform task(s) = 90-100%
 - 1.1.4.1.1 Use 100% to indicate absolute **NEED TO PERFORM** task and subtasks
 - 1.1.4.1.2 Use 90% to indicate some tolerance is allowed in the performance of the task
 - 1.1.5 Estimate learning time
 - 1.1.5.1 Estimate initial learning time for each task and subtask
 - 1.1.5.1.1 Exclude practice time
 - 1.1.5.1.2 Exclude testing time
 - 1.1.5.2 Provide total for major tasks
 - 1.1.6 Begin each task with an **ACTION VERB**
 - 1.1.7 Stop task and subtask analysis at which point learning begins
 - 1.1.7.1 Identify Prerequisites

DEVELOPING INSTRUCTIONAL MATERIALS

GUIDELINES

- 5.0 Develop Instructional Materials
- 5.1 Select one Course Outline (per person)
 - 5.1.1 Identify segments by number from Course Outline and Task Analysis
 - 5.1.2 Write segment number before frame number
- 5.2 Describe task content narratively
 - 5.2.1 Use narrative side of storyboard
 - 5.2.2 Write on thought or sequence of thoughts per frame
- 5.3 Identify visual corresponding to narrative (where necessary); (for workshop purposes, include visual).
 - 5.3.1 Sketch or write words describing desired visual
 - 5.3.1.1 Use stick drawing, graphic, chart, table, etc.
 - 5.3.1.2 Describe photo, original art, etc.
 - 5.3.2 Write NA if no visual is required
 - 5.3.3 Use visual frame for directions
- 5.4 Develop Interactive Capacity (ensure Stimulus — Response — Feedback)
 - 5.4.1 Develop criterion-referenced pretest
 - 5.4.1.1 Prepare criterion test items which measure ALL the tasks included in each of the segments of the module being developed
 - 5.4.1.1.1 Combine tasks and subtasks into one test item where appropriate (see Criterion Test Items Guidelines)
 - 5.4.1.2 Provide Answer Keys
 - 5.4.1.2.1 Provide directions for proceeding
 - 5.4.1.2.1.1 Skip module, if passed pretest
 - 5.4.1.2.1.2 Proceed to module segments, if not passed

- 5.4.2 Develop interim tests (Progress Review Tests)
 - 5.4.2.1 Review progress after several frames of information is provided
 - 5.4.2.1.1 Determine when to include progress reviews:
 - 5.4.2.1.1.1 After several frames of information
 - 5.4.2.1.1.2 Frequently
 - 5.4.2.1.1.3 Avoid too much information before progress reviews
 - 5.4.2.1.1.4 Avoid too frequent progress reviews
 - 5.4.2.1.1.5 Use good judgment
 - 5.4.2.1.1.6 Tailor the size of the information frames to the needs of your target population
 - 5.4.2.1.1.7 Determine the frequency of progress reviews in the simplicity/complexity of the content of the information contained in the segments
 - 5.4.2.2 Use alternate forms of the Pre/Posttest
 - 5.4.2.2.1 Ensure that the interim tests measure the information contained in the segments
 - 5.4.2.2.2 Ensure that the interim tests correspond to Pre/Posttests
 - 5.4.2.2.2.1 Review Behavioral Analysis requirements
 - 5.4.2.2.2.1.1 Ensure tests are developed at appropriate levels required by tasks to be performed (See Behavioral Analysis)
 - 5.4.2.2.3 Revise alternatives (distractor, in multiple choice or matching test items)
 - 5.4.2.2.4 Revise stems of multiple choice or matching test items
 - 5.4.2.2.5 Revise completion items
 - 5.4.2.2.5.1 Change word(s) to be filled in

