CHRISTIAN MEDICAL COLLEGE

VELLORE, INDIA

A Proposal for the Development of an Indigenous Health and Family Planning Training System for Village Health Workers in India

May 1979

PURPOSE

The purpose of this protocol is to:

1- State the problem, objectives, procedure, design and evaluation analysis methods for developing a village-level Health Education Training System in India.

2- Describe the process whereby pilot projects in programmed learning already underway will activate broad scale programs for training community-based health workers in India.

This project will utilize U.S. Agency for International Development, International Committee for Applied Research in Population, and Church World Service supported studies which prepared and tested pilot materials and identified factors affecting learning among community health workers using programmed learning materials in six (6) Asian training programs. Through village level applications, and careful analyses of their effectiveness, these simplified indigenously-prepared materials will be continuously improved in contemplation of large scale reproduction (hundreds of thousands) and utilization by para-professionals and sub-professionals at the village level. The effectiveness criterion for this health education project is demonstrated know-how of trainees in their local environment.

INTRODUCTION

Continuing education in health programs requires the periodic upgrading of skills. The need is even more apparent among widely-dispersed health workers. This project seeks to build on the response of health workers in South Asia and specifically in India to the use of self-instructional materials among rural health workers in need of in-service training which has been conducted by Dr. Charles Ausherman in pilot projects in India, the Philippines, Taiwan, Bangladesh and in Calcutta-Bombay-New Delhi, India, and Sri Lanka.

Particular emphasis was given in those studies to those who for various reasons, such as expense and inconvenience of travel to training centers cannot return to formal classroom settings to receive additional educational training. It is suggested that this problem relates to a wide variety of related workers, nationwide, who seek to upgrade their skills as new knowledge in their respective field expands exponentially. A specific concern of these studies was the relationship of learner attitudes on curriculum content and format to learning achievement. The focus of this research increasingly became centered on the application of indigenous self-instructional training systems for village level health workers.

RELATED RESEARCH

To meet in-service training needs, self-instructional approaches have been utilized in a wide variety of settings. It has been asserted that self-instruction is just as effective as traditional teaching. Self-instructional teaching in certain situations has been shown to be both effective and efficient by several users and researchers. Xerox Basic Systems, Inc. estimates that programmed instruction can reduce learning time by 30% to 50%. The University of Florida School of Medicine documents a 50% reduction in acquisition time and no reduction in retention using self-instruction.*

*Stevens, C. B., Enzor, M., Phillips, T., Small, P. A., "An Evaluation of Self-Instructional Package on Amino Acid Chemistry," Journal of Medical Education, 48:276-279, 1973.

Some researchers have measured the effectiveness of initial uses of self-instruction in the population field. Mullins and Perkin found that among Nurses in Thailand engaged in programmed learning about contraceptive technology, scores for units on the Loop showed an average of 36% comprehension on the pretest and 80% on the post-test while midwives scored 20% of the pre-test and 70% on the post-test. In a unit on oral pills, the nurses improved from 37% on the pre-test to 85% on the post-test and midwives from 17% on the pre-test to 81% on the post-test.*

Until recently programmed instruction in the Philippines has primarily been for remedial purposes and generally limited to undergraduate courses at the college level. There was skepticism among some educators concerning (1) the adaptability of self-instructional materials to biomedical topics and (2) the acceptability of self-instructional materials by professsional and para-subprofessionals. Some questioned the acceptability of self-instruction in a group-oriented culture. A nationwide study on the use of programmed learning in the health sciences conducted in the Philippines by the Population Center Foundation and the University of North Carolina revealed that programmed learning can save up to 50% in learning time and costs with almost all subjects preferring this method of training.

The purpose of this project is to apply the findings of research in six Asian studies which tested the relative effectiveness and efficiency of self-instruction in village-level worker training programs in Asia. Three findings have been identified as specifically beneficial for large-scale training programs for village-level health workers in India.

(1) Indigenously produced self-instructional materials enable novices in a particular content area to become masters of that specific content area in a variety of settings (for example, rural settings as compared with those learners working in urban settings).

(2) Self-instructional learning modules cut time and costs of training programs by over 50% among rural health workers.

(3) Village health workers consistently state a preference for indigenously produced self-instruction materials over previously used training programs using lectures as the sole or dominant method of training.

*Mullins, C. and Perkin, G.W., "The Use of Programmed Instruction in Family Planning Training Programs: A Preliminary Report," Studies in Family Planning, The Population Council, 1969).

OTHER RESEARCH FINDINGS

1. Programmed le modules increased the level of information among novices such t hey can perform at a satisfactory level on a knowledge recall test in iven subject area.
2. There was no si ificant difference in total achievement scores between learners from rural and urban areas.
3. There was no significant difference between learners with positive and negative attidues on learning content.
4. There was no significant difference between learners with positive and negative attitudes on programmed learning format.
5. There was no significant difference in total achievement scores between groups, i.e. professionals and para-professionals in specific health content areas.

RESEARCH DESIGN

The logistics of training large numbers of persons through training sessions is a formidable problem anywhere, particularly for health worker trainees. Hence, knowing what can be expected for indigenously produced self-instructional materials is of crucial importance. It was necessary to consider as separate those personnel who could be relatively easily reached by training sessions and may perform differently than persons who could not be reached readily by training sessions.

The study population was provided by actual training programs from government and several private organizations in each country. It was, of course, recognized that this training was likely to provide samples that are less than completely r esentative of all health workers working in Asia. In practice, however, th ining was inclusive of all rural health workers who could be reasonably d by any form of training program. Subjects in each of the test groups w signed in a manner which assured equality on such variables as educati ographic location of practice, prior training, and number of years of e ce.* Thus, the possible effects of these variables

*The selection crit those eligible for training was established by the Ministry of Health etically our sample was representative of all health worker candidates ning in a typical training program.

were controlled and verified through use of analysis of covariance procedures. The total sample size in each country was 200.

The testing site for those groups receiving self-instruction in a training setting was under the auspices of local or regional organizations involved with training of rural health workers.

It is to be noted that some of these organizations did not have their own training facilities, and it was necessary to utilize a variety of different training settings as expedients. Only organizations which were approved as training sites by the national government were contacted and requested to participate in these studies.

DETAILED WORK PLAN ON IMPLEMENTATION OF HEALTH EDUCATION AND LOCALIZED TRAINING SYSTEMS (HEALTS)

Instrument Construction

A needs assessment of the learners will be conducted and carefully analyzed, in order to define clearly the specific needs of the home area(s) of the class. Objectives for each needs-responsive self-instructional package will be drawn from the assessment. Each package (module) will be designed by professionals in collaboration with the educational programmers to assure and to test learning gains and effectiveness of the materials in relationship to the objectives of each self-instructional module. The self-instructional packages and testing instruments will be pre-tested to check for validity. Necessary changes will be made prior to reproduction of the modules. (The previously referenced pilot work has yielded extensive products/experience. Sample instruments and sample modules are available from System Sciences, Inc.)

Test instruments will be constructed with the assistance of faculty who are experienced trainers in the fields of sanitation, nutrition, communicable diseases, and minor medical care, and other health education subjects.* Following a judgemental approach to content validity, the faculty and the investigator will measure specific outcomes of instruction as defined by instructional objectives. These objectives will be measured against criterion tasks performed by operational staff in health programs. An item analysis will be conducted. Test instruments will be tested for reliability in a field test. Pre-test and post-tests will be administered by designated staff trained for this project.

Evaluation Data Analysis

The analysis can be more easily grasped with reference to Table 1 which summarizes in a schematic way the kinds of data collection envisioned. The methodology for analysis of data will be analysis of variance, correlation analysis, or where appropriate, non-parametric equivalents.

*The subject area content of the modules is described in the World Health Organization's Primary Health Worker Working Guide, WHO, 1977, Geneva, Switzerland.

Essentially, the evaluation design devolves itself into a test of effectiveness of the modules with rural health workers having secondary school education and of the modules with rural health workers having primary school education. It will also be possible to examine the effectiveness of self-administered self-instruction as enrichment for existing training programs among those for whom training sessions are feasible.

Evaluation Method

The minimum number of subjects to be used in this evaluation will consist of approximately 200 trainees.

THE FOLLOWING EVALUATION GUIDE-OUTLINE AND INSTRUCTIONS WILL BE ADAPTED TO EACH LOCAL PROJECT SITUATION. THIS MATERIAL, PAGES 8-56, IS OFFERED AS AN EXAMPLE OF ONE SPECIFIC NATIONAL EVALUATION AND MAY BE TOO EXTENSIVE FOR A STATE-WIDE PROGRAM OR ANOTHER LOCALE. A TYPICAL PROVINCE-WIDE PROGRAM WILL UTILIZE CAREFULLY SELECTED VARIABLES WHICH ARE REPRESENTED IN THIS EVALUATION GUIDE.

PREMISES CONCERNING THIS EVALUATION

It is anticipated that this evaluation will find that:

1. Locale of practice makes no significant difference to knowledge acquisition.
2. Difference in attitudes will not be due to locale or educational level.
3. Scores will be related to interest, length, understanding, applicability (of content) and characteristics of programmed learning.

TABLE I

ESTIMATED DISTRIBUTION OF SUBJECTS (O_1 X O_2)

	Rural	Urban
S.I.	50	50
Primary	Total	Total
S.I.	50	50
Secondary	Total	Total

N= 100 (4 X 50 = 200)
Estimated distribution at test sites

Test Sites:

A = 100 (Location 1.)

B = 100 (Location 2.)

Total N = 200

INSTRUCTIONS FOR TRAINERS

How to Administer the Module

STEP 1. Before you distribute a module, read Card A.

STEP 2. Distribute the envelopes with the modules and tell them to bring the module out but not to open them until you give the signal.

STEP 3. When everybody has the module in front of them, say "O.K., you can begin. When you have finished reading the module, submit them to me."

STEP 4. Record starting time.

STEP 5. Record time upon submission.

Card A

Pre-Test

This is a programmed instruction module on _____(TITLE)_____. (Get one and show it to the trainees.) This module is self-instructional. material. This material on ___(TITLE)_____ has a review questionnaire. The purpose of this questionnaire is to assess your learning needs. We wish to know the level of your expertise. This will greatly help us in organizing a better training program to upgrade your skills.

Further, your responses will give us an idea on how we can enhance your learning.

When you're through answering the review questionnaire, go on to the next page and continue reading. You must read every page of this material. Follow what it tells you to do. Happy learning!

Card B

Post-Test

CONGRATULATIONS!

You have just finished going through your modules.

Now we would like to evaluate the effectiveness of the modules. Again, you will receive the same set of review questionnaires. May I remind you that you are not the one being tested. The modules are the ones being tested and tried. We wish to know whether these programmed instruction materials enhanced your learning.

GENERAL INSTRUCTIONS FOR INTERVIEWING

Interviewing is the "pivotal point of the survey sequence." It is the phase when data for the study are gathered. The quality of data, validity and reliability that is monitored during the field work phase will determine the quality and validity of findings and the importance of the research undertaking. It is for this reason that general instructions for interviewing based on the three cardinal rules, i.e., asking questions exactly as they are worded, following the sequence of the questions, and asking every applicable question on the schedule should be followed:

1. Be sure to establish rapport as soon as you enter a dwelling unit. The success of the interview and the reliability of the data depend to a large extent on the quality of rapport established the moment you knock at the door of your prospective respondent. Always try to affect a friendly face.

