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Project IMPACT

(Instructional Management by Parents, Community and Teachers)

The Curriculum and the Delivery System

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FOREWORD

Project IMPACT, as it attained its fifth and final year, successfully demonstrated to the many who came to see it, both from SEAMEO member countries and from other parts of the world, its viability, primarily in terms of its specified objectives, namely, effectiveness, economy and mass delivery. Yet, even as these were being achieved with scientific certainty, there surfaced some very favorable concomitants which add to the merits of the experiment and which help educators to perceive what could advantageously be changed or modified in conventional or traditional delivery systems for the benefit of the learners.

Thus Project IMPACT has been more than an experiment. It has been a discovery of new insights and strategies that enhance not only the quantitative expansion and qualitative improvement of primary education but even more important, it has been a discovery of strategies that liberate the spirit of the learners as they were aided to develop themselves according to their own capacities and limitations and as they took on roles that give vent to leadership and self-reliance.

Scientific evaluations of the research consisting of cost-effectiveness analyses, internal and external achievement testing,

criterion and norm-referenced measures all point to the success of the project. That both the Indonesian and the Philippine governments have given their encouragement and support as the research was being conducted and are now spreading the tryout and replication of the IMPACT system on a nationwide basis, is certainly the best reward to the Center, and to the funding agency, the International Development Research Centre of Canada (IDRC).

The success of IMPACT closes the year 1978-1979 with a deep sense of fulfillment and of gratitude to all those who lent a hand in the carrying out of the experiment.

LICERIA BRILLANTES SORIANO
Director, INNO TECH

"The Director's Message, INNO TECH ANNUAL REPORT, 1978-79.

PART I

PRINCIPLES OF IMPACT

The ways by which the IMPACT system of mass primary education differ from the conventional system can be explained by the principles behind the more specific techniques and practices. A few of the principles identify IMPACT as part of the conventional system. However, some principles make IMPACT a system by itself.

It is these principles which allow IMPACT to be quite versatile. The system may be applied to either the in-school or the out-of-school child. It may be implemented either in its entirety, or in parts.

Moreover, the principles take into consideration psychological and sociological realities, especially as these apply to children. It is to the soundness of these principles that much of the success of IMPACT can be attributed.

CHAPTER I

PRINCIPLES OF IMPACT

As a radical departure from the conventional system of education, IMPACT is characterized, and is based on a number of principles:

A. THE SUBJECTS OF EDUCATION ARE CHILDREN OF PRIMARY SCHOOL AGE

Basic is a consideration of the learner as of primary school age. The IMPACT system is expected to deliver mass primary education as effectively, if not more so, than the conventional system, but at much less cost. Moreover, IMPACT hopes to reach all who are in need of primary education, whether it is the in-school child; the out-of-school adolescent, and even the mature adult.

Alternatives have to be looked for to overcome the non-educational factors that contribute to a high drop out rate so that all children of primary school age can effectively follow the primary school curriculum from the start until they finish. In the IMPACT System, school dropouts do not cease the process of learning but they can go on studying to the finish and gain the elementary education certificate.

The IMPACT System is therefore open in character; it does not close off the opportunity to the children to study although they may have dropped out of primary school; it can therefore be used to solve the problem of school deprivation. The IMPACT System,

through its innovative approaches and methods, is expected to minimize, if not totally eliminate the reasons for drop-outs. In other words, the IMPACT System is an educational system with a mass character, in the sense that it is able to provide education simultaneously to a large number of children living under differing conditions. In this way it can be utilized as one alternative in implementing compulsory education.

B. LEARNING MATERIALS ARE BASED ON THE CURRENT PRIMARY SCHOOL CURRICULUM

The fact remains that the pupils of IMPACT schools are still governed by requirements of the system such as the successful attainment of objectives and the passing of official examinations.

The second principle therefore stresses the currency of learning materials. IMPACT developed its own set of learning materials and content, primarily in the form of modules. These, however, were based on the approved curriculum of the school system.

C. THE ESSENCE OF EDUCATION IS THE LEARNING PROCESS

School systems have always been concerned with developing in the child the ability and the skill to learn by himself. The third principle of IMPACT on the learning process shall achieve precisely this aim.

Education in the IMPACT System, through the intermediary of modules will encourage children to learn by themselves. There will be a minimum of exhortation, instead, the process will throw the child right into situations that will expect him to learn by himself.

D. LEARNING CAN TAKE PLACE ANYWHERE

In line with the concept of life-long education, principle four of IMPACT conceives of learning as taking place anywhere - not only in the classroom. The attitude that dropouts inevitably will cease to learn, or that graduation terminates the learning process is antithesis to this principle and therefore must be changed. Learning can be done, and education will prosper at any place as long as people want to.

In the IMPACT System, the school building is merely the center of learning from where guidance, materials, and resources may be derived. In the countryside, there, where the dropouts and adults are, learning posts are established for easy access. (This was particularly true of Proyek PAMONG in Solo.) It is to these posts where children, adolescents and adults alike, who are unable or even unwilling to return and attend regular school hours at the learning center may go to learn. All the facilities of the Center will be made available to them and special guidance and procedures are developed to respond to their particular circumstances.

E. MULTIPLE ENTRY AND EXIT

Corollary to the above principle, is that of multiple entry and exit in the IMPACT system. This is in direct contrast to the usual practice of single entry in the conventional system.

In developing countries, especially in the more rural or the poorer areas, the concept of compulsory primary education is an illusion. Under the conventional system, dropouts are inevitable - whatever improvements there may be in learning materials, school facilities, or the delivery system. IMPACT refuses to condemn the dropouts or the slow learners. Neither will IMPACT leave them to their fate.

The principle of multiple entry and exit will help solve the problem of dropouts by meeting them half-way, by literally allowing pupils to enter when they wish or when it is most proper for them, and to leave at the most opportune time. Anybody may leave anytime, while all the time the gates remain open for re-entry and continuation of learning or re-learning until one can take part in an evaluation of achievement and obtain an Elementary Education Certificate.

F. PROGRESS BASED ON MASTERY AND INDIVIDUAL SPEED

Stated in another way, this principle provides for self-pacing. Children will not be forced to proceed with speeds beyond their

capacity and readiness. On the other hand, they will not be hindered when they are ready and are capable. This principle recognizes the concept of individual differences quite realistically. The children learn by themselves and pacing is individualized. The bases of progress is mastery.

The experience of the IMPACT system confirms the truth that children indeed have differing speeds of development. The experience shows that there are children who can finish the curriculum of the primary school with good results ahead of the conclusion of the sixth grade study year. Pending admission of new pupils to the secondary school, such pupils can be aided with enrichment modules, or can be requested to aid their fellow pupils who have not yet finished or are younger in age. By aiding their friends in learning, their own mastery of the material of study is strengthened.

IMPACT produces materials for self-learning with built-in checks for achievement. These are in the form of self-administ tered tests with immediate feedback. Every module has a module post-test; and after 4 or 5 related modules, a block post-test is administered by the I.S. The I.S. sees to it that the pupil is able to successfully pass each set of tests before she gives the child a new module.

G. EDUCATION IS A SOCIALIZING PROCESS WITH TRAINING IN LEADERSHIP

Education is not only the process of developing the mind. It is a process of socialization as well. The objective of education is not only for the child to become knowledgeable and skillful, but also to grow as a human being with a sense of responsibility toward the nation's welfare. Children of today are the citizens of tomorrow. As the saying goes, no one is an island. People must live together as families, neighbors and in communities. In the future, the national welfare will depend on these children. To this end, socialization is needed.

In the IMPACT System, group learning is a primary mode of learning. Children learn together in mutual activities. Older ones act as tutors or "programmed teachers" to the younger ones. In peer groups, children assist each other. Socialization among peers, therefore, does not only occur informally outside the classroom but assumes some degree of formality inside the classroom.

In this way, education can be hoped to become more effective, because the children are not only getting explanation of the meaning and importance of mutual help or social living, but are truly being trained in putting it into practice.

In the IMPACT System, the peer group scheme, where one acts as a leader at various times, also serves to generate and develop leadership characteristics.

H. EDUCATION IS THE RESPONSIBILITY OF PARENTS, THE COMMUNITY AND THE GOVERNMENT

The 9th and 10th principles are explicit in the acronym IMPACT or PAMONG. Instructional management or the delivery of education is by parents, the community and the teachers. In other words, teachers are not the only sources of education. They are not the only "educators".

Limited resources, financial and human, is a crucial problem among developing countries. This is made more critical by an every growing population. In the conventional system, the greater part of budgetary allocations is for the salary of teachers. As the school population grows, so does the number of teachers required, and therefore the expansion of the financial burden. Hence the acceptance of the responsibility for education by parents, the community, and the government is crucial.

In the conventional school system, the participation of the community is chiefly financial, the encouragement of more direct support for immediate needs. In the IMPACT System, community participation is more substantial and technical. Parents are

encouraged to monitor their children's progress, to assist them through tutoring in their studies if they are capable; skilled persons in the community are enlisted to share their expertise directly with the children as occasions demand. IMPACT exerts an extra amount of effort to involve the parents and the community at large.

In general, the principle expects a more intensive and extensive utilization of the resources of the community toward the education of the children. In this way, the Primary School System realizes and develops community participation more fully. In turn this ensures dynamism and a positive incentive to learn.

I. THE TEACHER AS THE MANAGER OF THE LEARNING PROCESS

The teacher's duty is to direct and manage the learning process. Under the IMPACT System, the teacher will no longer do much direct "teaching". She will be expected to exercise a different role - that of managing all the resources of the school, all the sources of learning, and ensure that the child is benefited maximally - hence the designation "Instructional Supervisor".

The IMPACT I.S. assumes the role of "facilitator of learning". Everything that she does in the classroom is in pursuance of this role.

PART II

CURRICULUM DEVELOPMENT FOR IMPACT

IMPACT, an acronym for Instructional Management by Parents, Community and Teachers, is a management system established as an economical but effective delivery of mass primary education.

All the planned learning activities aimed at achieving the objective for which the IMPACT system is responsible, the corresponding instructional materials and learning procedures developed to produce the desired terminal behaviors in the learner, constitute its curriculum.

The activities involved in curriculum development include the organization of the learning continuum, the preparation of instructional materials, the determination of learning procedures that govern the use of these materials, and evaluation.