- 5.4.2.2.6 Revise essay items
- 5.4.2.2.6.1 Request alternate definitions
- 5.4.2.2.7 Revise problem-solving items
- 5.4.2.2.7.1 Provide new data for case studies
- 5.4.2.2.7.2 Provide alternate practice items and problems
- 5.4.2.3 Build interim tests into the visual portion of storyboard
- 5.4.2.3.1 Put the questions on the visuals:
 - 5.4.2.3.1.1 Slides
 - 5.4.2.3.1.2 Overhead transparencies
 - 5.4.2.3.1.3 Filmstrip, etc.
- 5.4.2.4 Provide interim tests on handouts, if so desired
- 5.4.2.4.1 Provide directions to stop the tape, program, etc.
- 5.4.2.4.2 Instruct viewers (trainees) to proceed to complete the progress review in the handout, workbook, etc.
- 5.4.2.4.3 Provide instructions to trainees to check their own answers
- 5.4.2.4.3.1 Turn tape back on
- 5.4.2.4.3.2 Turn to separate page in handout, workbook
- 5.4.2.4.3.3 Consult instructor
- 5.4.2.4.3.4 Etc.
- 5.4.2.5 Provide answers to Progress Review
- 5.4.2.5.1 Provide separate Answer Keys
- 5.4.2.5.2 Include answers on visuals, if questions are on visuals
- 5.4.2.5.2.1 Provide answers in frame(s) following interim test items (Progress Review)

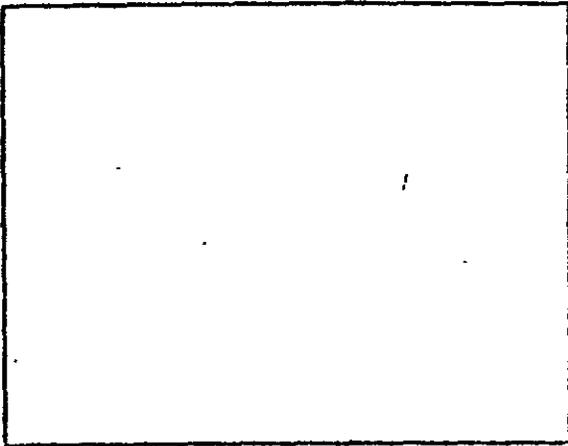
- 5.4.2.5.2.2 Repeat the interim test or Progress Review test item showing the correct answer:
- 5.4.2.5.2.2.1 Circle
 - 5.4.2.5.2.2.2 Underline
 - 5.4.2.5.2.2.3 Use different color
 - 5.4.2.5.2.2.4 Provide label
 - 5.4.2.5.2.2.5 Complete the drawing
 - 5.4.2.5.2.2.6 Etc.
- 5.4.3 Develop criterion-referenced posttest
- 5.4.3.1 Determine whether to use the same (identical) test as pretest
 - 5.4.3.1.1 Use where pretest is at least ten (10) items
 - 5.4.3.1.2 Use where pretest is relatively complex; i.e., contains problem-solving measures
 - 5.4.3.1.3 Use where ability to memorize is reduced (see 5.4.3.1.2)
 - 5.4.3.2 Determine whether to vary the posttest (i.e., make it different from the pretest)
 - 5.4.3.2.1 Vary when pretest is composed of less than ten (10) items
 - 5.4.3.2.2 Vary when pretest is composed of lower-level cognitive skills; e.g., multiple discrimination and below
 - 5.4.3.2.3 Vary to provide interest
 - 5.4.3.2.3.1 Recognize that the same posttest may become boring
 - 5.4.3.2.4 Recognize, however, that a different posttest does not automatically increase learning or measure better
 - 5.4.3.2.4.1 Recognize the need for concrete, definite reason for varying the posttest (from the pretest)