2. Be thoroughly familiar with the research instrument to avoid interviewing errors and on-the-spot embarrassment. Familiarity with how the questions are worded means ability to ask questions in a conversational manner.

3. Try to preserve a balance between stiff, formal questioning and gabfest. The earlier entails reading off questions and methodologically checking answers, while the latter involves time waste due to long, irrelevant responses.

4. Ask stimulus questions exactly as they are worded. Be absolutely neutral in asking them. Do not elaborate, neither do you suggest an answer or give analogies or examples. It takes very little to encourage a respondent to answer you the way he thinks will please you.

5. Be on the look out for underscored words in the interview schedule. They need to be emphasized.

6. Do not leave an applicable question unanswered. Proceed to the next only when the respondent gives you an adequate answer.

7. Guard against respondent talkativeness. This is not a measure of a good interview.

8. Off-tangent responses may lengthen the time of interview. Wherever possible, keep R on the track without necessarily cutting him off abruptly.

9. Do not accept a DK or NA answer unless 100 percent certain. The DK answer stems from a number of things:

   a. The respondent may not understand the question asked of him.

   b. The respondent, while thinking over the question, says DK to fill in the silence.

   c. The respondent may be trying to evade the issue either because he feels it as too personal, he fears a wrong answer, or he feels he is uninformed.

d. The respondent may not really know the subject asked. It is the interviewer's responsibility to make sure that such is the case.

If the respondent does not want to commit himself, the interviewer should assure him that there are no right or wrong answers and that all answers are confidential.

10. Never give your opinion even when asked to.

11. Try to never interview in the presence of an audience. This could affect the privacy of the interview and lead to data contamination. It may be necessary to resort to techniques such as diverting and side-tracking the outsider, satisfying his curiosity, or getting your respondent to dismiss him.

12. Never interview when you feel very tired. Resultant impatience might cause "leading temptations."

13. Go over the protocol at the end of each interview to ensure that all applicable questions had been asked.

FIELD EDITING

Pointers in interviewer editing:

1. All questions must be accounted for. Each item must be answered even if answers are of the NAP, NA, or DK sort.

   NAP-not applicable. The question need not be asked.
   NA--no answer. The question may have been asked but responses appear irrelevant.
   DK--don't know.

2. Check skip questions. Follow instructions carefully. Skip particular questions when asked to do so.

3. For open-ended questions like questions on attitudes, opinions, judgment, and the like, probe for responses that fall under generalizations.

4. As much as possible, take time to go over your interview schedule at the end of each interview session to check that all pertinent questions have been asked and answered. A return call may prove difficult if not impossible, not to mention the bias which may set in.

5. Edit each interview schedule immediately. In this way, recall will be easier.

6. Avoid erasures. If at all possible, just cross out faulty responses and enter responses on the margin or somewhere in the page.

7. Always aim for accurate, unbiased, valid responses. Avoid recalls especially on attitude questions.

Pointers in team leader editing:

1. Check that all pertinent questions have answer, be they symbols or notes.

2. Check skip questions. They should be marked NAP.

3. Watch out for irrelevant responses. Callbacks may be needed.

4. Look out for open-ended questions. All such questions require probing.

5. If there occurs a pattern of same responses or more than the expected number of DKs and NAs, check on the interviewer's personality. Unless explained otherwise, the interviewer factor may prove harmful to the data. A persistent DK or NA response could mean no probing was exerted by the interviewer. The challenge is to get a reaction.

6. Make comments in pencil on questions that need to be done again due to incomplete answers, lack of sufficient probing, or inconsistency with related questions. Do not erase.

7. Write all numbers that need to be done again on top of the first page of the interview schedule so that the interviewer can locate them.

8. Re-edit and cross out numbers one by one after answers are corrected.

9. If answers are still unsatisfactory, repeat procedure without erasing.

10. Make sure identification codes are written legibly and correctly on the right hand corner of each page of the interview schedule.

11. Initial last page of the interview schedule only after all corrections have been made.

SPOTCHECKING

Pointers in team leader spotchecking:

1. Randomly select a schedule accomplished by each interviewer.

2. Choose five objective questions for each schedule.
(Keep them confidential.)

3. Go back to the person interviewed and ask these five questions. Be sure to write down the answers so there will be basis for comparison.

4. Compare the answers you got with the responses in the completed interview schedule.

5. If these answers are not the same, find out why!

A Study of Programmed Learning for Continuing Education

An Interview Guide

Background

This project is testing the feasibility of using self-instruction for the training of rural level health educators. As a means of upgrading knowledge, attitudes, and skills, providing for uniformity of training and reducing training costs. It involves two phases, namely: the development and production of prototype self-instructional training units and the evaluation of self-instructional modules on such subjects as: family planning, ecommunicable diseases and sanitation.

The Evaluation Study

This project of programmed learning for continuing education in village health is the second phase of the pilot self-instruction project.

A. Objectives

1. To explore the effect of programmed learning among groups in a formal learning situation and among groups in a nonformal learning situation.

2. To explore the influence of demographic and attitudinal variables on the learning effect of the programmed learning modules.

3. To explore the influence of the self-concept variable on the learning ability of the rural health workers in the use of programmed learning materials.

B. Operational Definitions

1. Self-instruction, programmed instruction, programmed learning (these t ms can be used interchangeably). This is instructional material which utilizes the techniques of programmed instruction.

2. Programmed instruction. This is an instructional method which is learner-centered. This method programs the learning of the learner. It consists of a series of learning steps referred to as frames. A frame is a unit of a program that requires a response of the learner. The learner interacts with the programmed instructional material. The material, in turn, contains a built-in feedback of the learner's responses. This maximizes the probability of success in learning.

3. Formal learning situation. In this study, this refers to the inservice training program of the Ministry of Health.

4. Nonformal learning situation. This refers to the area of work of the rural health worker trainees who are not in a training program.

5. Primary school level trainees are those who have attended primary school but have not graduated from secondary school.

6. Trainers. These are training officers who are most actively involved in supervising the training of the trainees during the training course.

7. Trainees. Rural health workers in this training program study.

8. Training personnel. The supervising health personnel who are most involved in training the trainees.

9. Secondary school rural health workers are those trainees who have attended secondary schools (and have graduate from primary schools).

10. Training program. This refers to the training courses offered by the Ministry of Health.

C. Methodology

1. Sample Size. Total N-200
   - 100 Site 1.
   - 100 Site 2.

2. Procedure

Treatment

This project follows up the pilot study of the West Bengal State Government which investigated the effectiveness of self-instructional training materials in baby weighing, sanitation and communicable diseases, for rural health workers at the village level.

Modules produced for this project by health and medical educators will be administered by trainers according to specified guidelines which are found in this document. Interviews will be taken after the subjects complete the last posttest by trained personnel according to guidelines attached. The questionnaire includes demographic and attitudinal data.

Time Table

The demographic and attitudinal data collection should be:

Inclusive dates	Site	No. of types of respondents
	1.	- 100
	2.	100

The above schedule includes the training of interviewers.

Interview Schedule

Language

The schedule for the trainees should be translated into local dialects.

A. The Trainee's Interview Schedule

Block One Interview Situation

Enter the necessary data. For the clinic code under question 5 the respondents' codes of their home base clinics (place of work assignment). All will have been assigned codes.

Qs. 12 and 13 cover interview attempts made. This refer to the effort to contact the respondent and to interview him/her. This does not include appointment visits with the respondents.

Block Two - Demographic Data

This block identifies the respondent in terms of age, civil status, religion, education, and similar other demographic characteristics.

Q. 21 deals with R's propensity to attend religious services. Religious services here does not include attendance to baptism, confirmation, wedding, and other such religious rites.

Q. 23b - Do not fail to ask this question just because R has already obtained a degree as shown in his/her answers to Q.23a. An earlier overall assessment of the respondents demographic characteristics shows that some of them still go to school.

Block Three - Training

This block looks into the background training of the respondents. The results can serve as a possible explanation for certain attitudes they have aside from being able to check on the adequacy of their training form implementing the program. Respondents' attitude for their training certainly affect their attitudes toward the methods used during the training, one of which is the use of self-instructional materials.

Q. 27 - Show Card One

Block Five - World Outlook

This block is intended to tap the worldliness of the respondents by asking their cosmopoliteness (exposure to the urban setting) and their exposure to mass media. It seeks to determine any difference between rural and urban learners particularly in the use of programmed instruction.

Block Seven - Attitude Toward Subject

This block assesses the respondents' interest, motivation, and encouragement levels. From this, we will be able to find whether or not there is a significant difference between learners with positive and negative attitudes on content and programmed learning format.

Qs. 37 and 38 - Show Card Two to R.

Block Eight - Attitude Toward Modules

This block asks a great deal about the modules used by the trainee respondents during their training. Their activities toward the modules affect their total achievement scores.

Q. 42 a - Show Card Three.

Q. 42 c - Read Categories

Block Nine - Application of New Knowledge

Q. 43 a - Show Card Three

Block Ten - Interview Evaluation

This block contains your reactions to the interview situation and your impressions of your respondent.

B. The Trainer's Interview Schedule

Block 1 - Interview Situation

Follow instructions under Block 1 of Trainees' schedule.

Block 2 - Demographic Data

Follow instruction under Block 2 of Trainees' schedule.

Block 3 - Training

Follow instructions under Block 3 of Trainees' schedule.

Block 5 - Attitude Toward Programmed Instruction

Q. 30 - Ask to accomplish pages 10 - 11. Give card two to R.

Block 6 - Attitude Toward Modules

Q. 31 - Note instructions in the interview schedule.

Q. 31 f - Ask R to accomplish page 14. Get back the questionnaire after he/she has answered all items.

Q. 32 - Show the modules one by one. Let R refer to the pages and/or frame which he/she thinks contain irrelevant material.

Q. 34 c and d - Show Card Three.

Q. 36 - Show Card Four.

Block 7 - Training Center Evaluation

Q. 37 - Ask R to accomplish the checklist.

Block 8 - Interview Schedule

Follow instructions under Block 10 of Trainers' schedule.