Learning under the IMPACT system is quite commonly associated with modules. This is, however, an oversimplification. Modules are simply the main instructional materials. The most striking and unique feature of Project IMPACT is the delivery system of learning which necessitated the production of the modules as learning materials that would fit the delivery system. It is quite necessary therefore, to be familiar with the delivery system to better appreciate fully the curriculum development phase, or the production of modules.

This part of the Manual is based mainly on the experience in the Philippines, and is mostly a quote of the paper of the Instructional Methods Expert (I.M.E.), Mrs. Aida Pasigna.

The preparation of modules and programmed learning materials was undertaken by a team of subject matter specialists in Cebu under the direction of the Instructional Methods Expert.

The original modules were prepared by subject areas based on guides and syllabi approved by or prepared under the direction or sanction of the then Department of Education and Culture (now the Ministry of Education and Culture).

However, the subject matter specialists of IMPACT worked quite independently of each other. As a result, there was a substantial amount of modules produced for different subject areas which in some cases exhibited similarities. Moreover, the result was a production of more than 1,000 modules, a number too cumbersome to manage.

Clearly, the original plan to write modules for every subject was not going to meet the challenge of (1) equipping the individual with basic literacy and numeracy skills and an elementary knowledge of the environment, of health, of civics and of standard moral code and (2) providing a sound basis for the rest of the educational pyramid

It was within this framework that Project IMPACT (Cebu, Philippines) evolved a basic integrated learning continuum for primary education. For the Demonstration Year, 1978-1979, all academic subjects were integrated into a single continuum.

From the start of the Project in 1974 until the school year 1977-1978, all IMPACT schools used the original set of modules and programmed materials. This included the two extension sites in Lapu-Lapu City and Sapang Palay, Bulacan, which were opened in School Year 1977-1978.

In writing the integrated modules, the Naga project exercised the privilege of using the native language (Cebuano) for the lower levels (I, II and the first semester of III). The modules for Levels IV to VI were all written in English. For the use of IMPACT schools in Sapang Palay, which adhered to the bilingual policy of the school system, another group of subject matter specialists translated and/or modified the materials produced in Cebu. In line with the bilingual policy, modules for Social Studies, Health, and Applied Skills were translated into Pilipino. In the process of editing, corrections and modifications were inevitable and even necessary. Modules for Science, Mathematics, Language and Reading were generally adopted.

CHAPTER 2

RATIONALE FOR AN INTEGRATED CURRICULUM

The main issue was functional literacy. The integrated learning continuum was intended to meet this need. Integration was expected to enable the instructional designer to prepare materials that may cut across subject matter boundaries, at the same time allowing for more freedom to concentrate on the development of skills and concepts in the native language during the beginning learning stages. In turn, this would facilitate later learning in the two second language, i.e., to develop initial literacy and numeracy skills in Cebuano, and to provide for the transfer of skills thus learned into Pilipino and English.

Furthermore, the integration of content learning with the development of skills, and vice versa, not only was expected to reduce instructional time - it was also expected to provide for a more realistic, interdisciplinary approach to teaching and learning.

In response to the issue of "effective education", Project IMPACT operated within the framework of the public school system, Hence, the learning continuum develop by IMPACT was basically that prescribed by the Department of Education and Culture. However, Project IMPACT integrated this learning continuum through the medium of learning modules.

In order to meet the two-pronged challenge above, particularly in rural or deprived areas where the problems result in a disturb-

ingly high percentage of primary school dropouts, the integrated curriculum makes provision for a basic and an advanced path, with integrated learning sequences in both paths.

For purposes unique to the project, off-the-shelf objectives were refined by the writers, but care was taken not to deviate too much from what was specified in the original learning continuum issued by the Bureau of Elementary Education.

In setting up the objectives to be included in the continuum, a distinction was made between those that would constitute the core or the basic path and those that would comprise the advanced path.

Inevitably, three areas were utilized as core, namely, communications skills, mathematics, and applied arts skills.

The integration process would eliminate duplication although it was expected to meet a problem of sequencing. Modules that would not go into the integrated set (mainly because of perceived high level of difficulty) would be classified as advanced modules for those who will want to pursue secondary education.

Several modules in applied arts contributed to the preparation of four manuals: Elementary Agriculture; Industrial Arts; Home Economics (Sewing); and Home Economics (Cooking).

The Basic Path

The basic path provides for the development of basic literacy and numeracy skills that will enable the individual to function effectively enough in his society and physical environment even when he is unable to complete the full primary cycle.

The basic path is considered adequate for a primary school learner who is unable to pursue secondary education. After successful completion of the basic modules he is expected to achieve a minimum degree of literacy that will make him do the following:

1) Read, comprehend and communicate effectively in the native language (Cebuano);
2) Read and understand simple Pilipino vocabulary and sentence structure;
3) Communicate fairly well in simple oral or written Pilipino to be understood;
4) Read and understand simple English vocabulary and sentence structure;
5) Communicate fairly well in simple oral or written English to be understood;
6) Read and write numerals with understanding;
7) Master basic arithmetic concepts and processes well enough to solve common everyday problems in the home, at work, or in ordinary daily transactions with other members of the community;

8) Use literacy and numeracy skills for further learning;

9) Use basic work skills fairly well to enable him to be gainfully employed in simple income-generating jobs like cottage industries, carpentry, farming, and the like;

10) Observe basic health and nutrition practices with understanding;

11) Observe standard moral codes in his various social and interpersonal relationships; and

12) Function as a desirable member of his home and community.

The Advanced Path

Parallel to this core path is an advanced path which starts at Level IV. This advanced path provides the learner with concepts, skills, and attitudes preparatory to secondary education. The advanced path calls for elementary education to become a sound basis of the educational pyramid, so that if the child goes on to high school (and most parents want their children to proceed even to higher education) he shall have a sound basis for this.

The modules for the advanced path provide enrichment and further develop skills and concepts that were not considered essential for functional literacy but are prerequisites to do high school work. This is enrichment for fast learners so they can go on their individual pursuits to the next modules. In the case of

average learners, they are required to finish all basic modules first, before taking up the advanced path. Under the IMPACT system, therefore, a primary school leaver will be given his credentials for admission to high school only after he has successfully completed all the modules in both the basic and the advanced paths.

The advanced modules may be used in either one of two ways: (a) to supplement and or enrich learning opportunities, at specific points in the continuum for fast learners whose interests and abilities need to be met and challenged; or (b) to supplement and/or enrich learning opportunities, after completion of all the modules in the basic path for average or slow learners whose learning pace does not permit them to leave the basic path within the time alloted for completing them, but who wish to proceed to the secondary school.

All learners go through the core modules using the peer group learning mode. However, the fast learner may study the modules in the advanced path through self-instruction as he waits for the rest of the members of his group to achieve mastery learning of the core module. Thus he may complete the core and advanced paths simultaneously. But the slow learners must complete the core modules before they start with the advanced modules.

Children who complete the basic path will have achieved the basic requirements for elementary education and are entitled to graduate. They will have passed the minimum learning essentials and be able to function as responsible youths and adults. The basic continuum, however, is strictly functional and lacks some of the more academic elements needed to prepare children for higher levels of education.

Beginning in Level IV, all peer groups follow the basic path for three hours each day. The more able pupils can undertake advanced modules during the one-hour free period and during their own time. They may be able to complete all their advanced modules, while, at the same time, progressing with their peer groups on the basic path.

The less able may need the one-hour free period to be given additional help on the basic modules which they are learning together with their peer groups. However, all students will be encouraged to undertake advanced modules whenever they are able to keep up with their peer groups during the three-hour peer group sessions.

The advanced modules, thus, provide for self-pacing through the continuum, with the more able students completing requirements for high school entry at a faster pace. But, even those children who are able to progress <u>only</u> along the basic path (staying with their peer groups) during the time available each day can still

complete the advanced modules. They can be completed during spare time and after completion of the basic path.

Thus all students obtain a thorough basic education (the basic path) while those with the interest, ability and dedication are encouraged to undertake learning preparatory to high school (the advanced modules).

Other Features:

The IMPACT curriculum also provides for the development of initial literacy skills in the native language in order to:

- provide the learner with intrinsic reinforcement in that he will be learning a grapheme-phoneme code which when applied will have meaning, thereby making the acquisition of initial literacy meaningful and relevant;
- hasten the mastery of literacy and numeracy skills and the acquisition of basic knowledge and attitudes vital to useful citizenship since these will be learned early enough in a language that the learner understands; and
- facilitate the learning of the two second languages through transfer of training since the child actually learns a grapheme-phoneme code for two (Philippine) languages

Cebuano and Pilipino -- a code which also has some application, though limited, to the English language.*

*The Philippine policy of bilingual education requires the teaching of English and Pilipino as language subjects in all grades in the primary and secondary schools. Both are second languages to the Cebuano speaker.

CHAPTER 3

THE PROFESSIONAL STAFF

In drawing out plans for the implementation of IMPACT a major concern at the start is the creation of the Project Staff. If the entire IMPACT system will be implemented allowance for research activities and curriculum development is imperative. This would suggest that the Project Staff will include the curriculum development staff and the research staff.

The organizational structure of IMPACT will as much as possible, utilize the personnel of the present school system in the division, district, and school levels. It is to be expected, however, that reassignments of teachers will be done in the district and school levels upon conversion of a school to IMPACT. Since IMPACT, as a new management system, has different roles and role expectations for its personnel from that of the present school systems, the reassignment of teachers to areas where their services are best utilized is inevitable.

ORGANIZATION

The organizational structure of IMPACT according to levels will appear as follows:

a. Division Level

1. the division superintendent

2. the assistant superintendent(s)

3. district supervisors

4. a corp of curriculum writers consisting of at least twelve (12) professionally trained teachers and a support staff of typists, printers, illustrators, and collators. The size of the support staff varies with the size of the division.

b. District Level

1. one District Supervisor for the entire district.

2. one Field Coordinator for a clusters of 5 or more schools whose aggregate pupil population is 1,000 or more, but not more than 1,500.

3. one school principal

4. one Instructional Supervisor for every one-hundred (100) to one-hundred-fifty (150) multi-level pupils.

5. two itinerant teachers for a total pupil population of 1,000 to 1,500

The Curriculum Writers

The members of the professional staff and their respective roles are as follows:

A. The Instructional Methods Expert

1. To provide professional leadership and training to the corps of module writers.

2. To assist in the quality control of curriculum materials through a review and critique of instructional strategies and evaluation techniques used in each module.

3. To suggest/develop new instructional strategies as may be dictated by teacher and learner characteristics, the skill or content to be developed, or conditions and problems existing in the community served.