- 5.4.3.3 Provide Answer Keys to posttest
 - 5.4.3.3.1 Provide directions for self-scoring
 - 5.4.3.3.2 Provide directions where to proceed after completing post-tests
 - 5.4.3.3.2.1 Review segments missed
 - 5.4.3.3.2.2 Proceed to next module
 - 5.4.3.3.2.3 Etc.
- 5.5 Use adjunctive programming techniques, if necessary
 - 5.5.1 Identify existing materials
 - 5.5.2 Review to insure relationship to tasks
 - 5.5.3 Follow Instructional Sequence as dictated by the Learning hierarchy
 - 5.5.4 Develop Interactive Capacity (see 5.4 above)
 - 5.5.5 Identify gaps in existing materials
 - 5.5.6 Develop new materials where needed (see steps 5.1 – 5.4 above)
- 5.6 Obtain approval for scripts and storyboards
- 5.7 Determine AV support needed
- 5.8 Develop Final Presentation
 - 5.8.1 Tape audio/video sequences
 - 5.8.2 Make transparencies of storyboards
 - 5.8.3 Present Instructional Unit to group

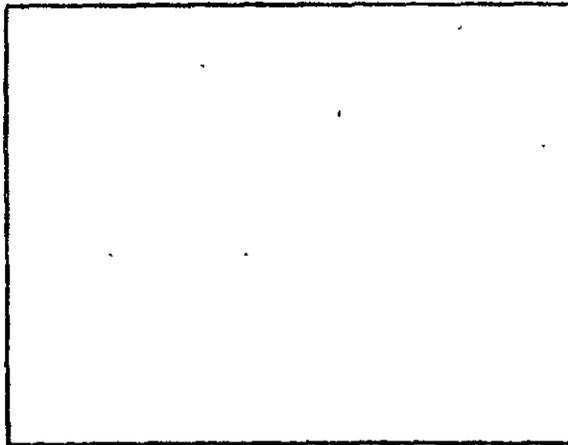
STORYBOARD

VISUAL

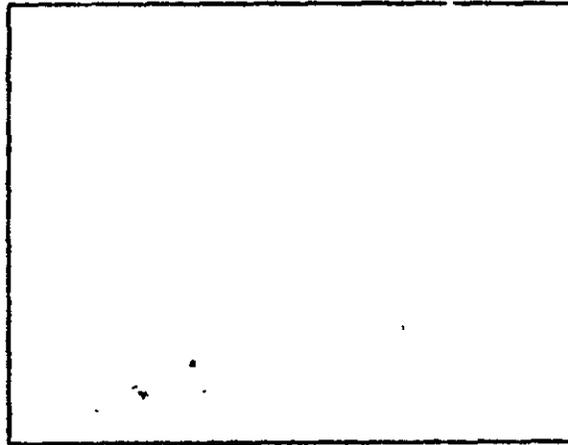
NARRATIVE



TASK NUMBER: _____



TASK NUMBER: _____



TASK NUMBER: _____

MATERIALS DEVELOPMENT CHECKLIST

- _____ 1. Objectives
- _____ 2. Table of Contents
- _____ 3. Pretest
- _____ 4. Pretest Key
- _____ 5. Segments (instructional content)
- _____ 6. Embedded Tests (self-check items)
- _____ 7. Visuals (line drawings, photos, graphs, charts, formulas, etc.)
- _____ 8. Posttest — Paper and Pencil
- _____ 9. Posttest — Performance Checklist
- _____ 10. Posttest Key
- _____ 11. Directions
- _____ 12. Response Sheets
- _____ 13. Glossary (if needed)
- _____ 14. Index of Figures, Charts, etc., (if required)
- _____ 15. Other (specify