Answer Cards

CARD ONE

1. Very insufficient
2. Insufficient
3. Sufficient
4. Very sufficient

CARD TWO

1. Strongly disagree
2. Disagree
3. Agree
4. Strongly agree

CARD THREE

1. Not at all useful
2. Not useful
3. Useful
4. Very useful

CARD FOUR

1. Not at all satisfied
2. Somewhat satisfied
3. Satisfied
4. Very much satisfied

WORK PLAN AND TIMETABLE

Stage One
(Six Months)
HEALTH EDUCATION AND LOCALIZED TRAINING SYSTEMS

Programmed Learning Training Project

Activities (See separate Agenda)	Time	Key Manpower Direction
1. Pre-Workshop Planning Initial Activity	3 months	Full Staff
2. Workshop	3 days	Full Staff
3. Revision	11 days	Project Associate Consultants
a) revising and reviewing of pre-tested SI materials b) pre-testing revised SI materials d) final revision d) final editing e) typing final copies		Project Assistant Project Associate Editor Clerk-Typist
4. Printing	21 days	
a) typesetting, proof reading, typing b) paste-up, insert proof corrections c) camera work, blue print, printing, binding	(not needed if mimeographed)	Editor Typesetter Typist Artist
5. Distribution and utilization		
a) deliver to treatment groups b) use of PI modules		
6. Evaluation and revision		
a) QN construction (including pre-testing revision) b) contract evaluation		Project Associate Project Assistant
b.1. training interviewers b.2. data gathering b.3. data processing		Programmer Coders Clerk-typist Secretary
c) data analysis and writing of quarterly reports		

Stage Two
(First Six Months After Workshop)
HEALTH EDUCATION AND LOCALIZED TRAINING SYSTEMS

Work Plan for Programmed Instruction Training Project

	1st month		2nd month		3rd month	4th month		5th month		6th month	
d) Revise Module & Revise Questionnaire	xxxx	xxxx	xxxx	xxxx	xxxx						
e) Site Orientation-listing - Sampling			xxx								
f) Pretest 4 Modules & Questionnaires						xx					
g) Revise Module & Questionnaire						xx					
h) Printing Module & Questionnaire							xxx				
i) Training Supervisor				x							
j) Recruit & Train Interviewers							xx				
k) Administration of the 4 Modules							x				
l) Interviewing & Data Gathering							xx	x			
m) Data Processing)) edit:								xxxx	xxxx	xxxx	xxxx
n) Data Analysis)) coding:								xxxx	xxxx	xxxx	xxxx
										xxxx	xxxx x
7. Preparation of Final Draft Annual Report											x
a) Planning for a 2-3 Year Larger Project										xx	x
b) One-Day Conference to Disseminate Results of Pilot Project											x

Repeat first stage for new content areas.

NOTE: Each "x" indicates one calendar week.

Suggested

LIST OF TABLES FOR EVALUATION REPORT

Table

Table I.

Years of Education	/	Rural	/	Urban

Distribution of subjects (0_1 X 0_2)

Table 2.

Distribution at Test Sites

Test Site	Years of Education A. / Years of Education B. /	Total
1.		
2.		
3.		
4.		
1.		
2.		
3.		
4.		

Table 3.

Test Site	Locational 1 2 3 5 Urban/Rural	Location 2. Urban/Rural 1 2 3 4
Years of Ed. A.		
Years of Ed. B.		

Distribution of Subjects According to Years of Education

and Locale of Work.

Table 4.

Age	Percent	Number of Respondents
20-24		
25-29		
30-34		
35-39		
40-44		
45-50		
Total	100%	200

Subjects According to Age

Table 5.

Group	Ethnolinguistic Group
Indonesian	
Balinese	
Makassar	

Subjects According to Ethnolinguistic Groups

Table 6.

Frequencies of Learning Gain (1 table for each Module)

Test item improvement	Frequenct	Percent

Table 7.

	Years of Ed A.	Years of Ed. B.
	66	
	Pre test (score $\overline{X}$)	Post test ($\overline{X}$ Score)

Number of Correct test items

Pre and Post Test Mean Scores in each Module.

Frequency of Total Learning Gain on All Modules

Table 8.

Test items improvement	Frequency	Percent

BLOCK 1
INTERVIEW SITUATION

1. Respondent type: 1 Primary School graduate
   2 Secondary
   3 Other_____

2. Respondent's name: _____
   Family Name Given

3. R's address (residential): _____
   Town Town/City

   _____
   Province

4. Institutional affiliation: 1 Ministry of Health
   2 Other _____
   3 Government hospital/clinic
   4 Private hospital/clinic
   5 (Specify) _____

5. Clinic/office address: _____
   Town Town/City

   Clinic code: _____ _____
   Province Region

6. R's position/designation _____

7. Length of service in present position: _____

PLEASE NOTE THIS QUESTIONNAIRE IS NOT TO BE USED IN ITS ENTIRETY BUT IS TO GUIDE THE PROJECT DIRECTOR CONCERNING TYPES OF DATA WHICH MAY BE USEFUL IN THE EVALUATION.

8. Interviewer: _____

9. Date of interview: _____

10. Place of interview: _____

11. Language(s) of interview: _____

12. Number of interview attempts made: _____

13. Reason for each attempt: _____
_____
_____

BLOCK 2
DEMOGRAPHIC DATA

14. Date of birth:

When were you born? _____

DERIVE: Age in years _____

15. Place of birth:

Where were you born? FILL IN ALL THAT APPLY. CROSS OUT NAP CATEGORIES

Town	District	City	Province

16. Civil status:

What is your civil status?

1. single
2. married
3. widowed
4. separated

17. Number of children:

a. (If single) when you have a family of your own, how many children would you want? _____
_____Boy(s) _____Girl(s) _____Total

FOR MARRIED R's ONLY

b. When you married, how many children did you wish to have?
_____Boy(s) _____Girl(s) _____Total

c. How many pregnancies did you/your wife have? _____

(PROBE FOR LIVE BIRTHS & STILLBIRTHS) _____

d. How many living children do you have? _____

18. Age at marriage:

FOR MARRIED R's ONLY

a. How old were you when you got married? _____

FOR RESPONDENTS WHO WERE MARRIED MORE THAN ONCE, ASK:

Age at first marriage _____
Age at second marriage _____
Other (specify) _____

FOR SINGLE R's ONLY:

b. If you decide to get married, at what age would you like to get married?

_____

19. Length of marriage: FOR MARRIED R's only. IF R HAS HAD PREVIOUS MARRIAGE(S), ASK LENGTH OF EACH MARRIAGE.

How long have you been married? _____
1st/ 2nd/ 3rd

20. Religion:

What is your religious affiliation? DO NOT READ CATEGORIES.

1. Hindu
2. Muslim
3. Buddist
4. Jain
5. Other (specify) _____

21. Propensity to attend religious services:

How often do you attend religious services?

1. Never
2. Once a year
3. Once a month
4. Twice a month
5. Three times a month
6. Four times a month
7. Five or more times a month but less than daily
8. Daily
9. Other (specify) _____

22. Ethnolinguistic grouping:

What language do you speak most of the time?

1. Hindu
2. Tamil
3. Bengal
4. English
5. Other (specify) _____

23. Educational attainment:

a. What is your highest educational attainment? List all other training experiences in addition to formal schooling.

1.
2.
3.
4.
5.
6.
7.
8. Other (Specify) _____

b. Are you studying at present?

1. Yes
2. No

c. IF YES, ASK: What are you taking up now?

_____

d. IF NO, ASK: How long ago did you complete your last degree?

e. Where and when did you obtain your highest education?

_____
School/College/University Municipality/City

_____
Year Graduated

Block 3

TRAINING

24. OB-GYN Training:

Please enumerate all in-service or other specialized training in OB-GYN. PROBE FOR PLACE, DATE, AND TYPE OF TRAINING. ENTER IN TABULATED FORM.

Place/Institution	Dates Inclusive	Type of Training	Sponsoring Agency

25. Family planning training:

Where and when did you participate in a family planning training course? What type of training did you receive?

ENTER RESPONSES IN TABLE BELOW:

	Place/Institution	Dates Inclusive	Type of Training	Sponsoring Agency
a.				
b.				
c.				
d.				
e.				
f.				
g.				

26. Scope of FP training:

Were you formally trained for:

ENCIRCLE CATEGORIES WHICH BEAR AFFIRMATIVE RESPONSE.

27. Perceived training sufficiency:

EXPLAIN TO THE RESPONDENT THAT ALL RESPONSES WILL BE TREATED IN THE STRICTEST CONFIDENCE.

What do you think about the training methods or approaches used in :

MENTION EACH TYPE OF TRAINING ENUMERATED IN Q25, THEN ASK WHETHER EACH ITEM IS VERY INSUFFICIENT, INSUFFICIENT, SUFFICIENT, OR VERY SUFFICIENT AND WRITE CORRESPONDING CODE UNDER COLUMN TWO. SHOW CARD ONE.

Were they....
1. Very insufficient
2. Insufficient
3. Sufficient
4. Very sufficient

If insufficient, ask:

Why? Write reasons under column three.

	Col. 1 Formal training (cf. Q. 25)	Col. 2 Perceived sufficiency	Col. 3 Reason for insufficiency
a.	_____	_____	_____
b.	_____	_____	_____
c.	_____	_____	_____
d.	_____	_____	_____
e.	_____	_____	_____
f.	_____	_____	_____
g.	_____	_____	_____

28. Motivation to attend last training:

a. How willing were you when you took the course?

1. Not at all willing
2. Not willing
3. Willing
4. Very willing

b. Please explain your answer.

_____

_____

_____

BLOCK 4
SELF-ESTEEM

29. Ask respondent to accomplish Block 4.

Below is a list of statements with which you may agree or disagree. Please indicate on the blank beside the statement your opinion by writing down the appropriate code of the categories shown in CARD TWO.

_____ 1. I feel that I'm a person of worth, at least on an equal plane with others.

_____ 2. I feel that I have a number of good qualities.

_____ 3. All in all, I am inclined to feel that I am a failure.

_____ 4. I am able to do things as well as most other people.

_____ 5. I feel I do not have much to be proud of.

_____ 6. I take a positive attitude toward myself.

_____ 7. On the whole, I am satisfied with myself.

_____ 8. I wish I could have more respect for myself.

_____ 9. I certainly feel useless at times.

_____10. At times, I think I am no good at all.

_____11. I can be comfortable with all varieties of people -- from the highest to the lowest.

_____12. When I'm in a group, I usually don't say much for fear of saying the wrong thing.

_____13. I don't approve of spending time and energy in doing things for other people.

_____14. Because of other people, I haven't been able to achieve as much as I should have.

_____15. I don't approve of doing favors for people. If you're too agreeable, they'll take advantage of you.

_____16. I enjoy doing little favors for people even if I don't know them well.

_____17. I usually ignore the feelings of others when I'm accomplishing some important end.

_____18. I'm very sensitive. People say things and I have a tendency to think they're criticizing me or insulting me in some way and later when I think of it, they may not have meant anything like that at all.

_____19. I try to get people to do what I want them to do, in one way or another.

_____20. I have a tendency to sidestep my problems.

_____21. I enjoy myself most when I'm alone, away from other people.

_____22. I don't feel very normal, but I want to feel normal.

_____23. I feel neither above nor below the people I meet.

_____24. I do not worry or condemn myself if other people pass judgment against me.

_____25. When someone asks for advice about some personal problem, I'm most likely to say, "It's up to you to decide," rather than tell him what he should do.

_____26. I feel confident that I can do something about the problems that may arise in the future.

_____27. I believe that people should get credit for their accomplishments, but I very seldom come across work that deserves praise.

_____28. I'm not afraid of meeting new people. I feel that I'm a worthwhile person and there's no reason why they should dislike me.

_____29. There are very few times when I compliment people for their talents or jobs they've done.

_____30. I look on most of the feelings and impulses I have toward people as being quite natural and acceptable.

_____31. I would rather decide things when they come up than always try to plan ahead.

_____32. I never have any trouble making up my mind about important decisions.

_____33. I have always felt that I have more will power than most people have.

_____34. I seem to be the kind of person that has more bad luck than good luck.

_____35. There's not much use for me to plan ahead because there's usually something that makes me change my plans.

_____36. I nearly always feel pretty sure of myself even when people disagree with me.

30. Occupational satisfaction:

How satisfied are you with your job as a FP worker?
Would you say you are not satisfied, satisfied, or very satisfied?