B. <u>The Module Writers</u>

1. To determine the subject matter scope for each module he/she is to prepare as dictated by the module objectives.

2. To write each module draft following instructional strategies appropriate to the learning tasks and using vocabulary and sentence structures within the target learner's level of comprehension.

3. To prepare the criterion post-test, Leader's Books, and other materials needed for each module.

4. To write the block post-tests (a block consists of a series of 5-10 modules).

5. To revise the modules and corresponding post-tests as may be found necessary.

C. <u>The Editors</u>

1. To assist the writers by going over:

   a. the format of the module - whether the parts of the lessons are coherent and logically presented/ divided; and

2. b. the vocabulary and sentence structure - to determine whether the sentences are sufficiently toned down to the level of the learner and whether the vocabulary level is suitable for a particular learning level.

2. If deficiences in the above structures are identified, to give the needed assistance in order to arrive at a more desirable format and more interesting and appropriate level of language usage, without altering the content intended by the module writer.

   a. if the format needs revision, to work out the outline of that format for the writer to follow in his revision.

   b. if the deficiency is in the syntax and vocabulary, to correct such syntactic and vocabulary deficiencies.

Recruitment of Staff

The module writers, who were described as subject matter specialists were generally classroom teachers seconded to the project for full-time work. It is expected that in any replication, curriculum development will be an integral part. The same source of writers may also be anticipated.

The experience of Project IMPACT will be useful in guiding new staffs of writers.

Criteria for recruitment.

The following criteria were applied in the recruitment of module writers.

1. A qualified primary (elementary) school teacher with at least five (5) years of successful teaching experience. Additional qualifications, as much as possible, for the following members:

   a. Instructional Methods Expert: At least one year of successful administrative and supervisory and/or teaching experience in teacher-training institutions; and an elementary knowledge of project design and evaluation.

b. Editor. Demonstrated expertise/facility of expression in the different levels of usage of the language of instruction.

2. Willingness to learn and take part in innovative undertakings and research activities.

3. An above-average to superior command of the language of instruction.

The best time to recruit is from 12 to 15 months before the instructional materials are to be used in the learning centers. This much lead time is needed, both by the writers (in order that their work be not hurried; and by the classes so that supply of materials is assured).

For efficiency, the responsibility for recruiting should be exercised by the Regional Director (if on the regional level) or the School Superintendent (if on the division level) in consultation with his staff.

PRODUCTION SCHEDULING

Production schedules can be facilitated by using systematic management techniques such as the Program Evaluation and Review Technique (PERT) and the Line of Balance (LOB) production flow plan. Provisions should be made for the following considerations:

1. Allow the module writers a lead time of from 12 to 15 months (before materials are to be used in the learning centers).

2. Allow at least 40 man hours for the writing of the first draft of each module of 60 pages.
3. Allow at least 8 man hours for the critique of each module draft to determine appropriateness of instructional strategy and post-tests.
4. Allow at least 8 man hours for the editing of the language used in the module to determine grammatical clarity, and appropriateness of vocabulary and sentence structures.
5. Allow at least 8 man hours for the revision of each module after the editing.
6. Allow at least 8 man hours for the typing of the module draft.
7. Allow at least 8 man hours for the preparation of illustrations and other materials for the module.
8. Allow at least 120 man hours for the preparation and editing of block post-tests.
9. Allow from three to four months of initial and on-going training of the professional staff.

CHAPTER 4

TRAINING OF PROFESSIONAL STAFF

I. INITIAL TRAINING

The training of the professional staff of writers is especially crucial where there is no previous experience in similar work. Project IMPACT found it beneficial to give an initial training for the first three months immediately after recruitment.

OBJECTIVES OF INITIAL TRAINING

The behaviors listed under appropriate topics below are expected of each trainee.

1. The IMPACT Learning Management System

   a. Describes the rationale and philosophy of IMPACT.

   b. Contrasts the IMPACT learning management system with the conventional system on the following aspects:

      - Curriculum
      - Administration and organizational structure
      - Teacher-pupil characteristics, relationships, and roles
      - Management of learning
      - Learning materials and procedures
      - Parent/Community involvement
      - Physical plant
      - Cost effectiveness

2. Educational Technology and the Systems Approach in Education

   a. Explains the concept of educational technology.

   b. Distinguishes between the systems approach and the hardware and software approaches to education.

   c. States the basic principles of learning and their implications for the preparation of instructional materials.

   d. Shows, by means of diagram, and explains the steps necessary in developing a learning system.

3. Task Analysis and Identifying Training Needs

   a. Distinguishes between the different types of task analysis.

   b. States the main sources of information for a task analysis.

   c. Gives examples of the relationship between the components of a task analysis.

   d. Using an appropriate format, carries out a task analysis for a given cognitive or procedural task.

   e. Summarizes the uses of a task analysis.

   f. Isolates and identifies the training need(s) given a task analysis and relevant documents.

4. Behavioral Objectives

   a. Distinguishes between an aim and objective.

   b. States four reasons for specifying objectives.

c. Recognizes and discriminates between cognitive, affective, and psychomotor objectives.

d. States what words should be avoided and what words should be used when writing clear objectives.

e. Lists, and writes short notes on the three types of information essential to a clear objective.

f. Writes clear objective in each of the three domains (cognitive, affective, and psychomotor).

g. Organizes and sequences objectives into a coherent learning continuum of hierarchical modules and blocks of modules.

5. Instructional Strategies and Tactics

a. Distinguishes between strategies and tactics.

b. Identifies the classes of learning structure, types of tasks, forms of behaviors.

c. States/Identifies appropriate teaching strategies and tactics for each learning structure/task.

d. Relates a given objective to an appropriate learning structure/task and corresponding instructional strategy.

e. Makes use of an appropriate prompting technique.

f. Given modular objectives in his subject area of expertise, selects appropriate teaching strategies

and writes teaching/learning sequences that will enable the student to achieve mastery in the most effective way possible.

g. Makes use of appropriate techniques of integration.

6. Formative and Summative Evaluation

a. Distinguishes between the characteristics and uses of formative and summative tests.

b. Distinguishes between criterion test and a test of educational achievement in terms of their objectives, construction, and pattern of scoring.

c. States and explains the functions of a criterion test.

d. Constructs an appropriate criterion test from a statement of learning objective(s).

7. Managing by Learning Objectives

a. Discribes, with the aid of a diagram, the management by objectives cycle.

b. Constructs a list of the advantages and disadvantages of managing by learning objectives.

c. Observes the procedures and requirements of managing by learning objectives in the preparation of the instructional materials.

8. Programmed Instruction

a. Contrasts programmed instruction and conventional teaching in terms of their basic features.

b. Distinguishes between programmed teaching and programmed learning.

c. States and explains the basic principles of programmed writing.

d. Identifies and describes the components of programmed teaching.

e. Translates given objectives into lesson tasks and selects the appropriate content and operational programs for each.

f. Identifies different types of programmed learning materials appropriate for different types of tasks and sets of learners.

g. Discriminates between branching and linear approaches to writing programs in terms of their basic features, uses, advantages, and disadvantages.

h. Describes/Follows the logical steps in preparing programmed teaching/learning modules.

i. Given objectives and materials designed for conventional teaching, reorganizes these into appropriate programmed teaching/learning modules, observing basic principles of programmed writing.

j. Writes appropriate programmed teaching/learning modules on the basis of specific modular objectives in his area of expertise.

9. Methods of Tryout and Validity Check

a. Describes the various methods of tryouts and tests for program effectiveness.

b. Uses appropriate methods of tryout and validity check for the programmed instructional materials within the constraint of time, logistics, and personnel.

c. Refines/Revises modules on the basis of relevant feedback in order to maximize efficiency of learning resulting from their use.

Training Strategies and Activities can include the following:

1. Self-instruction on:

a. Theoretical background

b. How to write programmed instructional materials.

2. Enrichment and brainstorming sessions to supplement self-instruction.

3. Lectures/seminar workshops and practicum.

4. Examination and evaluation of existing programs.

5. Observation of existing projects that make use of programmed instruction.

For Trainors experts in educational technology, program design, instructional methods, evaluation and measurement, project design, textbook-writing for children, instructional management, etc. may be utilized.

Those who train Programmed Teachers to use the operational programs (Item Programs and Lesson Programs) which the PT's follow when they teach must be very familiar with those programs. Also, those who write or select and adapt the content teaching materials which are taught with the aid of the operational programs must be equally familiar with them. One of the easiest and best ways to become familiar with those programs is to be trained as a Programmed Teacher. Thus, both those who train Programmed Teachers and those who write material for Programmed Teaching should be trained as Programmed Teachers. A knowledge of Programmed Teaching gained through reading about it is not enough. Both writers and trainers should be trained well enough so that they could be Programmed Teachers, if necessary.

This means that the training should be done in two stages. First, the writers of programmed teaching materials and the trainer should be trained. (The writers and trainers may be the same people.) Second, the programmed teachers are trained by the trainers. The training procedure should be the same for both groups:

a. Describe and explain programmed teaching in general.

b. Describe a particular program (Lesson Program and Item Program combined).

c. Demonstrate the program, by teaching a lesson with it, using a group of trainees as pupils.

Choose lesson material (or design a lesson) suitable for a group being trained. Plan the difficulty of the lesson material so that the pupils will make some correct and some incorrect responses. Teach a complete lesson.

d. Require the trainees to teach a lesson, using each other as pupils.

e. If possible, arrange for each trainee to teach a group of primary level school children.