SELECT STRATEGIES AND MEDIA

GUIDELINES

- 4.0 Select Instructional Strategies and Media
- 4.1 Recognize **STIMULUS** as the information which the instructor provides to the learner
- 4.2 Recognize **RESPONSE** as that which the instructor actively elicits or collects from the learner
- 4.3 Recognize **FEEDBACK** as that which the instructor provides to the learner based on the learner's response to the initial stimulus
- 4.4 Recognize the **MODE** as the manner in which the information is presented, response elicited, and feedback provided
- 4.5 Recognize **MEDIA** as the resources or means by which information is presented, response elicited, and feedback provided
- 4.6 Recognize **ENVIRONMENT** as the environment in which learning occurs
- 4.7 Identify different **MODES** for presenting information, collecting the response, and providing feedback:
 - 4.7.1 Identify verbal oral mode as the spoken word
 - 4.7.2 Identify verbal written mode as the written or printed word
 - 4.7.3 Identify visual projected mode as visuals or illustrations which are optically or electronically enlarged on a screen
 - 4.7.4 Identify visual printed mode as illustrations printed in a text, workbook, handout, etc.
 - 4.7.5 Identify auditory mode as the requirement to discriminate sounds (such as discriminating sounds in foreign language instruction, discerning the smooth running sound of an engine, etc.)
 - 4.7.5.1 Recognize that auditory does not signify the ability to hear. Hearing may be assumed as a prerequisite skill for many tasks

- 4.7.6 Identify motion mode as the requirement for movement
 - 4.7.6.1 Recognize that many tasks require motion, such as repair of a machine, etc.
 - 4.7.6.2 Recognize that many tasks do not require motion, such as analyzing information, completing a report, filling out a form, etc.
- 4.7.7 Identify color as required for:
 - 4.7.7.1 Designating color-coded objects
 - 4.7.7.2 Enhancement
 - 4.7.7.3 Interest, motivation
 - 4.7.7.4 Highlighting specific points
- 4.8 Identify different MEDIA used to present information, collect the response, and provide feedback
 - 4.8.1 Identify hardware as audiovisual machines and equipment used to convey information, such as:
 - 4.8.1.1 Projectors
 - 4.8.1.2 Screens
 - 4.8.1.3 CAI
 - 4.8.1.4 Models, etc.
 - 4.8.2 Identify software as the materials used to convey information, such as:
 - 4.8.2.1 Printed materials (handouts, flipcharts, etc.)
 - 4.8.2.2 Slides
 - 4.8.2.3 Film
 - 4.8.2.4 Audiotape
 - 4.8.2.5 Videotape
 - 4.8.2.6 Etc.

- 4.8.3 Identify **peopleware** as persons and interpersonal activities used to convey information, such as:
 - 4.8.3.1 Instructor
 - 4.8.3.2 Student
 - 4.8.3.3 Demonstration/performance
 - 4.8.3.4 Role play
 - 4.8.3.5 Discussion
 - 4.8.3.6 Etc

- 4.9 Identify different **ENVIRONMENTS** used to present information, collect the response, and provide feedback
 - 4.9.1 Identify **Classroom (CL)** environment as an instructor-led, group-scheduled strategy
 - 4.9.1.1 Recognize Classroom (CL) environment as one in which the learners proceed at the instructor's pace
 - 4.9.1.2 Recognize classroom (CL) environment as the "lecture" method
 - 4.9.2 Identify **Independent Study (IS)** environment as a learner-centered, learner-oriented strategy
 - 4.9.2.1 Recognize Independent Study (IS) environment as one in which learners proceed at their own pace (rather than the instructor's)
 - 4.9.2.2 Recognize Independent Study (IS) as different from and broader than self-instructional, self-paced training materials
 - 4.9.2.2.1 Recognize Independent Study (IS) as an environment which includes any instructional activities pursued independently by the learners

4.9.3 Identify Skills Labs (SL) as a simulated environment in which learners are allowed to practice their skills under the direction of a trained instructor

4.9.3.1 Recognize the element of control as the key factor distinguishing the skills lab from OJT

4.9.3.1.1 Recognize the instructor as the control agent

4.9.3.1.2 Recognize the laboratory environment as providing control

4.9.3.1.2.1 Recognize control over personal safety

4.9.3.1.2.2 Recognize control over property damage

4.9.3.1.2.3 Recognize the opportunity for learners to make mistakes with impunity

4.9.3.1.2.4 Recognize the opportunity for learners to profit from their mistakes

4.9.4 Identify On-the-Job Training (OJT) environment as one in which learners receive their training at the actual job site