1. Not satisfied
2. Satisfied
3. Very satisfied

BLOCK 5
WORLD
OUTLOOK

31. Cosmopoliteness:

a. Is your home in an urban or rural setting?

1. Rural area
2. Urban area

b. Is your work in an urban or rural setting?

1. Rural area
2. Urban area

c. IF R LIVES AND WORKS IN AN URBAN AREA, ASK:

Do you go out to the villages to extend your services?

1. Yes
2. No

If no, ask: Why not?

d. IF R LIVES AND WORKS IN A RURAL AREA, ASK:

Do you move around to extend your services? Where? (PROBE FOR EXTENT OF AREA)

How often do you go to the city?

1. Less than once a year
2. Once a year
3. More than once a year but less than once a month
4. Once a month
5. Twice a month
6. Three times a month
7. Four times a month
8. Five or more times a month but less than daily
9. Daily

32. Mass media exposure:

a. How often do you read a:
1) Newspaper? DO NOT READ CATEGORIES.

1. Less than once a year
2. Once a year
3. More than once a year but less than once a month
4. Once a month
5. Twice a month
6. Three times a month
7. Four times a month
8. Five or more times a month but less than daily
9. Daily

2) Magazine? DO NOT READ CATEGORIES.

1. Less than once a year
2. Once a year
3. More than once a year but less than once a month
4. Once a month
5. Twice a month
6. Three times a month
7. Four times a month
8. Five or more times a month but less than daily
9. Daily

b. How often do you obtain news or information from the:
1) Radio? DO NOT READ CATEGORIES.

1. Less than once a year
2. Once a year
3. More than once a year but less than once a month

4. Once a month
5. Twice a month
6. Three times a month
7. Four times a month
8. Five or more times a month but less than daily
9. Daily

2) Television? DO NOT READ CATEGORIES.

1. Less than once a year
2. Once a year
3. More than once a year but less than once a month
4. Once a month
5. Twice a month
6. Three times a month
7. Four times a month
8. Five or more times a month but less than daily
9. Daily

BLOCK 6
ATTITUDE
TOWARD
FP

33. Utilization of FP methods:

a. Are you/Is your spouse using any contraceptive method? What is it? PROBE FOR CONTRACEPTIVE METHOD(S) PRESENTLY USED.

1. Yes
2. No

b. Why do yo prefer (mention contraceptive method used) to other methods?

_____

_____

_____

_____

_____

34. Attitude toward FP strategies:

FOR NURSES AND MIDWIVES ONLY
ASK RESPONDENT TO ACCOMPLISH PAGE 15 GIVE CARD TWO.

Below is a list of statements with which you may agree or disagree. Please indicate whether you strongly disagree, disagree, agree, or strongly agree in each of these statements by writing down appropriate code of the categories shown in CARD TWO.

_____1. Nurses should be trained to prescribe pills to new acceptors.

_____2. Nurses should be trained to insert IUDs.

_____3. Nurses should be trained to remove IUDs.

_____4. Midwives should be trained to prescribe pills to new acceptors.

_____5. Midwives should be trained to insert IUDs.

_____6. Midwives should be trained to remove IUDs.

_____7. Non Allopathic workers should be trained to prescribe pills to new acceptors.

_____8. Non Allopathic workers should be trained to insert IUDs.

_____9. Non Allopathic workers should be trained to remove IUDs.

35. Attitude toward role in FP:

a. Do you think that extending FP services is a load on your regular work?

1. Yes
2. No

b. Please explain your answer.

_____

_____

_____

_____

BLOCK 7
ATTITUDE
TOWARD
SUBJECT

36. Interest/motivation/enjoyment level:

ASK RESPONDENT TO ACCOMPLISH PAGE 17.

Please indicate how you reacted to the module as a whole in terms of your general interest and agreement toward the content of the module by encircling the number that closely corresponds to your opinion.

1. What can you say about the content of the module?

a.	Not substantial	1	2	3	4	5	6	Substantial
b.	Agree with content	1	2	3	4	5	6	Do not agree w/content
c.	Not interesting	1	2	3	4	5	6	Interesting
d.	Not long	1	2	3	4	5	6	Long
e.	Easy to read	1	2	3	4	5	6	Hard to read
f.	Confusing	1	2	3	4	5	6	Not confusing

2. What can you say about the content of the modules?

a.	Not substantial	1	2	3	4	5	6	Substantial
b.	Agree with content	1	2	3	4	5	6	Do not agree w/content
c.	Not interesting	1	2	3	4	5	6	Interesting
d.	Not long	1	2	3	4	5	6	Long
e.	Easy to read	1	2	3	4	5	6	Hard to read
f.	Confusing	1	2	3	4	5	6	Not confusing

3. What more do you want to learn about family planning?

1. Conception process
2. Contraceptive method
3. Both of the above
4. Other (specify)_____

37. <u>Attitude toward the pill</u>:

a. Do you feel oral contraceptives are dangerous to most women's health?
SHOW CARD TWO.

1. Strongly disagree
2. Disagree
3. Agree
4. Strongly agree

b. Please explain your answer.

_____

_____

_____

38. Do you feel IUD is a potential risk to most women's health? SHOW CARD TWO.

1. Strongly disagree
2. Disagree
3. Agree
4. Strongly agree

39. Among the different FP methods, enumerate three which you most likely encourage/recommend your acceptor to adopt. Please rank them accordingly.

1st -

2nd -

3rd -

BLOCK 8
ATTITUDE TOWARDS
MODULES

40. What impressed you most when you were reading a module?

1. Illustrations
2. Series of learning steps
3. Knowing how you fared immediately after answering the questions.

41. Readability and clarity of modules:

a. How many times did you have to read the module before you could understand it?

1. Once
2. Twice
3. Three times
4. More than three times

b. How many times did you have to read the module on_____ before you could understand it?

1. Once
2. Twice
3. Three times
4. More than three times

c. How many times did you have to read the module on _____ before you could understand it?

1. Once
2. Twice
3. Three times
4. More than three times

42. Initial usefulness:

a. Did you find the modules useful during your field-training/practicum? SHOW CARD THREE.

1. Not at all useful
2. Somewhat useful
3. Useful
4. Very useful

b. What particular problems did you encounter during your field-training/practicum which made you refer to your modules?

_____

_____

_____

c. Do you want to keep the modules with you? Do you.....

READ CATEGORIES AND ENCIRCLE THAT WHICH APPLIES.

1. Want to have one copy of each module?
2. Want to have two copies of each module?
3. Want to have several copies of each module?
4. Not read it?
5. Not have intentions of keeping it?

d. Why?

e. Have you ever seen any other self-instructional module before you attended the training course in comprehensive family planning services/physician's course?

1. Yes
2. No

If Yes, ask where? _____

f. Would you recommend the three modules to your co-workers?

1. Yes
2. No

g. Why?

_____

_____

_____

h. In a training program, what do you think would be best for you?

1. the lecture method alone
2. the lecture method followed by group discussions
3. the module alone
4. the module followed by group discussions
5. the module followed by a lecture followed by group discussions
6. the module followed by a lecture followed by group discussions

i. Do you think that receiving self-instructional modules to learn new information on contraceptive methods is sufficient to upgrade your level of expertise?

1. strongly disagree
2. disagree
3. agree
4. strongly disagree

Please explain your answer? _____
_____
_____

j. Do you think that family planning training seminars conflict with your clinic services?

1. yes
2. no

Why? _____
_____
_____

k. Would you recommend limiting the training seminars on family planning provided the modules are sent to the clinics?

1. yes
2. no

Why? _____
_____
_____

BLOCK 9
APPLICATION
OF NEW KNOWLEDGE

43. Field application:

a. Do you believe that what you have learned from your modules would be useful in your future performance as a FP worker?
SHOW CARD THREE

1. Not at all useful
2. Somewhat useful
3. Useful
4. Very useful

b. What you have learned from the modules was... READ CATEGORIES.

1. What you had strongly been eager to learn.
2. What you somewhat wanted to know.
3. What you had not been quite interested in at all.
4. What you had no interest in at all.

c. Do you think the module on the pill will be useful to you when you teach others about oral contraceptives? SHOW CARD THREE.

1. Not at all useful
2. Somewhat useful
3. Useful
4. Very useful

d. Do you think the modules on the IUD will be useful to you when you teach others about the IUD? SHOW CARD THREE.

1. Not at all useful
2. Somewhat useful
3. Useful
4. Very useful

BLOCK 10
INTERVIEW
EVALUATION

(To be accomplished by the interviewer after the interview.)

44. Respondent's attitude toward the interview:

1. Interested
2. Indifferent
3. Hesitant
4. Frightened
5. Inquisitive
6. Suspicious
7. Antagonistic
8. Other (specify) _____

45. Establishment of rapport:

1. Easily established
2. Established but with some difficulty
3. Established despite great difficulty
4. Never established

46. Respondent's pre-interview activity:

_____

_____

_____

47. Other persons present during the interview:

_____

_____

_____

48. Interview conditions:

1. Very noisy and/or with many distractions
2. Some noise and/or distractions
3. Quiet and/or with a minimum of distraction

49. Respondents' health and energy level:

1. Very healthy and energetic
2. Adequately healthy and energetic
3. Sickly and/or lethargic

50. Respondent's verbal skills:

1. More than adequate
2. Adequate
3. Inadequate

51. Respondent's comprehension of interview questions:

1. Understood immediately
2. Some elaboration was necessary
3. Had great difficulty in understanding

52. Interviewing pace:

1. Leisurely
2. Moderate
3. Under considerable time pressure

53. Other impressions:

_____

_____

_____

_____

54. Edited by: _____

55. Spotchecked by: _____

CARD ONE

1. Very insufficient
2. Insufficient
3. Sufficient
4. Very sufficient

CARD TWO

1. Strongly disagree
2. Disagree
3. Agree
4. Strongly agree

CARD THREE

1. Not at all useful
2. Not useful
3. Useful
4. Very useful

CARD FOUR

1. Not at all satisfied
2. Somewhat satisfied
3. Satisified
4. Very much satisfied

HEALTH EDUCATION AND LOCALIZED TRAINING SYSTEMS

Seminar/Workshop on

Programmed Learning for Rural Health Workers

REGISTRATION

Name: _____

Title or Position: _____

_____

School, Faculty or Department: _____

_____

Field of Special Interest: _____

_____

Educational Background: _____

_____

Postal Address: _____

_____

THE ATTACHED REPRESENTS SAMPLES OF MATERIALS USED IN THE PROGRAMMED INSTRUC-TION PORTION OF THE WORKSHOP.

THE AGE OF DISCONTINUITY

by: Peter F. Drucker

Teaching is the only traditional craft in which we have not yet fashioned the tools that make an ordinary person capable of superior performance. In this respect, teaching is far behind medicine where the tools first became available a century or more ago. It is, of course, infinitely behind the mechanical crafts where we have had effective apprenticeship for thousands and thousands of years.