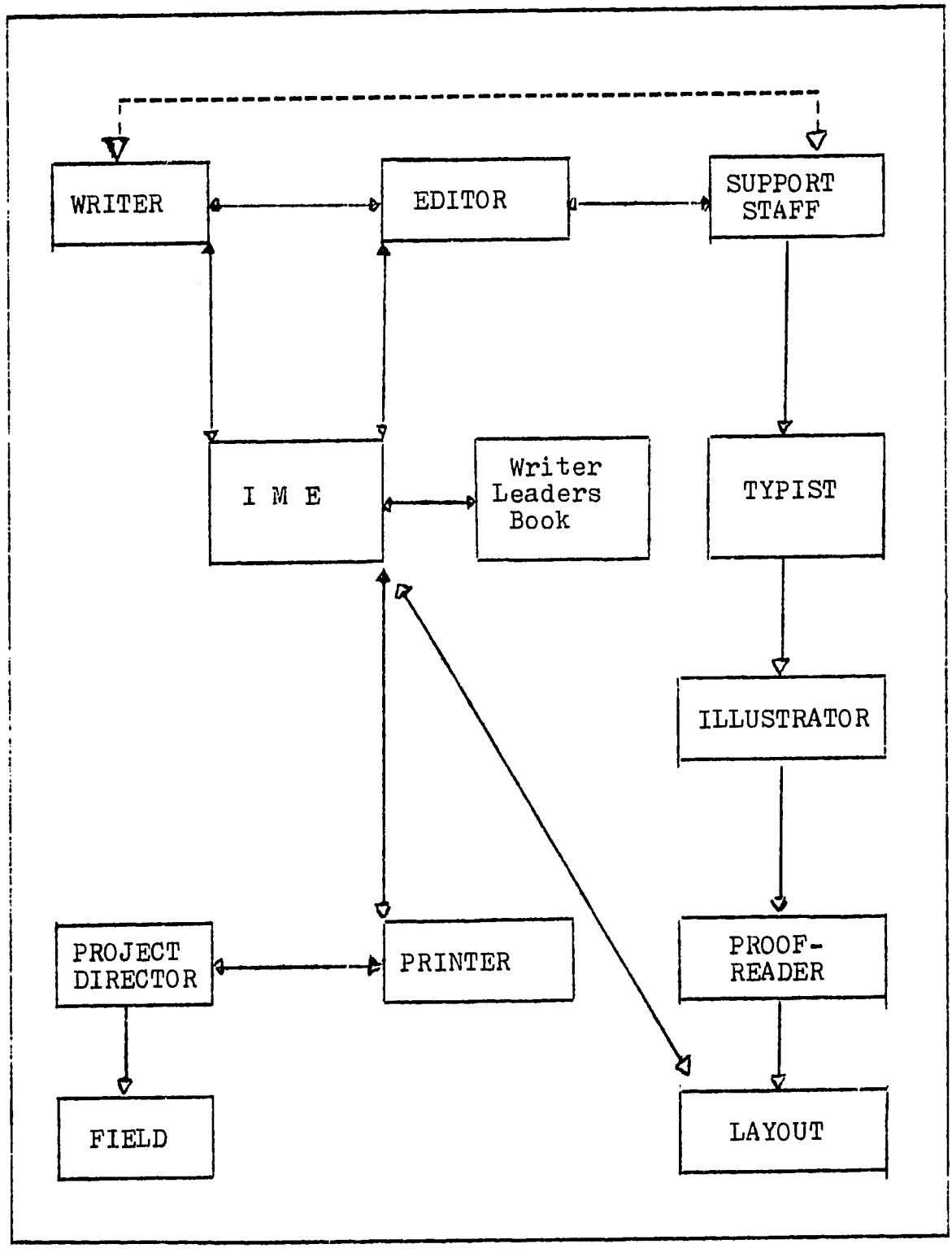
Repeat this procedure (b to d) for each program. The trainers must be trained in every program they will be required to use as trainers, as writers, or as programmed teachers.

Once the trainers have been trained, they use the same procedures (steps a to e) to train programmed teachers.

II. <u>On-the-Job Training</u>

Aside from the initial training, it is essential that the staff be given on-the-job training. For this purpose, the topics of training sessions will be as needed.

The same type of trainors as in the initial training will be qualified. These will come either as short-term consultants or resource persons requested from nearby institution for the purpose.



FLOW CHART FOR MODULE PRODUCTION

CHAPTER 5

THE DESIGN AND PREPARATION OF PROGRAMMED INSTRUCTIONAL MATERIALS

Even as a developmental project, IMPACT operated within the conventional school system. As such, its materials of instruction were based on the curriculum of the school system. The same would be true of any replication site. In designing and preparing the instructional materials for any replication, therefore, certain assumptions have to be made, similar to those made by IMPACT as follows:

BASIC ASSUMPTIONS:

1. The Ministry of Education has a prescribed set of instructional objectives for primary education.
2. External evaluation of the efficiency of the instructional materials and procedures developed for the system will be based on the minimum requirements of the existing curriculum for primary education.

EXPECTATIONS:

If the assumptions are valid, then it will be reasonable to state the following expectations:

1. The curriculum followed in the IMPACT management system is based on the existing curriculum endorsed by the Ministry of Education,

2. At specific points in the learning continuum and after completion of the curricular requirements of the IMPACT management system, the learner should achieve a level of literacy and proficiency that is at least comparable to that of his counterpart in the conventional system, as determined by his performance when subjected to valid, criterion-referenced evaluation instruments.

BASIC PRINCIPLES OF PROGRAM DESIGN:

The principles below are the more specific guides to the writing and modification or improvement of the modules as materials of instruction and learning of the IMPACT system:

1. Behavioral Objectives. The objectives should be stated in terms of observable, measurable behaviors or products expected to result from the learning process. Criterion-referenced evaluation is possible only when objectives are stated in behavioral terms.

2. Task Analysis. The instructional designer needs to know the constituent parts of the learning task (analysis) and how these are related and organized (synthesis) so that he will be able to (1) justify what he intends to teach, and (2) decide on the best teaching strategy.

3. Optimum-sized steps. The nature of the learning task will determine the size of the steps in which the content is to be

presented. As a rule, the smaller the steps, the easier it will be for even the slowest learner to master a lesson, but care should be taken to avoid too small steps that may result in rote learning where a higher level skills is desired.

4. Minimal error. A programmer should try to bring out the correct response because the student learns the responses he makes.

5. Knowledge of results. When a learner makes responses and is told that his response is correct, this knowledge can serve as a reinforcer for the correct response. If his answer is incorrect, he must be told to correct it in order for him to learn the correct answer.

6. Active responding. In order to learn, a learner has to attend to the materials presented to him. One way to command his attention is by requiring him to make some type of active response, such as answering test exercises presented to him or performing something as directed by the program.

7. Self-pacing versus group pacing. Programs for self-instruction allow the student to learn and progress at his own rate. Programs for group instruction or group learning allow the student to progress according to the group rate as dictated

by the slowest learner in the group. Making provisions for both types of programs throughout the learning continuum will help offset whatever disadvantages obtained from the exclusive use of either one.

8. Validity check (program effectiveness). When a program is prepared there is a need to check (test) if it teaches what it is trying to teach. Nobody can judge whether the program provides enough information and practice just by looking at it. It is necessary, in order to judge the program, to examine the learners' performance. If the learners perform well, then and only then, can the program be judged to be good.

   The degree to which reality will deviate from the ideal, as far as validity check and number of tryouts are concerned, however, largely depends upon the constraints of time, logistics, and personnel. Some assurance of validity can be achieved by a system of review and editing before tryout and revision.

9. Interesting and Appealing. The module should be oriented to the real world. (In the case of IMPACT, the Cebu environment was the source of examples).

10. Comprehensive coverage. Modules should take every opportunity to educate in the most general sense - cognitive, affective and psychomotor, and in the refinements of quality of life.

GENERAL PROCEDURE FOR WRITING PROGRAMS

Some general procedures in the writing of IMPACT modules were observed by the subject specialists:

1. Formulate the Objectives:

   Objectives should be formulated first for the following reasons:

   a. They specify what the learner has to be able to do.

   b. They help decide which content is relevant to the skill or behavior the learner has to acquire.

   c. The instructional activity will depend largely on the skill that the learner has to develop as specified in the objectives.

2. Write the Criterion tests to be given at the end of instruction to determine mastery of the objectives.

   Criterion tests should be written before determining or finalizing the content and strategies of instruction because:

   a. They help to determine content and instructional strategies;

   b. They predict the student's ability to perform the desired behavior; and

   c. They are the means by which the instruction to be designed is going to be evaluated.

3. Determine the content and identify the learning resources and strategies that can be used to attain the objectives.

Some possible learning resources are:

a. Curriculum guides, readers, articles and pictures from newspapers and magazines and other printed materials.

b. Films, slides, filmstrips, radio, audio recordings, and other audio-visual materials.

c. Laboratory facilities, specimens, instruments, etc.

d. Places of interest or activity, community resources, persons, other students, parents, etc.

A WORD OF CAUTION: Any decision regarding the use of hardware in the instructional activity should be made in consultation with the project staff.

STEPS IN THE DESIGN AND PREPARATION OF THE PROGRAMMED INSTRUCTIONAL MATERIALS.

The activities enumerated below are to be carried out as a cooperative effort of the professional staff (module writers and editors) under the leadership and supervision of the trainor, or the Instructional Methods Expert.

Step 1. Determine the Instructional Objectives.

a. The formulated objectives and themes should be in line with the national development goals. These serve as the unifying elements running through the entire learning continuum -- the goals presenting a general picture, as it were, of the

kind of individual desired as a result of education, and themes reflecting graduated levels of involvement and participation as the child progresses through the continuum.

Following is an example within the Philippine context.

Goals

General: To provide experiences (direct and vicarious) designed to enhance the development of the new Filipino.

Specific:

1) To develop knowledges, skills, and attitudes that will enhance the development of a citizenry that is literate, productive, scientific, and progressive.

2) To instill desirable moral and spiritual values and enhance pride in ones heritage and national identity.

Overall Theme: The New Filipino

Sub Themes for different learning levels:

1 Beginners - The Filipino Family

2 Transition Learners - The Filipino Community

3 Peer Learners - The Filipino and His Country

4 Peer Learners - The Filipino and the World

b. Copies of curricular objectives, curriculum guides, teachers manuals, etc. prescribed by the Ministry of Education are useful resources.

c. Determine which objectives are "essential" (needed for literacy and/or in preparation for secondary schooling); and which are "non-essential".

Suggested techniques:

1) Writers take turns reading (orally) sets of objectives, calling out each objective one at a time while the others go through the other lists, guides, or manuals for a similar objective.

2) Group arrives at consensus as to whether the objective read is essential or non-essential. (Follow this procedure for all the objectives in existing lists, crossing out those considered non-essential, leaving only those essential for finalizing in subsequent steps as described below).

3) Group determines other training needs of the students, if any, which are not yet provided for and which should be included in the listing of objectives.

4) Three or four of the writers are assigned to write down all the essential objectives on 3 by 5 inch cards which two other writers are to lay out by subject and grade.

are to lay out by subject and grade* level on a long table. The rest of the group may start gathering textbooks, readers, references, and other curriculum materials that may be needed for the actual writing of the modules later on.