4.9.4.1 Recognize the absence of the control element as in the Skills Lab

4.9.4.1.1 Recognize absence of trained instructor

4.9.4.1.2 Recognize potential of personal safety hazards

4.9.4.1.3 Recognize potential of property damage

4.9.4.1.4 Recognize absence of simulated training devices, such as:

4.9.4.1.4.1 Cutaways

4.9.4.1.4.2 Mock-ups

4.9.4.1.4.3 Models

4.10 Recognize that different tasks require different Stimulus, Response, Feedback modes

4.10.1 Recognize the verbal-oral mode is required by job tasks, such as:

4.10.1.1 Sales

4.10.1.2 Interpersonal activities

4.10.2 Recognize that verbal written mode is required by job tasks, such as:

4.10.2.1 Policies

4.10.2.2 Procedures

4.10.2.3 Directions

4.10.3 Recognize the visual-projected mode is required by job tasks, such as:

4.10.3.1 Operation/repair/maintenance of complicated, expensive equipment or machinery

4.10.4 Recognize that visual-printed mode is required by job tasks, such as:

4.10.4.1 Report writing

4.10.4.2 Accounting/financial management

4.10.5 Recognize that motion mode is required by job tasks, such as:

4.10.5.1 Movement of objects

4.10.5.2 Operation/repair of equipment/machinery

4.10.5.3 Body language

4.10.6 Recognize that auditory mode is required by job tasks, such as:

4.10.6.1 Language instruction

4.10.6.2 Customer complaints

4.10.6.3 Engine repair (sound discrimination)

4.10.7 Recognize that color mode is required by job tasks, such as:

4.10.7.1 Color-coded labeling

4.10.7.2 Painting

4.10.7.3 Photography

4.11 Select Media which correspond to different Mode(s):

4.11.1 For verbal-oral mode select media such as:

4.11.1.1 Instructor

4.11.1.2 Trainee

4.11.1.3 Audiotape

4.11.1.4 Audio portion of film, videotape

4.11.2 For verbal written mode select media such as:

4.11.2.1 Workbook

4.11.2.2 Handout (chart, table, diagram, etc.)

4.11.2.3 Flipchart

4.11.3 For visual projected mode select media such as:

4.11.3.1 Slides

4.11.3.2 Film

4.11.3.3 Video

4.11.3.4 Models

4.11.4 For visual printed mode select media such as:

4.11.4.1 Printed illustrations in workbook

4.11.4.2 Handouts (printed)

4.11.4.3 Photographs

4.11.5 For auditory mode select media such as:

4.11.5.1 Instructor

4.11.5.2 Audiotape

4.11.5.3 Audio portion of film, videotape

4.11.6 For Motion mode select media such as:

4.11.6.1 Instructor demonstration

4.11.6.2 Student performance

4.11.6.3 Film

4.11.6.4 Video

4.11.6.5 Animation

4.11.7 For Color mode select any media

4.11.7.1 Recognize all media have color potential

4.12 Select Environment which corresponds to different mode(s)

4.12.1 For verbal-oral mode select:

4.12.1.1 Classroom

4.12.1.2 Skills Lab

4.12.1.3 Independent Study

4.12.1.4 On-the-Job Training

4.12.2 For verbal written mode select:

4.12.2.1 Independent Study

4.12.3 For visual projected select:

4.12.3.1 Classroom

4.12.3.2 Independent Study

4.12.4 For visual printed select:

4.12.4.1 Independent Study

- 4.12.6 For auditory select:
 - 4.12.6.1 Independent Study
 - 4.12.6.2 Skills Lab
- 4.13 Select Mode, Media and Environment for Stimulus, Response and Feedback
 - 4.13.1 Recognize need to select mode, media and environment to:
 - 4.13.1.1 Present information (Stimulus)
 - 4.13.1.2 Collect response (Response)
 - 4.13.1.3 Provide feedback (Feedback)
 - 4.13.2 Select mode, media, and environment
 - 4.13.2.1 See 4.10, 4.11 and 4.12