The development of self-instructional, self-testing, easily-understood materials of instruction can be revolutionary. They can break the grip which inflexible requirements of time and place of instruction now hold on schools and colleges. Our present focus of attention is often on the teaching and not on the learner. There can be learning without teaching and teaching without learning. If students learn well, they have been taught well--no matter who taught them or what instructional materials were used.

--Edgar Dale, Editor
The News Letter
March, 1970

Review of Characteristics of Programmed Learning As Compared with Traditional Teaching

Programmed Learning:

1 - Is learner centered NOT teacher dominated.

2 - Contains a clear statement of objectives.

3 - Uses criterion referenced post-tested as evidence of results.

4 - Provides information in sequential-logical small steps which are easier to assimilate.

5 - Is concise (takes less time).

6 - Is individually paced.

7 - Uses any educational method(s) as appropriate to content.

8 - Gives frequent feedback - knowledge of results.

9 - Allows response by students.

10 - Gives reinforcement to learners.

11 - Assures uniform quality control in educational programs.

12 - Is useful when learners are geographically dispersed (no classroom necessary).

13 - Allows teacher time to give to individual learner needs and thus, is more interesting from teacher's point of view.

SEMINAR-WORKSHOP ON PROGRAMMED INSTRUCTION

AN OVERVIEW OF PROGRAMMED INSTRUCTION

Intro-duction

Programmed instruction is the innovation which within the span of only ten years from its formal inception by B. F. Skinner in 1954 spread quickly throughout the world and is predicted to stay.

Varied Forms

From the original linear program of Skinner and the branching program of Crowder were born several concepts of programs such as:

- self-learning units
- self-learning kits
- learning packages
- Unipacs (short for unit packages)

A self-learning unit is a program based on a unit of subject matter.

A self-learning kit is similar to the self-learning unit.

Learning packages are more comprehensive in nature as they include not only programmed units but also slides, filmstrips, and other materials needed to develop a segment of subject matter--all in one package.

Use in New Settings

The rapid adoption of programmed instruction in its varied forms is clearly related to new school organizational set ups or systems such as:

- II - individualized instruction
- IPI - individually prescribed instruction
- CAI - computer progression scheme
- Project IMPACT - instruction managed by parents, adults, community and teachers
- Non-graded school
- Open university
- Mastery learning

Use in several subject fields

Programmed instruction is now utilized in many subject areas. The APLET (Association for Programmed Learning and Educational Technology) Yearbook of Educational and Instructional Technology of 1972-73 lists 52 subject fields among which are:

- education
- industry
- medicine
- economics
- carpentry
- shoe making
- veterinary practice
- religion
- electricity and electronics
- engineering
- geography
- geometry
- mathematics
- languages

Trends

- Programmed instruction in its varied forms has been introduced in many parts of the world. The schools of England use it extensively, not only individually but in consortium among institutions. The Association for Programmed Learning and Educational Technology based in London which includes members from other nations has done a lot to promote programmed learning not only in Great Britain but also in other parts of the world. (A Philippine Chapter was organized in Manila in 1974 after the seminar on Programmed Instruction and Technology sponsored by the German Government and the Carl Duisberg Gesselachaft, Philippines.)

- In the United States, II, IPI, and CAI have spread to many schools and the use of self-learning units, packages and unipacs has likewise increased.

- In the Philippines, the experimental use of self-learning kits has widened from the few pilot schools in Naga, Cebu, Iloilo, Manila, and Bulacan to several schools/divisions. More teachers have been trained to make programs after the first seminar on programmed instruction jointly sponsored by the UNESCO and the Department of Education in 1971. The Philippine Normal College has conducted four similar seminar-workshops since 1971, aside from offering regular courses in programmed instruction. The U.P. has also been offering the same course although not in every semester.

- There is a general trend to combine the basic forms of programming or to modify them.

Nature and characteristics

Programmed instruction is a method by which a learner learns by himself from carefully sequenced materials. These self-instructional materials:

- are presented in small steps
- are logically sequenced
- require active responding
- give immediate feedback to inform the learner the correctness of his answer, thus giving reinforcement
- involve constant evaluation, since most frames contain test question aside from the post-test
- follow the process of learning as they are constructed from the simple to the complex or from the easy to the difficult.

What PI is <u>not</u>

- A programmed material is not a test. It is a teaching material in which a bit of information is given which the learner is asked to apply in a new situation.

- Programmed instruction is not a cure-all. It is not the only method but should be used with other methods. A teacher is still needed although in a different role--that of a director or manager of learning.

- Programmed instruction is not an audio-visual aid. Programmed learning is an effort to complete the educational model--that is:

  Stimulus → Response → Reinforcement

  An audio-visual aid is only a stimulus.

Values of Programmed Learning

- A good programmed material focuses on just the essentials.

- More material is covered in a short time, hence helps solve the problem of knowledge explosion.

- Makes mastery learning possible even for the dull pupils.

- There is satisfaction resulting from the knowledge of achieving the correct answers.

- The expertise of subject matter specialists can be shared by an infinite number of students and teachers.
- High Standards of performance are maintained through good quality programs.
- Absent students could easily catch up with their peers.
- Creative talents of educators and trainers are tapped.

Limitations

- It takes great technical skills to make a good program.
- Very few programs are available in the market.
- It is costly to produce the materials at the beginning.

Types of Programmed

There are two basic types of programs:

- The Skinner program which is also called:
  - Linear because it follows one line of thought, i.e., the learner proceeds from one frame to the next.
  - Constructed-response because the learner constructs or thinks out his answers.
  - Extrinsic because the path of the learner is predetermined by the programmer.
- The Crowder program which is also called:
  - Multiple-choice program since it presents multiple-choice questions after the given information.
  - Branching program because the learner does not follow one line of thought but detours to other lines of thought, depending on his choice.
  - "Scrambled book" because for every choice of answer the learner is told to turn to a different page.

- Intrinsic program because the path of the learner is determined by his own choice of answer

---

Examples

* The Handbook on Programmed Instruction by Dr. Millan is written in linear form.

* Attached is Crowder's branching program.

Steps in Programming

There are five basic steps in preparing a programmed material:

1st Step

* State the objectives:
  - in behavioral (observable) terms
  - with the condition or conditions under which the learner must perform
  - with the quality of performance expected

The objectives should also consider the outcomes of learning expected such as:

- The cognitive (knowledge, comprehension, application, analysis, synthesis, and evaluation)

- The affective (attitudes, values, interests, appreciations)

- The psychomoter (skills, abilities habits)

2nd Step

* Write the post-test
  - Each objective should have a corresponding test item or items.

  - Questions should be of varied types.

  - Questions should be constructed according to the principles of test construction.

3rd Step * Write the program

- Present material in several ways (linear, branching, or a combination or modified form).

- Use illustrations, charts, slides, when necessary.

- Provide enough practice frames for the learner to apply what he had learned.

- Check for adequacy, grammar, etc.

4th Step * Try out the program

- First on a one-to-one basis. Observe reactions specially on difficult parts.

- Next to a small group

- Then to a big group

5th Step * Revise the program

- Consider the observations made during the try out.

- More frames may have to be constructed.

SYSTEMATIC INSTRUCTION

The model for systematic instruction is similar in most instances to the process for planning programmed learning. The first step involves analyzing the problem. What does the learner want to know, do or feel? Next a consideration of the context involves an inventory of the setting with its resources as well as constraints. In order to understand what needs to be done in the learning experience it is important to subtract where the learners are now from where they should be. This equation produces what needs to be done in the instructional process. A statement of what they will be able to do in terms of performance is the next step which comes about as objectives are formulated. These are evaluated by colleagues who are recognized and certified for their competence in the specific subject areas. When the objectives have been validated by these professionals the tests, pre and post-tests are created. The next step is to choose a format as to how the curriculum should be organized. There are commonly five major instructional formats: 1- The lecture-discussion method. 2- Individualized instruction. (Programmed learning falls into this category.) 3- Small group instruction. 4- Seminars. 5- Experimental learning.

Media is the next important consideration. How instruction is communicated is often a question with more than one answer. Just one medium is seldom adequate to reach all of the learners in any one group.

Evaluation is answering how successful the learning experience was to the learner and also to the teacher and educational designers. The response in the form of an orderly collection of data is the basis of the revision which is the final essential step to systematic instruction.

SYSTEMATIC INSTRUCTION (SUMMARY)

The model for systematic instruction is similar in most instances to the process for planning programmed learning. The first step involves analyzing the problem. What does the learner want/need to know, do or feel? Next a consideration of the context involves an inventory of the setting with its resources as well as constraints. In order to understand what needs to be done in the learning experience it is important to subtract where the learners are now from where they should be. This equation produces what needs to be done in the instructional process.

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3) Small group instruction.
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Programmed Instruction Project

1. Goal: Prepare a mixed format learning package using the principles of programmed instruction.

2. Constraints

   a. Use both linear and branching formats

   b. Select appropriate medium (appropriate for learning characteristics identified)

   c. Show evidence of field testing

3. Requirements:

   a. The program should use to the best advantage the (P.I.) principles presented in class.

   b. The program should attend to the constraints listed above.

   c. The program should include display formats (i.e., visual, verbal) which are appropriate for the learning task identified.

4. Procedures:

   a. Select topic to be programmed
   b. Assessment of the audience characteristics
   c. Objectives specified unambiguously
   d. Subobjectives are expressed
   e. Criterion Test is constructed
   f. Paradigm is selected
   g. Sequences are ordered
   h. Frames are constructed
   i. Sequences are tested
   j. Revisions are made
   k. Program is validated
   l. Revisions are made

Task Description

The student will take a driver's training course to learn to drive a car safely. The course is administered by an instructor in a car with an automatic transmission. Some of the tasks he will be expected to perform correctly are the following: When approaching a stop sign, press down on the brake peddle. Having stopped the car, check to see that no cars are approaching. Then accelerate smoothly. When desirous of turning left at an intersection, turn on to do so, operate the switches that turn on and off the lights, windshield wipers, and defroster.

Task Analysis

Objectives

1. When approaching a stop sign, the student will correctly and safely press down on the brake pedal and come to a stop.

2. Having stopped the car, the student will visually check cross traffic before proceeding, then accelerate smoothly.

3. When approaching an intersection intending to make a left turn, the student will turn on the left-hand turn signal.

4. Having reached the intersection, the student will correctly and safely turn left.

5. When told to turn lights on, the student will operate the light switch.

6. When told to turn the wipers on the student will operate the wiper switch.

7. When told to turn on the defroster, the student will operate the defroster.

Task Description

The student will conduct an experiment in order to identify the basic structures of a leaf and will record his findings. He will be provided with a microscope and other necessary equipment. First, the student will turn the leaf over in order to expose the underside. Second, he will locate the breathing pores (or stomata) and the two guard cells on either side. Then he will draw a simple diagram and label the stomata and the two guard cells showing what he observed.

Next, the student will cut a thin cross section of the leaf with a razor blade. Then, he will place the cross section under the microscope so that he can examine the edge. The next task is to locate the plaisade layer, the epidermis, and the spongy layer. And finally, the student will draw a simple diagram and label the plaisade layer, and epidermis, and the spongy layer showing what he observed under the microscope.

Objective

Given the necessary equipment and instructions, the student will conduct an experiment in order to identify the basic structures of a leaf and will record his findings.