Step 2. Sequence/Rearrange the Cards (on which the objectives have been written) according to the following guidelines:

a. Follow a single path or stream for all the basic objectives ("priority" objectives for functional literacy) and a separate but supplementary path for all the advanced objectives (enrichment and preparatory to secondary schooling although not essential for functional literacy).

b. Observe graduated difficulty in the sequence. Skills development and content learning should proceed from sinple to complex.

c. Prerequisites are to be taught/mastered before introducing new learning.

d. Avoid repetitious teaching. Remove cards with objectives that simply duplicate previous ones.

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*It is expected that objectives in existing curriculum guides listed according to grade levels and by subject areas such as Communications Arts (Language & Reading), Mathematics, Social Studies, Science, etc., are available.

e. Identify objectives from content subjects which may be integrated with skill objectives and vice versa. Put these cards (on which the objectives are written) together, keeping the sequence of either the skill or the content, whichever of the two involves new learning.

f. Make provision for at least three applications, immediate and delayed, of basic skills taught by observing the learn-practice-use-use-use sequence.

Technique suggested for Step 2: Use a procedure similar to the first two steps suggested for classifying the objectives as essential or non-essential in Step 1-c above.

Step 3. Classifying the Objectives by ta[illegible]r behavior

a. See to it that all the objectives are stated in behavioral terms; if not, restate accordingly.

b. Identify each task as: discrimination, chain, concept, generalization, etc. Write this information on one of the corners of the card, preferably on the upper right hand corner.

Step 4. Select from known instructional strategies one most appropriate for each task. (If a new strategy is needed, the decision may be postponed for further study or

later brainstorming as may be found necessary.) Write the name/description of the strategy selected briefly under the information on the type of task as indicated in Step 3 above.

Step 5. Organize related/continuous objectives into modules, with the average of 20 lesson objectives per programmed teaching module and from 3 to 5 objectives per peer learning module, and assign module numbers. Care should be taken to plan the number of modules such that the slowest learner can finish at least the basic modules within the period ordinarily alloted for primary education, in terms of number of school days, preferably with an allowance of from 20 to 30 days for absences per school year. (A lesson objective is to be the basis of content and learning activities designed to take approximately one hour of instructional time.)

Step 6. Prepare draft copies (typed or mimeographed) of the tentative learning continuum on the basis of Steps 1 to 5 above. Provide each member of the professional staff with a copy to review for purposes of editing, polishing and/or revision. Decisions to this effect should be the

result of brainstorming sessions which should not exceed once a day. Minor changes may simply be noted by individual members on their copy of the learning continuum. Major revisions may necessitate changing whole pages, but it is expected that there will be very few major changes needed, if the previous steps were done as thoroughly as possible.

Following are the formats suggested for organizing the learning continuum:

a. The first format is suggested for the programmed teaching part of the learning continuum which requires the specification of item programs, lesson programs. These are not indicated for the programmed learning modules to be used for peer learning or self-instruction.

b. The second format is suggested for the second part of the learning continuum that will cover the programmed learning modules for transition/peer learning or for self-instruction.

Step 7. Assign module numbers to each writer. He/She is to prepare the modules for the numbers assigned to him/her. The writers may simply agree among themselves which modules they will write. The important thing to consider is that the work load is distributed equally among the writers in order to avoid production lags later on (not to mention tensions that may result from unfair distributions).

MODULE AND LESSON NO.	TITLE AND OBJECTIVE (S)	CONTENT & ITEMS	TASK	ITEM PRO-GRAM	LESSON PRO-GRAM	MATERIALS/ REMARKS
Module 1 Lesson 1	O ORIENTATION	Places/ Persons in the learning center	SCRIPT	SCRIPT	SCRIPT	To be conducted by the I.S. in the native language
	- Shown a place/thing in the learning center, the child can give its name and use orally	Learning Center Library Kiosk Testing Center etc.	What's THIS/ THAT? How is it used?			
	- Given the name of one of the staff or community volunteers, the child tells what he or she does in the learning center.	Instructional Supervisor, Instructional Aide, Programmed Teacher, etc.	What does _____ do?			
Lesson 4	COUNTING (1-5)	Number Names: <u>one</u> to <u>five</u>	Count these things aloud	SIP	ROUNDS	Real objects in set of 5
	- Give a set of five objects, the child counts them aloud, saying the correct number, names, etc.	-5 stones -5 leaves -5 sticks -5 marbles				

LEARNING CONTINUUM MODEL (PART I)
(SYLLABUS PROGRAM FOR PROGRAMMED TEACHING)

MODULE AND LESSON NUMBER	TITLE	OBJECTIVES		SUBJECT INTEGRATED					REMARKS
		SKILL	CONTENT	Lang.	Read.	Math.	Social Studies	etc.	

Use the following symbols to indicate when the skill/content is first taught and how often. it has been used.

T = First Teaching
U-1 = First use/application after teaching
U-2 = Second use/application after teaching
U-3 = Third use/application after teaching

LEARNING CONTINUUM MODEL (PART II)
(FOR LEARNING MODULES)

PEER GROUP

CHAPTER 6

DESIGNING PROGRAMMED TEACHING MATERIALS

Programmed teaching is a recently-developed form of educational technology in which subject matter, materials and teaching techniques are integrated through carefully designed and tested procedures. The use of this technology makes it possible for persons with no more than elementary schooling to teach as well as, or better, than the average professional teacher. The "unqualified" teachers may include professionals in fields other than teaching, technicians with specialized knowledge and skills and even laymen with low educational attainment.

Programmed teaching, which represents the culmination of a trend toward increasing the support provided for the classroom teacher, has taken a number of forms. In Project IMPACT, it is the primary mode of learning of Levels I-III pupils. The programmed teachers are upper elementary level pupils (Levels IV-VI) who have already attained mastery of the basic literacy and numeracy skills. For pedagogical reasons, Level VI pupils are assigned to programme teach in Level I; Level V pupils programme teach Level III pupils; and Level IV pupils programme teach in Level II.

Each programmed teacher handles a group of 4 to 8 pupils of mixed sexes for one hour each day - one half hour of teaching and another half hour of tutoring the slow learners in the group. Tutoring of the Levels I-III pupils is also done at times by Instructional Aides.

In programmed teaching, as the name implies, the "Programmed Teacher" strictly follows a pre-arranged plan or program in detail. The program prescribes not only what is to be taught - as syllabi and lesson plans do - but also specific procedures for teaching it. In view of the fact that the programmed teachers for the beginning learners are only upper level children (and hence "unqualified non-professionals") the nature of the programmed teaching modules require only one task per lesson to be applied to a given set of items.

The program is planned in detail by the team of subject matter experts. The design is repeatedly tested and revised in tryouts with representative samples of the pupils and teachers for which it has been designed. It is the transfer of responsibility for overall and detailed planning of teaching procedures from the teacher to an empirically validated program or course of instruction which makes it possible to utilize non-professionals successfully for the teaching role. In Project IMPACT, this course of instruction is presented in a series of units or "programmed teaching modules".

In a way, the designer of programmed teaching modules may be likened to the composer in music; the modules to the musical score; and the programmed teacher to the performer. The latter does not need to know how to compose the score but he does need to be trained to follow and interpret it.

THE PROGRAMS IN GENERAL

There are two general types of programs used in programmed teaching: (1) the content program, which specifies what is to be taught, and (2) operational programs, which specify teaching procedures.

1. The Content Program. The IMPACT content programsis translated into the form of a syllabus program which serves as the module writer's detailed guide in writing each lesson that goes into a programmed teaching module.*

   The syllabus program, specifies the following for each planned programmed lesson: Module and lesson number, title, objective(s), content/items, item program, lesson program, and materials needed.

2. The Operational Programs. Operational programs specify how teaching is to be done.

   There are two types of operational programs.

   a. Item Programs specify the actual procedures for teaching, including: a) the way material is presented, b) what

*This is a modification of the original concept of content and syllabus programs as first developed by Dr. D. G. Ellson, INNOTECH's external advisor on programmed teaching. This modification became necessary with the decision to adopt a single-line integrated learning continuum that required the module writers to prepare integrated lessons/modules.

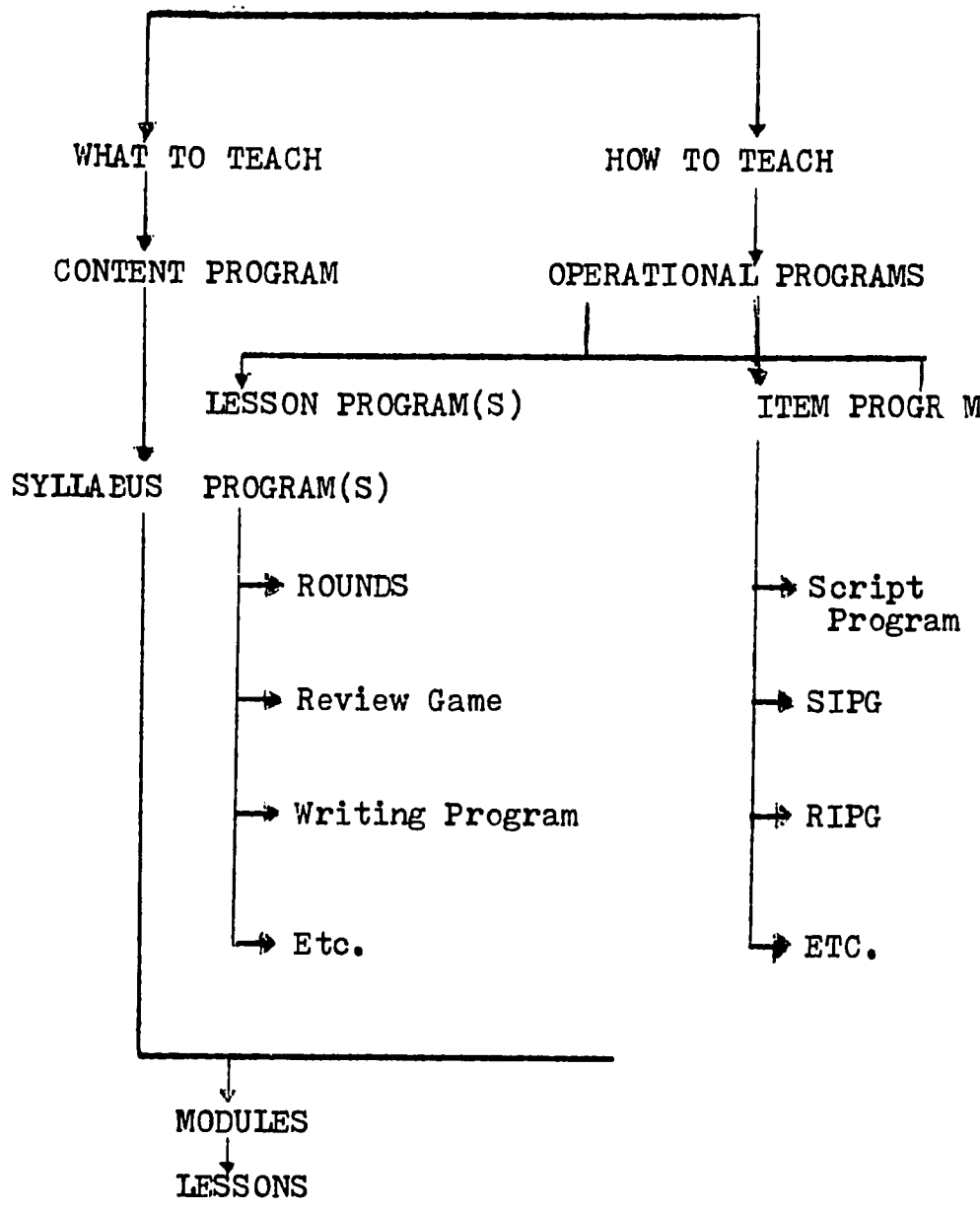
the pupil is required to do, and c) what the teacher does when the pupil succeeds and what the teacher does when the pupil fails. The item program is always used together with an item. An item is a single, unitary task and/or the material necessary to teach it. It is a single example of a skill or skill component or it represents a single small part of a body of information that the pupils is to be taught. A total skill is taught by applying the item program to many examples; a total body of information is taught by applying the item program to many parts of that information. Every example or every part might be taught with a single item program, but more usually the examples or parts are taught in a variety of ways, that is, they will be taught with the aid of several item programs.