STRATEGIES AND MEDIA SELECTION CHART

	STIMULUS			RESPONSE			FEEDBACK		
	MODE	MEDIA	ENVIR	MODE	MEDIA	ENVIR	MODE	MEDIA	ENVIR
MODULE 1									
MODULE 2									
MODULE 3									
MODULE 4									

MODE	MEDIA	ENVIRONMENT
Verbal: Oral Written Visual: Projected Printed Auditory Motion Color	Instructor Demonstration Performance Models Workbooks Film-strip Audiotape Videotape CCTV (Closed Circuit TV) ITV (Instructional TV) ETV (Educational TV) Student Response System Computer Assisted Instruction Role Play Simulation Peer Group Discussion Film Programmed Instruction Micro-teaching Rear Screen Projection	Classroom (CL) Skills Lab (SL) Independent Study (IS) On-the-Job Training (OJT) ESF © 1978 Form 10-22

Sections to be Added to the M.T. Curriculum Revision Project
Report/Evaluation Design (Phase Two)

Section 12: Recommendations for Additional Revision of the Four
Self-Instructional Modules Before Field Testing

Section 13: Recommendations for Future Curriculum Revision

Martha S. Arnold
Charles Ausherman

RECOMMENDATIONS FOR FUTURE CURRICULUM REVISION

The success or failure of the Curriculum Revision Workshop is probably not a clear or relevant issue, although the reasons that make it an irrelevant issue should certainly be a subject for careful and thorough analysis. It is not the purpose of this report to pursue this analysis but rather to recommend a direction of thought and a conceptual framework for decision making on the curriculum revision itself that should be useful regardless of which instructional methodology is finally selected. In other words, this report will address the question: "What does one do next in this curriculum revision project?"

This report will describe four basic recommendations for the curriculum revision project based on the events, experiences, and discussions of the past 3½ weeks. It is hoped that these recommendations will help resolve some of the problems that seem to exist at this time. Following is a list of the four recommendations. The rest of the report will elaborate on how to implement each one.

1. Clarify the terms "curriculum" and "revision" so everyone involved will be working from the same basic assumptions.
2. Reach a mutual understanding on the nature and scope of the revision.
3. Clarify the goals of the revision as much as possible so there can be some concrete guidelines.
4. Devise a systematic framework for the revision process to help organize the revision task and to facilitate decision making.

1. CLARIFICATION OF TERMS

There seems to be a basic misunderstanding of the two terms, "curriculum" and "revision". This is not just a point of semantics but rather an issue with implications for the whole project.

"Curriculum" in this instance should denote the entire training process for the medical technician including all three phases: the classroom phase, the hospital phase, and the field phase. The three phases seem to be, or certainly should be, interrelated. Therefore, with any revision one should look at the entire curriculum as changes in one phase will certainly have implications for the other two phases. The written course material is one segment of the curriculum and should be viewed in this context. The misunderstanding seems to be on whether in fact the entire curriculum is to be revised or just small sections of the written course.

"Revision" is the term which seems to be the base of many misunderstanding during the entire workshop. "Revision" means too many things if it isn't given some specific parameters. It is important for the future that all people involved in the project have the same sense of the word & what it specifically involves.

2. NATURE AND SCOPE OF REVISION

Revision is a process that can range from simple changes and deletions of content to a complete restructuring of content and methodology. It is absolutely essential that some agreement be reached on the exact nature and scope of the revision project. In other words, which parts of the curriculum are to be revised and to what extent are they to be revised?