Subobjectives

1. Given a leaf, the student will turn it over to expose the underside.
2. The student will locate the stomata and guard cells.
3. The student will draw a simple diagram of a leaf, including stomata and guard cell.
4. The student will label the stomata and guard cells on his diagram.
5. Given a leaf and a razor blade, the student will cut a thin cross section.
6. The student will place the cross section under a microscope and adjust the microscope.
7. The student will use a microscope to locate the palisade layer, epidermis, and spongy layer in the cross section of a leaf.
8. The student will draw a simple diagram of the cross section, including the palisade layer, epidermis, and spongy lyer.
9. The student will label the palisade layer, epidermis, and spongy layer on his diagram.

EXAMPLES OF THEMATIC PROMPTS

1. Goru is a sacred animal. Goru is also called _____ in the Hindu religion.

2. The brain "makes sense" out of the impulses carried from the cochlea by the _____ nerve.

3. Learning usually occurs when an individual's response is promptly rewarded or _____.

4. Reinforcement which consists of presenting south-after stimuli is called positive reinforcement, reinforcement which consists of terminating unpleasant stimuli (e.g., loud noise) is called _____ reinforcement.

5. It is easy to learn about the metric system when one thinks of the money system in relation to it. A dollar has _____ cents (pennies).

6. 100 Rupia = 1 _____. A meter has _____centimeters.

7. Thus, a centimeter works somewhat like a cent. Just as 100 paisa is 1 taka, 100 centimeters is _____ _____.

8. Centigrade and Fahrenheit are both scales of temperature. Kalvin is also a _____.

9. Knowing that most metals expand when heated, and remembering that the period of a pendulum depends on the length of the rod, we would expect that a pendulum clock would _____ time on a cold day.

10. The Indonesian Flag is colored _____ and _____.

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TERMINOLOGY RELATED TO PROGRAMMED INSTRUCTION

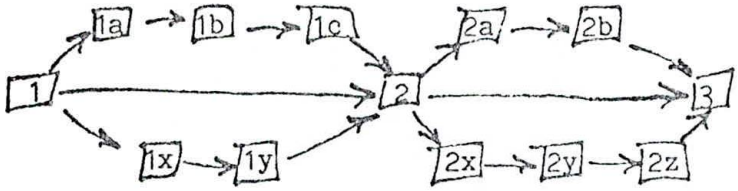
1. Teaching machine - The vehicle that carries or presents programmed instruction. The vehicle may be a printed page, film or computer based.

2. Thematic prompt - A cue to response that takes into account the knowledge the reader already possesses.

3. Linear program - A program in which each frame follows in order one after the other. All users of the program must follow this sequence.

4. Panel - A diagram, chart or visual material that is referred to in a program but is separate from the frames in a program. It can be tipped into the pages of a program or set up outside. The program is used as a visual referent while the reader is going through the program.

5. Branching program - A program in which frames are sequenced in several orders and the user of the program tracks and program according to his response. Branching is an attempt to take into consideration individual differences.



6. Formal prompt - A cue to response that is based on the Form of the response.

   i.e. - number of letters ---
   letter cues PAR S
   or rhymes

7. Scramble book - An example of Branching program technique. The reader progresses through the pages according to his responses rather than page by page in usual book use technique.

8. Constructed response - User is called upon to respond by manufacturing his response as opposed to being a multiple number of responses from which to choose.

9. Fading - The gradual withdrawal of cues to response.

10. Frame - Within a linear program each "bit" of information and its accompanying call for response is called a frame.

11. Step - The planning decision regarding how much or how little to incorporate in a frame.

12. Terminal behavior - What is expected of the learner after the program.

13. Criterion behavior - The quantity, quality, and time expectations applied to specific activities called for a behavioral objectives.

14. Feedback - That information provided the learner that tells him if his response is appropriate or not.

VISUALS

Visual: A symbolic or pictorial representation.

Visuals can aid your teaching objectives in the following ways:

1. Attract and hold the student's attention
2. Clarify information
3. Provide a common reference for instructor and student
4. Overcome limitations of time and space (e.g. clinical cases).

In order to determine whether or not your self-instructional unit can benefit from the use of visual:

A. Examine your instructional objectives
B. Look at the characteristics of the available media (see chart).

Ask these questions:

1. Do I need visuals to complete this objective? (Will visuals add to my objective or will they distract from my teaching?)
2. Do I need more than one visual for this objective? (i.e. a series or a combination of different visual media.)
3. How close to real life does the visual have to be? (Can it be a graph or line drawing, or should it be a black and white or color photograph?)
4. Does the visual have to have color? (Color is particularly important for "recognition" or "diagnosis" objectives.)

SELECTIVE VISUALS CHART FOR SELF-INSTRUCTIONAL UNITS

	Variety of Presentation	Sample Verbs
More Symbolic ↑ PRINT	capitals, underlining, boxing, separating from text, different lettering, numbering	"define", "list", "explain", "discuss"
GRAPHS OR CHARTS	pictures, words, numbers, bar or broken line graph color or black and white	"relate", "assess" "recall", "select"
LINE DRAWINGS	simple line drawings with or without labels shaded line drawings with or without labels realistic or graphic, comparison drawings series of drawings, cartoons	"locate", "recognize", "identify", "compare"
BLACK & WHITE PHOTOS	printed with the text, added to appendix variety of sizes, comparison photographs series of photographs	"recognize, "identify", "demonstrate" "compare"
COLOR SLIDES ↓ More Realistic	Attached to back of unit, realistic or graphic, close-up and distant shots comparison slides, series of slides	"distinguish", "diagnose","identify","compare"

Marjorie L. Kupper, Jane W. May

EXAMPLES OF FORMAL PROMPTS

1. Number of Letters:

   In the knee jerk or petellar-rendon reflex, the kick of the leg is the r_ _ _ _ _ _ _ _ to the tap on the knee.

2. Number of Words in A Response:

   To express action which was completed at an indefinite past time or which is still going on, we use the _____ tense.

3. Serial responses:

   Like the Flag, the Flags of and are _____ and _____.

4. Sound Patterns (rhyming):

   Nine times seven and just one more is eight time eight, or _____.

5. Syntax:

   We say that the form BOY is singular but that the form <u>BOYS</u> is singular/plural _____.

   Understand is a more complex behavior and therefore the learner will be expected to behave differently than he would for just knowledge of the subject. If the learner can explain the function of the parts of the projector, and can explain how the projector works, we can say he has an _____ of projectors.

TECHNIQUES OF INTRODUCING CONTENT IN FRAMES

1. By definition:

   a. Use a common sense definition. Follow in the same frame with an example part of which pupil can formulate.

      Ex: A noun is the name of something.

      Chair is a noun because it is the _____ of a thing.

   b. Follow in another frame, with an example requiring the pupil to use the word define.

      Ex: Tree is a _____ because it is the name of a thing.

   c. Introduce contrast. Show what the concept is not and point out concepts easily confused which are not the same as the focal concept.

      Ex: Sing is not a _____ because it is _____ the name of something.

      In "Lita has a beautiful dress", dress is a _____ but beautiful is _____, the name of something.

2. By example:

   Ball, hat, dog, house--all these are names of things. They are called nouns. The name airplane is also called a _____.

3. By anticipation:

   The subject of a sentence is a noun and sometimes a verb form called a gerund which means doing something.

   Ex: In "The pupils study their lessons well", the subject

is _____. Pupils is a _____.

In "Swimming is a good exercise", the subject is _____.

Swimming is a verb form used as a noun and it is called a

_____.

4. By prompts:

a. Thru similarity

(1) of ideas: Just as the sun rises in the morning, the full moon _____in the evening.

(2) of signals: "Naturally" signals a common sense answer.

The roads were impassable after the floods

Naturally, many pupils were _____ in class.

(3) of grammatical construction:

The higher the altitude of a place the colder is the climate the lower is the place, the _____.

b. Thru constraint

(1) of ideas: Warm air rises; cold air _____.

(2) of signals:

+8 is greater than -2 and

+3 is greater than -10, but

____ 9 is _____ than -1.

(3) if grammatical construction

Same constructions limit the range of response.

The thicker the clouds, the (lighter, heavier) is the rain that falls.

c. Through echoic devices (imitative)

Bright pupils love to be challenged in their thinking, hence they should be asked _____ questions.

d. Hints: Reference to earlier learnings.

The term "principle" means "fundamental truth" or "basic law". The principles of teaching then means _____ of teaching.

A TEST ON PROGRAMMED INSTRUCTION

Direction: Write the letter of the item which best completes the meaning of the statement.

1. The basic idea of programmed instruction is:

   a. Breaking information into large units of items.

   b. Reinforcement of learning from satisfaction of getting the correct answer

   c. Following instructions with accuracy

   d. Substituting the teacher with a program

2. To benefit most from a programmed material, the student:

   a. Reads the material just like a textbook

   b. Recalls the answers to questions mentally

   c. Copies the material

   d. Writes the answers to questions

3. The most important value of a programmed material is:

   a. The teacher may have a holiday while the students work on the material

   b. A programmed material can be used for several years without need of revision

   c. An infinite number of students can benefit from the expertise of several specialists.

   d. Programmed material are not expensive

4. Which of these is not found in a good objective?

a. The objective stated in behavioral terms

b. The conditions under which a student performs

c. The list of resources needed

d. The quality of performance expected

5. Which of these is a properly stated objective?

a. Knows the value of family planning

b. Understands the evils of abortion

c. Appreciates the advantages of a small family

d. Enumerates three effects of contraceptives

6. A type of programmed material in which the path of the learner is determined by the answers he makes is called:

a. linear

b. branching

c. chaining

d. Ruled

7. Giving cues to the learner as to the answers to question observes the principle of:

a. prompting

b. fading

c. reinforcement

d. shaping

8. The first step in programming is:

a. Writing the frames

b. Trying out the frames

c. Writing the objectives

d. Evaluating the frames

9. Who of these is not urgently needed in programming?

a. A guidance counselor

b. the subject specialist

c. language expert

d. programming expert

10. A programmed material is considered good if:

a. Half of the students obtain 50% of the items

b. 60% of the students score 70 in a 100-item test

c. 75% of the students get 75% of the test items

d. 90% of the students get 90% of the test items

11. In the process of developing a programmed material, the best way to try it out is on the basis of:

    a. one-to-one

    b. one-to-ten

    c. one-to-one hundred

12. The Skinner program has the advantage of:

    a. presenting one idea at a time

    b. presenting several ideas in a panel

    c. Asking the student to choose an answer

    d. Asking the student to make several answers

13. What do you expect to gain from this workshop? In your opinion, how best can this be achieved?

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 <u>NO</u> to any of the above items, please specify <u>why</u>.