b. Lesson Programs specify procedures for teaching lessons, each of which consists of several items - usually not more than 15. All of the items in a single lesson are usually taught with the same item program, although sometimes more than one item program may be in a single lesson.

Lesson programs specify: a) the order in which the items are presented, b) how many times each item is

presented, c) the "stop criterion" the duration of the lesson or the conditions that must be satisfied before the lesson is finished, and if a group of pupils is being taught, d) how to select the pupil or pupils to whom each item is presented, e) how many items to present to each pupil in the group, and f) when to stop presenting items to each pupil in the group.

The following diagram presents the components of programmed teaching.



THE COMPONENTS OF PROGRAM TEACHING

THE ITEM PROGRAMS

An item program is a procedure for teaching the performance of a lesson or task with a single item. The procedure of each item-program is designed to be used with many different tasks and any item appropriate to the task.

Examples of tasks and items:

1. The teacher says POINT TO THE LETTER A. The lesson task is to point to one letter in a set of letters, which in this case must include the letter A or a.
2. The teacher points to a sentence (the items) and says, READ THIS SENTENCE (the lesson task).
3. After the pupil has read a story about the mouse-deer, the teacher asks, WHO ATE THE RICE? (This question is the item. The task is to answer the question from information in the story).
4. The teacher points to a word (the item) and says, WHAT ARE THE SOUNDS OF THE LETTERS IN THIS WORD? (the task is to answer the question by giving the sounds of the letters in sequence).

There are many item programs, each used for a different purpose. However, all of them have the same basic form, which consists of four steps:

Step 1. A test step. The teacher (T) presents a task to be performe

with a single item:

a. If the pupil performs the tasks correctly, T praises the pupil and goes to step 4.

b. If the pupil does not perform the task correctly, T goes to step 2.

Step 2. A teaching step. The teacher demonstrates the correct response or teaches those parts of the task that the pupil did not perform correctly in step 1.

For example, if the task was to read a 5-word sentence and the pupil failed to read two words. If the pupil could not read any of the words in the sentence, T should teach all of the words.

Step 3. A test step. This step presents the same task as step 1.

a. If the pupil performs the task correctly, T praises the pupil and goes to step 4.

b. If the pupil deos not perform the task correctly, T demonstrates the correct response and goes to step 4.

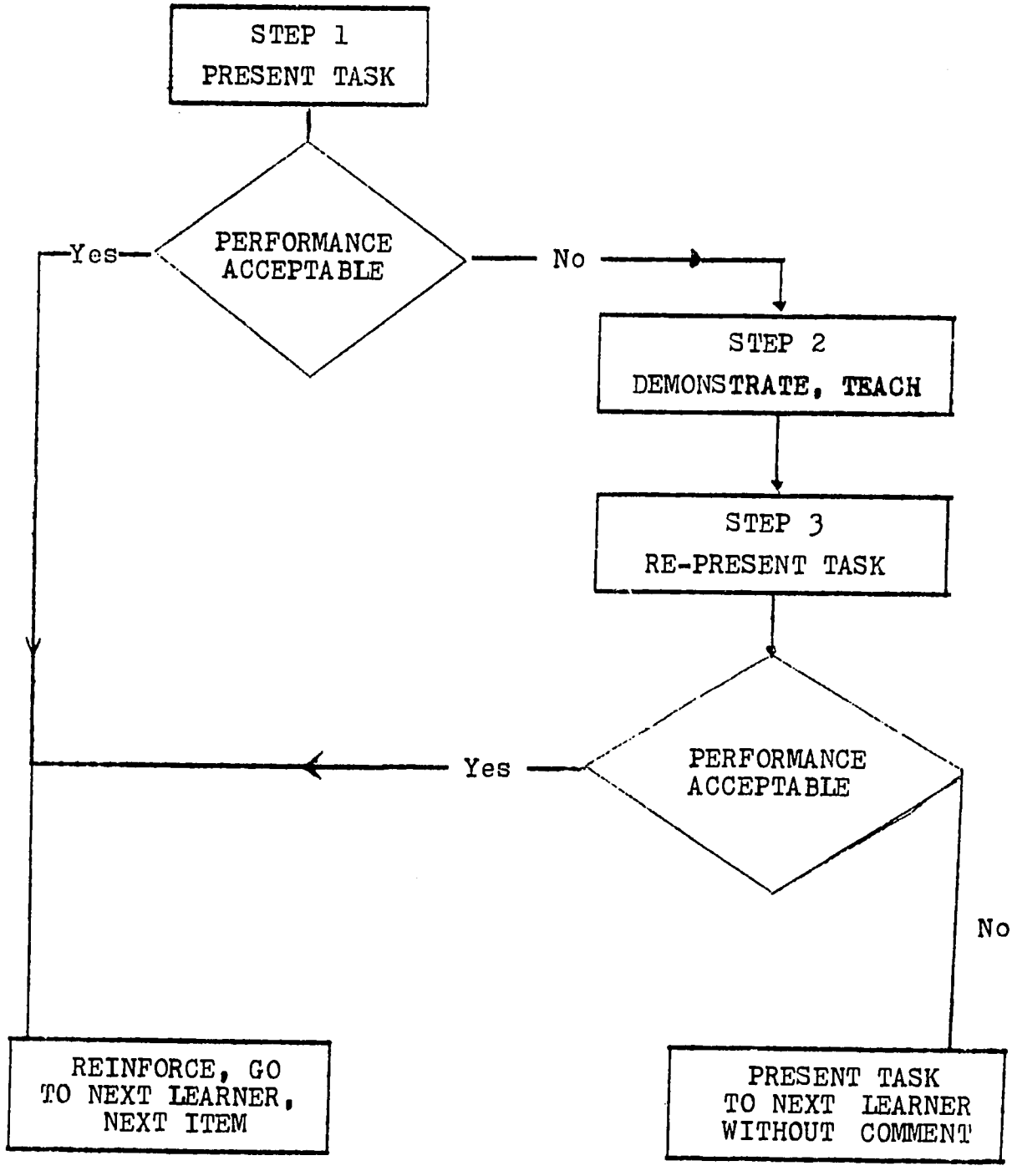
Step 4. The teacher asks the group to perform the task which the pupil has just performed correctly in Step 1 or T has just demonstrated in Step 2.

NOTE: Step 4 is omitted when the program is used for individualized tutoring, and it may also be omitted in some cases of group

tutoring, for example, in chaining, when the program is followed by another item program applied to the same item. It is also omitted when the task requires the pupil to point.

There are several types of item programs: (1) the Script Program, (2) the Group Teaching Program (GTP), (3) the Simple Item Program for Groups (SIPG), (4) the Reading Item Program for Groups (RIPG), (5) the Word Sounding Program for Groups (WSPG), (6) the Comprehension Item Program for Groups (CIPG), a chained program for reading comprehension, (7) the Chain Program for Problem Solving (CPPS)* a chained program for solving word problems and (8) the Writing Program (WP), a combined item and lesson program.

*The chained program for solving word problems is not among those in Dr. D. G. Ellson's original list of basic item programs. This special chained program was added by the writer of this Manual to meet the needs of learners in Naga Project IMPACT.



FLOW DIAGRAM OF BASIC ITEM PROGRAM

1. Script Program

This Program is used only for special purposes, such as an introduction/orientation on the first (few) days of school; to make special announcement, etc.

This program will be very seldom used. It is difficult to write and will ordinarily require many pages of instructions than other programs.

The script program has no standard form. It is simply a set of instructions in ordinary language, telling the Programmed Teacher (PT) what to do. It may include:

a. Instructions to the PT.

b. Announcements to be read by the PT.

c. Dialog between the PT and the students. If so, the script will tell the PT what to say first to the students, what questions to ask, etc.

d. Stories to be read by the PT (for example, stories containing the words that the students will read in the next reading lesson).

Although the script program has no standard form, there are rules for writing and using the script:

a. For any activity it should provide very complete instructions for the PT. It should not require the PT to make professional

judgements concerning, for example:

(1) The ability of pupils.

(2) The appropriate content for stories.

(3) What type of questions to ask. If the script requires the PT to ask questions, the questions should be included in the script. At least, very clear examples should be given.

(4) What information to present - and the words necessary to present it. In other words, the PT should read rather than talk, in most cases.

(5) The amount of detail to present. The script should tell him exactly what to say.

(6) If the script tells the PT to start a discussion, it should also tell him how to start it, for example, by giving him questions to ask the students, such as:

How old are you?

How many are you in the family?

Is your father a farmer?

What does he grow?

Do you help him? What do you do?

What games do you play?

b. The PT should follow the script exactly. He should not omit parts of it or add material of his own, with the following exceptions:

(1) In case the students ask questions, the PT may answer them, but if he does not know the answer, he should:

- Admit he does not know
- Take the students to a regular teacher or the I.S. to get correct answer.
- Show or tell the pupil where to find the answer.

(2) The PT may repeat parts of the script if the students do not understand.

2. Group Teaching Program (the traditional method)

The primary purpose of this program is to give poor or shy students confidence by providing many opportunities to learn the correct response before they are required to respond individually. The program will ordinarily be used only at the beginning of instruction or at the beginning of a block of lessons. It will ordinarily not be used as the basic method of teaching since it has three defects:

a. It gives good students the most practice and allows poor students to respond to the wrong stimulus (i.e., to imitate the teacher, which is not what the student must do when he

reads) or to avoid responding at all on most trials.

b. It may reward a student for an incorrect response or for not responding.

c. On most trials it does not provide the teacher good feedback on the performance of each pupil.

The group teaching program may be used to teach any task that requires the pupil to give an oral or motor response, for example:

a. Answer questions.

b. Read a letter, word, sentence, etc.

c. Perform a motor task, e.g., keep time with a drum.

A typical outline for the Group Teaching Program follows: (to teach reading of the sentence, "Mother has a new dress".)

Step 1. The Programmed Teacher (PT) presents the task: e.g.,

I WANT YOU TO READ THIS SENTENCE

PT points to the sentence on the blackboard: "Mother has a new dress".

Step 2. The PT performs the task, providing a model: e.g.,

PT says: "MOTHER HAS A NEW DRESS".

NOW CLASS _____

The class reads the sentence:

<u>Mother has a new dress</u>.

Step 3. PT: GOOD, NOW, THE CHILDREN ON THIS SIDE (Points to left) Children on left hand side, repeat: "MOTHER HAS A NEW DRESS".

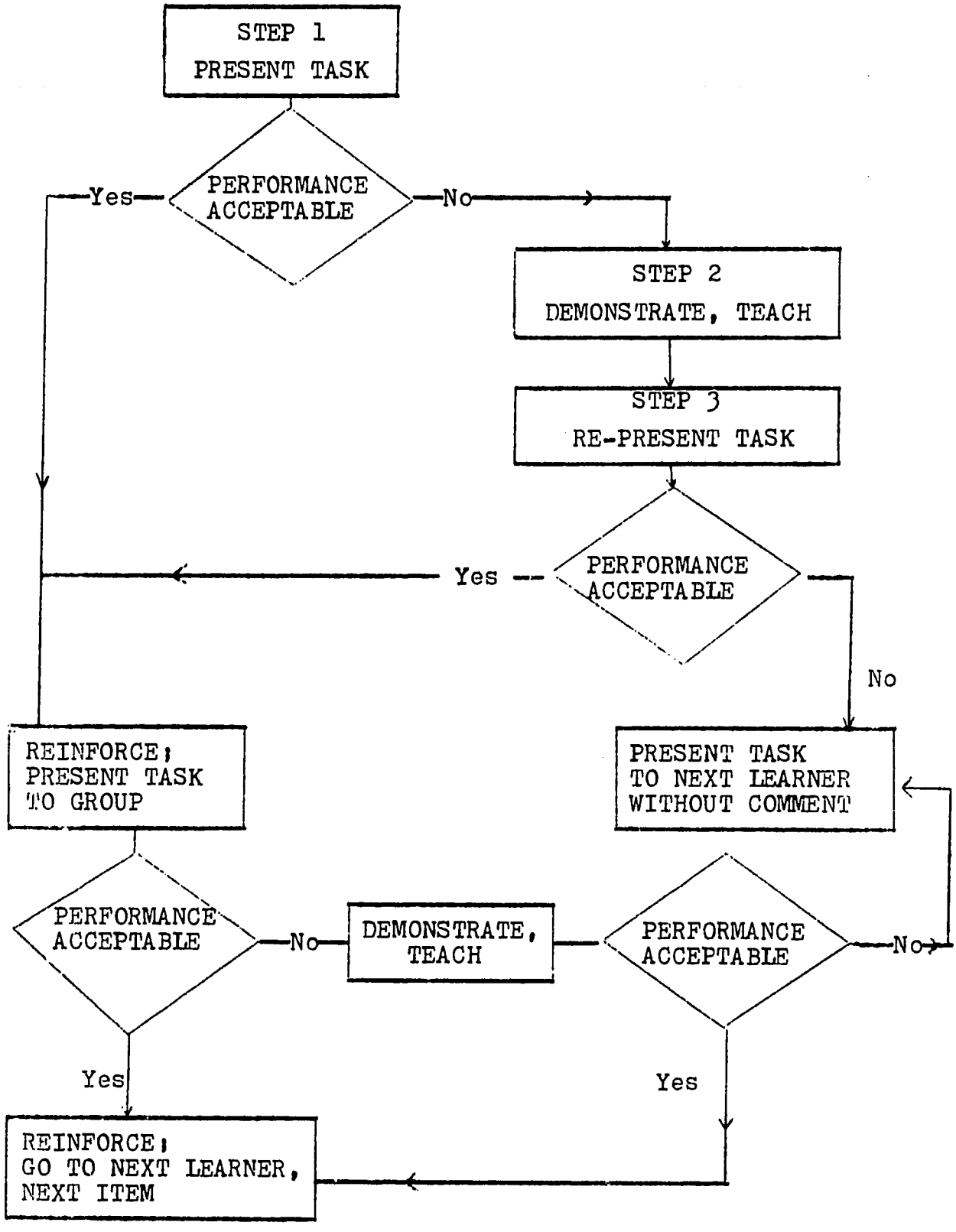
Step 4. PT: GOOD, NOW THE CHILDREN ON THIS SIDE (Points to right). Children on right hand side repeat: "MOTHER HAS A NEW DRESS".

Step 5. PT: GOOD, NOW JOSE, READ THE SENTENCE. (Jose is chosen first because he is a good reader.) Jose reads the sentence: "Mother has a new dress".

Step 6. Repeat Step 5 with <u>all other children</u> in the group, calling on the slower reader last.

NOTES:

1. The actual words that the PT is required to say are written in capital letters.
2. In Steps 3 and 4, the group may be divided into boys and girls.



FLOW DIAGRAM OF ITEM PROGRAM
WITH GROUP RESPONSE

3. Simple Item Program for Groups (SIPG)

This Item Program is used when the lesson task is simple, i.e., it is a single task not requiring analysis into parts. In this program, Steps 2 and 3 are combined into one step.

Step 1. Test Step.

PT presents the task by giving the task instruction or by asking question. For example, PT says: POINT TO THE LETTER A, or WHAT IS THIS WORD?

a. If the pupil responds correctly, PT praises him and goes to Step 4.

b. If the pupil does not respond correctly, PT goes to Step 2 without comment.

Step 2-3 Teaching and Test Steps.

PT demonstrates the correct response and asks the pupil to do the same, for example, PT points to the letter A and repeats the task instruction in the same or different form, e.g., by saying, NOW YOU SHOW ME, or PT says, THAT WORD IS ... NOW YOU SAY IT. When the pupil does so, PT goes to Step 4.

NOTE: If the response is to point, Step 4 is omitted since the group can not point effectively.

Step 4. Group Response.

a. PT asks the group to repeat the correct response, for example, by saying, NOW, EVERYONE - ; NOW, ALL OF YOU, or by gesturing.

b. If all or most of the group respond correctly, PT praises them.

If few or none of the group respond correctly, PT repeats the correct response until they do so.

4. Reading Item Program for Groups (RIPG)

The Program is used primarily for analysis of a sentence into words and re-synthesis of these to the sentence. It can be used for this purpose in two ways:

a. If the lesson consists of a list of sentences each sentence is labelled as an item, the program is applied to each sentence (item) separately, one at a time.

b. If the lesson consists of continuous text, for example, a paragraph or story in which the sentences are not labelled as items, the pupil is allowed to read without interruption until he makes a mistake. The sentence in which he made the mistakes then becomes an item, to which the item program is applied. In this application, Step 4 is omitted.

(Modification made: Step 4 will be omitted for the paragraph or story but will be included when reading a sentence that becomes an item and to which the item program is applied.)

Step 1. Test Step.

Present the task, for example, say, CAN YOU READ THIS?

a. If the pupil reads correctly, praise him and go to Step 4.

b. If the pupil does not read the sentence or if he makes errors on some of the words, require him to try to complete the sentence, trying every word. Then go to Step 2.

Step 2. Teaching Step.

Apply teaching procedure to each word that was not read in Step 1 or that was not read correctly. Teach the words that were missed in alphabetical or mixed order, not in the order they appear in the sentence.

Procedure for teaching each word:

Say, WHAT IS THIS WORD? (PT should point to it.)

a. If the pupil reads it correctly, praise him and go to the next word to be taught.

b. If the pupil does not read correctly, say THAT WORD IS ... NOW YOU SAY IT.

When the pupil says the word, praise him. Repeat this teaching procedure with each word missed in Step 1. (This may mean that you repeat the procedure with each word in the sentence.) Then go to Step 3.

Step 3. Test Step.

Say, NOW CAN YOU READ THE SENTENCE?

a. If the pupil reads it correctly, praise him and go to Step 4.

b. If the pupil does not read the sentence correctly, read it to him, and say, NOW YOU READ IT. Then go to Step 4.

Step 4. Group Response.

Ask the group to read the sentence in unison. Say, NOW ALL OF YOU READ IT.

a. If most of the group read it correctly, praise them.

b. If none of the group or only a few members of the group read it correctly, read it to them. Then ask the group to read it. Say, NOW, ALL OF YOU ...

5. Work Sounding Program for Groups (WSPG)

This program is used to analyze words into their components, letters or syllables, and to re-synthesis (sound out) the words.

The program can be used in two ways:

a. If the lesson consists of a list of words, Steps 1, 2, 3, and 4 of the program are applied to each word separately, according to the Rounds Program*

b. If the lesson consists of a continuous text, for example, a paragraph or story, the pupil is allowed to read without interruption until he makes a mistake or comes to a word that he can not read. That word then becomes an item, to which Steps 2, 3, and 4 are applied (Step 1 is omitted.) After Step 4, the pupil starts again at the beginning of the sentence in which he made a mistake and continues reading until he makes another mistake.

Step 1. Test Step.