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 ☐

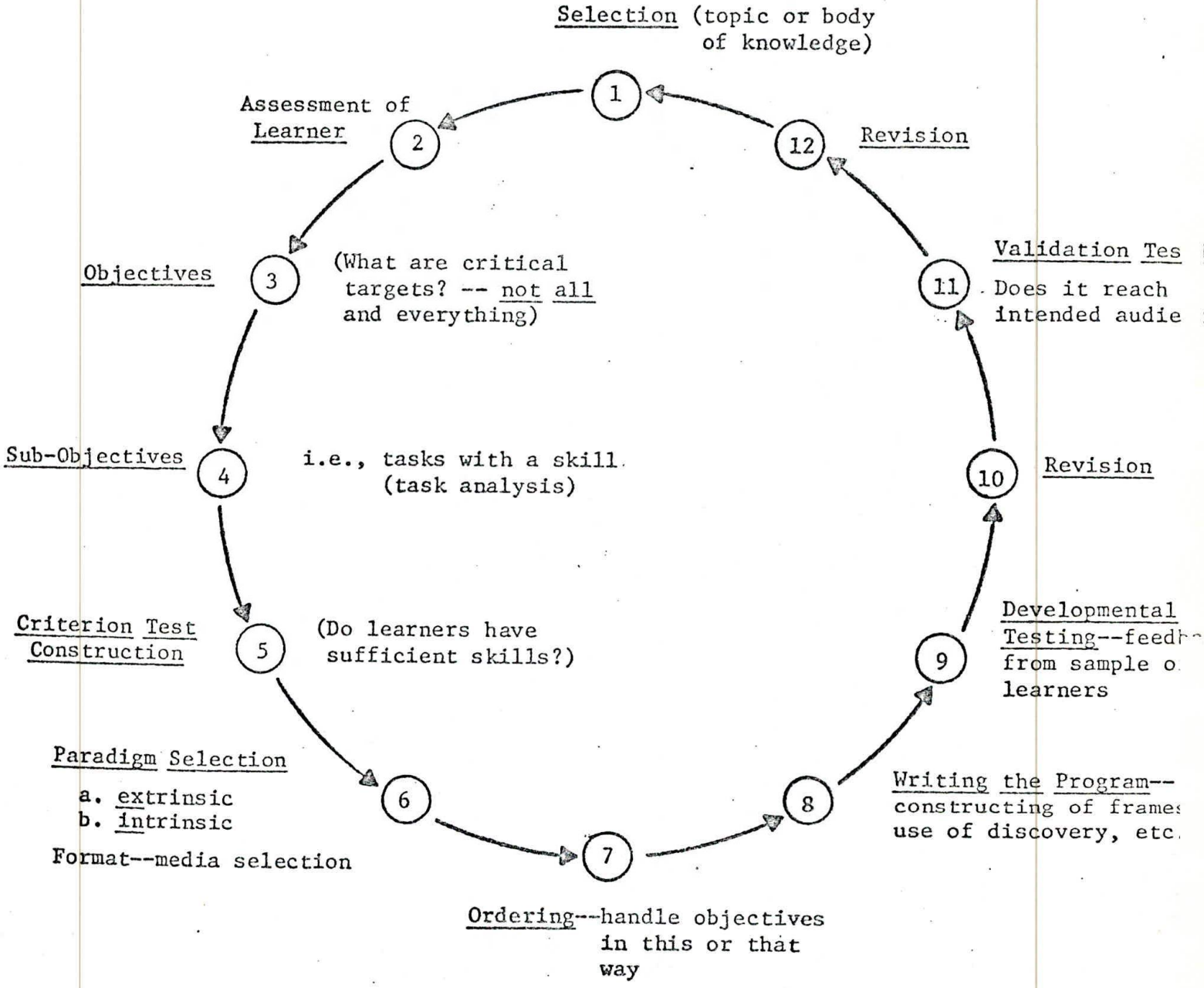
VII. Please comment on any other aspects of the learning module, objectives or post-test items, that you feel might be relevant for adequate revision, e.g.,

Is the mode of presentation the most appropriate?

THANK YOU.

Model

Process of P.I.



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 improveme 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 attentiportant 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:

"CRITICAL IDEA" PRINCIPLES

1. In each frame, a student is held responsible only for that portion of the presented material to which he has responded correctly. Frames that follow may be built on such material.

2. In a critical program the active responses are integral to the learning process.

3. A student is held responsible at the minimum level of understanding required for a correct response to a frame.

4. Concept formation is dependent upon maximum generalization.

5. A useful technique which serves to maximize generalization is to require that each restatement of a concept use new terms and new perspectives.

I. For each statement circle the one response that is the closest to your opinion.

1. The course objectives were:
   a. clearly stated or written
   b. stated or written; but not all of them were clear to me
   c. stated or written; but most of them were not clear to me
   d. neither stated or written

2. The course content was geared to a level that was generally:
   a. appropriate for my background
   b. too elementary
   c. too difficult
   d. inappropriate for my background

3. I think the organization of the course material was:
   a. completely clear and useful; excellent
   b. for the most part, clear and useful; good
   c. some topics were organized in a clear and useful manner, while others were not; fair
   d. there was little apparent organization in this course; poor

4. After reading the course manual, I think it is:
   a. both a well written and useful document
   b. a fairly well written document, but nevertheless useful
   c. a poorly written document that is of limited utility
   d. neither a well written nor useful document
   *e. there is no course manual

5. The time required to complete the homework assignments was:
   a. reasonable
   b. unreasonable
   c. wasted; these assignments were "busy work"
   *d. there were no homework assignments in this course

6. The amount of time allotted for this course was:
   a. sufficient
   b. too long
   c. too short
   d. this course should last _____ number of days

7. Overall, I think this course was:
   a. excellent
   b. good
   c. fair
   d. a waste of time and money

8. Given the objectives of the course and the skills required for a meaningful understanding of the material, I would:
   a. recommend this course to a friend without reservation
   b. recommend this course with some possible changes
   c. not recommend this course unless there were definite improvements
   d. not recommend this course under any circumstances

9. For future courses, there should be:
   a. no substantive changes
   b. more practical application of the course material
   c. more theory presented as a basis for the material taught
   d. more of a "balance' provided between theory and practical application

10. How did you hear about this course?
    a. employer
    b. friend
    c. schedule
    d. conference
    e. other _____

NAME _____ COURSE _____ DATE _____

II. Please circle the one number that represents the extent of your agreement with each of the following statements. READ EACH ITEM CAREFULLY.

	STRONG AGREE	AGREE	DISAGR	STRONG DISAGR	NO OPINIO
1. The course content was useful for my professional growth.	5.	4.	3.	2.	1.
2. The course content was what I had expected.	5.	4.	3.	2.	1.
3. The course content was too complex.	5.	4.	3.	2.	1.
4. The course content was too simple.	5.	4.	3.	2.	1.
5. The course content was up to date.	5.	4.	3.	2.	1.
6. During the course I felt challenged to learn.	5.	4.	3.	2.	1.
7. Generally, the course materials were presented in an interesting manner.	5.	4.	3.	2.	1.
8. The course content was well coordinated among the instructors.	5.	4.	3.	2.	1.
9. The instructors were well prepared for most class sessions.	5.	4.	3.	2.	1.
10. The instructors were quite knowledgeable about their subject area.	5.	4.	3.	2.	1.
11. Generally, I understood what I was expected to learn in this course.	5.	4.	3.	2.	1.
12. Throughout the course I received sufficient information on anything I did not understand.	5.	4.	3.	2.	1.
13. The questions raised during the lectures were usually answered to my satisfaction.	5.	4.	3.	2.	1.
14. My background was adequate for success in this course.	5.	4.	3.	2.	1.
15. The teaching methods used in this course were effective for my learning.	5.	4.	3.	2.	1.
16. This course contained a sufficient amount of practice exercises.	5.	4.	3.	2.	1.
17. The course assignments were useful for my learning.	5.	4.	3.	2.	1.
18. The production quality of the audio-visual materials was technically adequate.	5.	4.	3.	2.	1.
19. The audio-visual materials aided my understanding of the topics presented.	5.	4.	3.	2.	1.
20. The final exam accurately represented the material covered in this course.	5.	4.	3.	2.	1.
21. Overall, I was pleased with this course.	5.	4.	3.	2.	1.
22. I think my technical skills and/or knowledge have been strengthened as a result of this course.	5.	4.	3.	2.	1.
23. I think I will be able to use what I have learned from this course in my current position.	5.	4.	3.	2.	1.

24. I consider the most needed improvement in this course to be: _____

25. The "best" part of this course was: _____

DO NOT WRITE IN THIS SPACE

WORKSHOP ON PROGRAMMED INSTRUCTION

1. Purpose:

In response to requests for family planning and health training materials, it is proposed that a workshop be held to produce self-instructional manuals on contraception, maternity records and related health-nutrition-MCH subjects. This 5-day activity will be held at a location in selected by the A staff of educational media and programmed learning experts will assist content specialists to prepare a complete first draft version on each subject area. This project will then continue the field-testing and revision process until a final version is ready for publication. An evaluation study will determine the effectiveness of this method of training in participating country programs.

2. Duration:

This work will begin on and continue for a period of six months. The workshop will be held

3. with the assistance of The Committee on Applied Research in Population will provide local costs and support staff, Dr. Charles Ausherman, will be the consultant resource for this project.

4. Outputs:

As a result of this project, programmed instructional packages will be produced as a means to facilitate family planning training health programs. Effective dissemination of research through self-instructional modules introduced into national training programs will be conducted. The total number of programmed instructional packages will be approximately 20 (titles). In addition, participants will be trained in the methods of programmed instruction.

5. WORK PLAN AND TIMETABLE

Programmed Learning Training Study.

		Activities	Time	Manpower
1.	Workshop	(See separate Agenda)	3 days	Full Staff
2.	Revision		11 days	Research Associate Consultants
	a) revising and reviewing of pre-tested SI materials b) pre-testing revised SI materials c) final revision d) final editing e) typing final copies			Research Assistant Research Associate Editor Clerk-typist
3.	Printing		21 days	
	a) typesetting, proof reading, typing b) paste-up, insert proof corrections c) camera work, blue print, printing, binding		(not needed if mimeographed)	Editor Typesetter Proofreader Typist Artist
4.	Distribution and utilization			
	a) deliver to treatment groups b) use of PI modules		2 months and 2 days	
5.	Evaluation			
	a) QN construction (including pre-testing revision)		2 months and 20 days	Research Associate Research Assistant
	b) contract research b.1. training interviewers b.2. data gathering b.3. data processing			Programmer Coders Clerk-typist Secretary
	c) Data analysis and writing of study reports			

SAMPLE LETTER OF INVITATION TO PARTICIPANTS OF WORKSHOP

Dear

is sponsoring a workshop on programmed learning in Family Planning/Health Training programs at the

We expect this workshop to provide an exciting opportunity for a select group of training specialists to exchange ideas and to explore new instructional training approaches. The first day will be devoted to presentation on and discussions of new and significant instructional methodologies for use in your training curriculum.

We anticipate that during the workshop, you, as a participant, will design and create your own programmed learning unit. You will be asked to select an instructional topic consistent with the theme of the seminar: that is, the development of mastery in family planning and research methods. You will then formulate instructional objectives pertinent to the topic of your choice. From these objectives, you will create an easily replicable, individually paced programmed-learning unit.

A team of instructional development specialists and health educators will assist you and your fellow participants in designing and producing your unit. In the individual and group processes of preparing these units, each participant should be able to discover ways in which programmed learning materials can be useful in facilitating instruction in his/her own institution. Discussions will also be oriented towards finding practical means for sharing materials, especially those programmed-learning units finished in the workshop.

To make the workshop a highly productive experience for all, we urge you to make the following preparations:

---

*Please refer to the workshop schedule enclosed herewith

1. Make a preliminary choice of a topic (relating to the theme of the seminar/workshop) on which you can develop an instructional unit. The average learner in your program would take 30-60 minutes to complete this unit. You may want to relate your topic to any of the topics suggested on the next page or choose one which you think relevant to your program.

2. It is very important that you bring with you to the workshop all the references, books, photographs, 35 mm. slides, or other materials which you will want to use in producing your programmed-learning unit.

3. Prepare to spend three days of concentrated effort in learning the various phases of the design, development, and effective use of materials in programmed-learning form. These phases include clearly defining instructional objectives, choosing learning strategies which will help the learner to accomplish those objectives, and designing a post-test, which will allow the learner to measure his learning achievement.

For some workshop participants, this will be a first encounter with a relatively new but proven instructional approach, and we will make every effort to assist in your exploration of the potentials of this method. The overall objective of the workshop is to enable each participant to (1) master the methodology of an instructional approach for teaching family planning-related topics to others; and (2) create one unit on a topic related to the theme of the seminar/workshop.

6. SUGGESTED SCHEDULE OF WORKSHOP ON PROGRAMMED-INSTRUCTION

DATE/DAY	TIME	TOPIC ACTIVITY
	8:00	Introduction to Agenda
	8:30	Programmed Instruction a) Overview b) Literature review of research on the effectivity of Programmed Instruction
	9:00-10:15	Discussion/Reactions
	(10:00- 10:15	Training-Research Consortium Programmed Learning Model
	11:00	Discussion/Reactions
	11:30	Selection of Topics
	11:45	Summary of Assuring Learning Guidelines on Designing Programmed Learning Units
	12:15 NOON	Lunch
	2:00 PM	Evaluation of sample prototype materials
	2:30	Behavorial Objectives
	2:45-5:30	Development of Programmed Instruction
	(3:30 5:30 7:00 8:00	 Free time Dinner Educational Media Presentation Systematic Course Designs for the Health Sciences Learning System Designs

DATE/DAY	TIME	TOPIC ACTIVITY
	7:00	Breakfast
	8:00	Designing & Constructing Consistent Post Tests
	8:45	Evaluation
	9:45-10:45	Development of programmed learning units (continuation)
	12:30 NOON	Lunch
	2:00 PM	Exchanging of Units
	3:00-5:30	Revision of Programmed Learning Units
	5:30	Free time
	7:00	Dinner
	8:00	Training System Design and Educational Media Presentation or Continuing Refinement of the Programmed Learning Unit
	7:00	Breakfast
	8:00	Exchanging Units
	9:00	Trainer-Learner Interviews
	9:30-10:15	Revision of Programmed Learning Units
	10:15	Participant's Evaluation of Workshop
	10:45	Continuing Revision of Programmed Learning Units
	12:30 NOON	Lunch
	2:00-4:00	Finalization of Programmed Learning Units
		(This process of finishing and testing the units will last 3 days)
	Last Day	Staff Evaluation of Workshop Feedback of Participant's Evaluation of Workshop

7. P.I. DEFINITIONS

Programmed Learning uses a systems approach which has built-in evaluation. Cognitive objectives are tested by post-test questions for the students. Attitudinal objectives are tested by post-test questions and student response. Programmed learning units are generally revised until 90 percent or more of the learners using the units achieve at least 90 percent of the objectives, according to the post-tests in each unit.

8. A NOTE ON P.I. CHARACTERISTICS:

Characteristically, a Programmed Learning course is comparable to a traditional semester's work on a given subject consists of 15 to 30 self-contained learning modules. Each module has the following characteristics:

1. It allows the student to proceed at his/her own learning rate individually. Completion time of each package averages from 30 to 60 minutes.

2. It has a clear statement of objectives--i.e., the intended learning objectives or instructional outcomes.

3. It has a self-administered post-test, enabling the student and others to measure whether the objectives have been achieved.

4. It includes frequent practice exercises relevant to the objectives and to the post-test.

5. It includes feedback, or knowledge of results, which reinforce the student for correct responses and allow him/her to improve comprehension and retention.

6. Programmed Learning places emphasis on the needs of the learner and allows the trainer or teacher to focus on individual needs of each Learner.

7. Programmed Learning breaks down learning tasks into smaller units easier to assimilate.

8. Programmed Learning forces creators of instruction to decide what end behaviors are acceptable and practicable. Thus, the Learner is the final arbitrator of how and why a subject is presented. The teacher as such is no longer a master. Recent studies reveal that:

PL is particularly applicable when those to be trained are widely dispersed.

PL is most economical in programs where many personnel require training.

PL can reduce the number of expert instructors required.

PL can facilitate the rapid introduction of new technical information.

PL permits a quality control of the material presented to the student.

PL is more effective with some groups of personnel.

PL offers an advantage in training personnel whose day-to-day work is not subject to direct constant supervision.

PL is intolerant of airy attitudes and breezy generalities and is a threat to teachers who rationalize their inadequacies in terms of "stupid students".

PL can free a teacher for creative inter-action with Learners adding a whole new dimension to teaching.

9. REVIEW OF P.I.

Programmed Instruction:

1. Is learner centered, NOT teacher dominated.
2. Contains a clear statement of objectives.
3. Uses criterion referenced post-test as evidence of results.
4. Provides information in sequential-logical small steps which are easier to assimilate.
5. Is concise (takes less time).
6. Is individually paced.
7. Uses any educational method(s) as appropriate to content.
8. Gives frequent feedback - knowledge of results.
9. Allows response by students.
10. Gives reinforcement to learners.
11. Assures uniform quality control in educational programs.
12. Is useful when learners are geographically dispersed (no classroom necessary)
13. Allows teacher time to give to individual learner needs and thus, is more interesting from teacher's point of view.

10. EVALUATION OF THE PI MODULES.....

The purpose of this research is to test the relative effectiveness and efficiency of self-instruction in village level worker training programs in India. Four problems have been identified as potential areas of study:

A. PROBLEM STATEMENTS

1. Do self-instructional materials enable novices in a particular content area to become masters of that specific content area?

2. Do self-instructional learners working in rural settings improve in learning performance as much as compared with those learners working in urban settings?

3. Does learning with a self-instructional learning module relate to their attitudes concerning application of this new knowledge?

4. How does attitude of a learner toward a particular body of learning content relate to the total learning gain of the learner?

B. HYPOTHESIS

1. Programmed learning modules can increase the level of information among novices such that they can perform at a satisfactory level on a knowledge recall test in a given subject area.

2. There will be no significant difference in total achievement scores between learners from rural and urban areas.

3. There will be no significant difference between learners with positive and negative attitudes on learning content.

C. EVALUATION PURPOSE

Continuing education in health programs requires the periodic upgrading of skills. The need is even more apparent among widely dispersed health workers. This research seeks to determine the response of health workers to the use of self-instructional materials in need of in-service training.

Particular emphasis will be given to those who for various reasons, such as expense and inconvenience of travel to training centers cannot return to formal classroom settings to receive additional educational training. It is suggested that this problem relates to a wide variety of related workers, world-wide, who seek to upgrade their skills as new knowledge in their respective field expands exponentially. A specific concern of this study is the relationship of learner attitudes on curriculum content and format to learning achievement.

D. RELATED RESEARCH

To meet in-service training nneds, self-instructional approaches have been utilized in a wide variety of settings. It has been aserted that self-instruction is just as effective as traditional teaching. Self-instructional teaching in certain situations has been shown to be both effective and efficient by several users and researchers. Xerox Basic System, Inc. estimates that programmed instruction can reduce learning time by 30% to 50%. The University of Florida School of Medicine documents a 50%

reduction in acquisition time and no reduction in retention using self-instruction. (Stevens, C.B., Enzor, M., Phillips, T., Small, P.A., "An Evaluation of Self-Instructional Package on Amino Acid Chemistry", Journal of Medical Education, 48:276-279, 1973.)

Some researchers have measured the effectiveness of initial uses of self-instruction in the population field. Mullins and Perkin found that among nurses in Thailand engaged in programmed learning about contraceptive technology, scores for units on the Loop showed an average of 36% comprehension on the pre-test and 80% on the post-test while midwives scored 20% on the pre-test and 70% on the post-test. In a unit on oral pills, the nurses improved from 37% on the pre-test to 85% on the post-test and midwives from 17% on the pre-test to 81% on the post-test. (Mullins, C. and Perkin, G.W., "The Use of Programmed Instruction in Family Planning Training Programs: A Preliminary Report", Studies in Family Planning, The Population Council, 1969.)

Until recently programmed instruction in the Philippines has primarily been for remedial purposes and generally limited to undergraduate courses at the college level. There was skepticism among some educators concerning (1) the adaptability of self-instructional materials to biomedical topics and (2) the acceptability of self-instructional materials to biomedical topics and (2) the acceptability of self-instructional materials by professionals and sub-professionals. Some questioned the acceptability of self-instruction in a group-oriented culture. A nation-wide study on the use of programmed learning in the health sciences conducted in the Philippines by the Population Center Foundation and the University of North Carolina revealed that programmed learning can save up to 50% in learning time and costs with almost all subjects preferring this method of training.

A Study of Programmed Learning for
Continuing Education in Family Planning in

12 Month Budget for Programmed Instruction Study

Workshop:

20 Participants .....

Paper, supplies, typist
4 modules x 200 each .....

Project coordinator
(part time) 12 months .....

Secretary
(part time) 4½ months.....

Research Assoc.
(full time) 12 months.....

Transport per month x 12 months .....

Consultants, artist.....

Postage, tel. & tel. Qtly reprts.....

Overhead & contingency.....

PROGRAMMED INSTRUCTION TODAY

By

Dr. Wilbur Schramm
Stanford University

The introduction of programmed instruction to developing countries presents some delicate problems, and must be accomplished with caution and insight. The problem is one of sharing skills, findings, and materials in a sensitive and culturally bound area. The United States, where most of the work on programmed instruction has been done, must be prepared to share with the new states, and certainly will do so. How it does so is of the greatest importance. The new states must be encouraged to resist fast-talking salesmen who try to sell them programs and machines made in and for the United States. At the very least, these programs must be translated culturally as well as linguistically, and purchase of the machines may well be an unnecessary expenditure. Furthermore, a nation's education is a precious national possession and responsibility. The way to introduce a revolutionary new method like programmed instruction into a national system is not to introduce materials but to introduce the method--to build up competence in the new country so that it can decide what programs it wants made, what use it wants made of the tools, what it wants to buy, and what teachers it wants trained in the new techniques. We are not certain how many American programs would be usable in any of these new cultures; we are not even certain what changes would be required in the programming method itself. Therefore, any introduction of programmed instruction into a developing culture should be combined with development, and the findings should be shared as widely as possible, not only within the country but among the developing countries. Up to this point, we should be concerned with sharing our knowledge with the new states. Only after we understand the requirements of programming for the given culture, and only after the country has built up competence to make its own decisions about programmed instruction, should we think of what materials (hardware) of programmed instruction are appropriate.

The true revolutionary quality of programmed instruction lies in its potential for helping to free man from inadequate curricula, from inflexible concepts of "readiness" and abilities, from the poverty of the self-contained classroom and the lockstep of annual progress, from generations of ignorance in traditional societies, from inadequate theories of learning and inadequate use of capacities to learn.