PT presents athe task, for example, by pointing to a word saying: CAN YOU READ THIS WORD?

a. If the pupil reads it correctly, PT praises him and goes to Step 4.

b. If the pupil does not read it correctly, PT goes to Step 2.

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*Please see page 82.

Step 2. Teaching Step

a. Say, WHAT IS THE WORD? (Point to it.) If he answers correctly, praise him and go to the next page. If not say:

b. WHAT ARE THE SOUNDS OF THE LETTER? Tell him the sound he does not know. Then say:

c. SAY THE SOUNDS OF THE LETTERS AGAIN. FASTER.

Step 3. Test Step.

NOW, WHAT IS THE WORD? If the pupil gives the word on any of the prompts, a to d, use no more prompts. Praise him and go to Step 4.

If he does not give the word on prompt e, sound the letters for him and say: THAT WORD IS ---- NOW SAY IT. When he does so, praise him and go to Step 4.

Step 4. Group Response.

Say to the group: NOW, ALL OF YOU, SOUND OUT THE LETTERS, THEN SAY THE WORD. If necessary, demonstrate.

a. If all or most of them answer correctly, praise them and repeat the answer. Then go to the next word or item.

b. If a few or none of the pupils answer correctly, give the correct answer and require the group to repeat it. Say the sounds of the letters, then the word. Then say, NOW YOU SAY IT. When they respond correctly, praise them or have them continue reading.

NOTE: In Steps 2 and 4 an alternative procedure for sounding-out may be used - the Say-slide procedure:

In this procedure, instead of giving the sound of each letter, PT simply says the word very slowly and clearly, emphasizing each sound. As he sounds the word he also points from left to right. It is usually best to point from above the word.

Alternative Steps 2 and 4 based on the say-slide procedure for sounding-out are given below:

Step 1. Test Step - Unchanged

Step 2. Teaching Step.

a. Point to the word and say: LOOK AT THIS WORD. When the pupil looks at it, point-slide as you say-slide (pronounce the word very slowly and clearly as you slide your finger slowly pass above it): <u>Say slowly</u>:

B = A = T = A. That WORD is BATA.

NOW YOU SAY IT

When the pupil pronounces the word at normal speed, praise him and go to Step 3.

Step 3. Test Step - Unchanged.

Step 4. Group Response.

Say the word first slowly and clearly, then again at normal speed. Then say: NOW, ALL OF YOU, REPEAT. Praise them and go to the next word (have the pupils continue reading.)

6. Comprehension Item Program for Groups (CIPG)

This program is used to teach comprehension of oral questions. It has two stages, the first being reading, taught with the RIP program (Step 4, Group Response, omitted).* The second stage is comprehension, taught with the SIPG program. The second stage is taught only if the pupil is successful in reading the material taught in the first stage, i.e., if he gives a correct response on Steps 1 or 3. If he is not able to read this material, the teacher goes to the next item, calling on another pupil.

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*An item program for groups is used with individual pupils by simply omitting the step for group response - hence, SIP, RIP, and CIP may be used in lessons where the group response is not desired.

The Program

Stage 1, taught with RIP:

Step 1. Test Step.

CAN YOU READ THIS (SENTENCE)?

Step 2. Teaching Step.

Teach each word missed on Step 1. Say, WHAT IS THIS WORD? If he does not answer correctly, say, THIS WORD IS ... NOW YOU SAY IT. When all words missed in Step 1 have been taught, go to Step 3.

Step 3. Test Step.

NOW, CAN YOU READ THIS?

Go to Stage 2.

Stage 2, taught with the SIPG:

Step 1. Test Step.

Teacher asks the item/question.

Step 2. Teaching Steps.

Teacher gives the answer.

Step 3. Test Step.

Teacher repeats the question. If he does not answer correctly the teacher gives the answer.

Step 4. Group Response.

Teacher says, NOW, ALL OF YOU, WHAT IS THE ANSWER?

7. Chain Program for Problem Solving (CPPS)*

This is a chained program used for lessons that call for solving simple one-step word problems in mathematics. This is a simplified teaching procedure used mainly with beginners. (A more detailed procedure for solving more complex problems is used by the older learners in transition and peer learning.) When using this program, all that the PT needs to do is to follow the usual steps for the basic item program given for each of the four stages and tasks that make up the chain.

The Program

Stage 1, taught with RIPG

Step 1. Test Step.

READ THE PROBLEM.

Step 2. Teaching Step.

Teach each word missed on Step 1. Say, WHAT IS THIS WORD? If he does not read correctly, teach the word or use the say-slide procedure. When all the words missed in Step 1 have been taught, go to Step 3.

*This chained program is not among those originally developed by Dr. D. G. Ellson, although it makes use of several of his basic item programs.

Step 3. Test Step.

Say, NOW, CAN YOU READ THE PROBLEM?

a. If the pupil reads it correctly, praise him and go to Step 4.

b. If the pupil does not read the problem correctly, read it tohim and say, NOW, YOU READ IT. Then go to Step 4.

Step 4. Group Response.

Ask the group to read the problem in unison. Say, NOW. ALL OF YOU, READ IT.

a. If most of the group read it correctly, praise them.

b. If none of the group or only a few members of the group read it correctly, read it to them. Then say, NOW, ALL OF YOU ... Go to Stage 2. Call on another pupil.

<u>Stage 2, taught with SIPG, (oral response desired.)</u>

Step 1. Test Step/Task.

WHAT SHOULD WE DO TO SOLVE THE PROBLEM?

Steps 2-4.

Follow the usual procedure for SIPG. Go to Stage 3. Call on another pupil.

Stage 3, taught with SIP

Step 1. Test Step/Task.

WRITE THE SOLUTION ON THE BLACKBOARD.

Steps 2-3.

Follow the usual procedure for SIPG but without the group response. Go to Stage 4. Call on another pupil.

Stage 4, taught with RIPG

Step 1. Test Step/Task.

READ THE PROBLEM AND THE COMPLETE ANSWER.

Steps 2-4.

Follow the usual procedure for RIPG.

NOTE: One pupil is asked by the PT to do the task for one stage. It will, therefore, take at least four different pupils to complete the chain of tasks for one item or word problem.

8. Writing Program (WP). This is a combined item and lesson program.

This program is designed to teach three writing skills - tracing, copying and writing from dictation.

This program differs from the others in that it does not require the pupils to perform individually while their performance is being observed by other members of the group. Instead, all the pupils in the group perform the required tasks at the same time. Since

writing provides a permanent record of the performance, this "group performance" still permits individualized feedback both for the pupil and the teacher.

In this program, the pupils are given a task, to trace or copy materials printed on paper, or to write material dictated orally. They do this as a group, but because of the nature of the task, each pupil performs it individually. As they perform the task, the teacher circulates among them and praises or comments on the performance of each pupil individually. The pupil also receives individual feedback concerning the acceptability of his work since he can compare what he has written with the model printed on his work paper or provided on the blackboard by the teacher.

The Program

Step 1. Task Presentation

The teacher presents the task, e.g., by saying: TRACE THE LETTERS (WORDS) ON YOUR PAPER: COPY THE LETTERS (WORDS) AT THE TOP OF YOUR PAPER: COPY EACH LINE THREE TIMES: I AM GOING TO READ SOME LETTERS (WORDS, SENTENCES) TO YOU, ONE AT A TIME. WRITE EACH ONE AS I READ IT TO YOU. (Read slowly and clearly.)

Step 2. Feedback.

After giving the instructions or dictating what the pupils are to write, the teacher should circulate among the pupils, look at the work of the pupils one at a time, with comments.

a. If all of the work is good, he should praise it.

b. If part of the work is good, he should praise that part (or parts, by saying, for example, THAT LETTER F IS PERFECT VERY GOOD, etc.)

c. If part of the work is poor, he should criticize it constructively and gently, for example, YOUR LETTER I COULD BE IMPROVED. MAKE THE LINE STRAIGHTER.

NOTE: This program can be used to make homework assignments. Use Step 1 to make the assignment, and Step 2 to provide feedback (correct the work) when the pupil returns it the next day.

THE LESSON PROGRAMS

The lesson programs specify how the items should be presented and when to stop the lesson.

1. The Rounds Programs. This is a lesson program for teaching. This program specifies the procedure to be used in teaching a group of pupils when using one of the item programs such as the SIPG, RIPG, WSPG, etc. It specifies when to call on each pupil in the group to recite on an item, when he should be called on again, and when to end the lesson (the Stop Criterion). The items of the lesson are presented one after another in "rounds". In a round each pupil in the group is called on to recite until he gives a correct response to an item. Once he does so he is not called on again until a new round begins. A round ends and a new one begins when every pupil in the group has recited correctly one time. The lesson ends after a "Perfect round". A perfect round is one in which every pupil in the group responds correctly the first time he is called on to recite in that round (the Stop Criterion.)

   a. Preparation:

      Before beginning a lesson, the teacher should first determine which group of pupils he is to teach, the subject, and the number of the lesson he is to teach them. He then looks in the module to find the instructions for that lesson, which

will tell him the type of program, and:

1. The Item Program to be used.
2. The Lesson Program to be used.
3. The Content - what words, sentences, problems, etc. will be presented.
4. The preparation - includes the teaching materials he should make ready before he begins to teach.
5. The Task - usually the question he is to ask or the instructions he is to give in Step 1 of the Item Program being used for the lesson.
6. Notes on any special procedures to be used in teaching the lesson.
7. The feedback or answers to the questions asked.

The teacher should be sure that he is familiar with the Item Program and Lesson Program before he begins to teach - if necessary, study these programs and have the Teacher's Guide open so that he can refer to them as he teaches.

Next, he should make sure that the required teaching materials are available, For example, that the blackboard and flashcards are ready or each pupil has a copy of the textbook.

Next, he should be sure that he knows the task-questions or instructions, and finally, he should make sure that each pupil is

showing his name card, that he is holding it so that the teacher can see the name.

b. Procedure for Teaching the First Round.

In the first round the items in the lesson are usually presented in the order in which they appear in the text or on the board. The teacher begins by presenting the task questions or instruction and the first item, and then calls on any pupil. (The name cards for all pupils are showing.)

NOTE: The teacher must call on the pupil after he presents the item task, not before.

If the pupil answers correctly on Step 1, he tells the pupil to put his name card down (to indicate that he has responded). When the item program for that item is finished, the teacher presents the task for the next item and calls on any other pupil whose name card is showing. When that item is finished, he presents the next item and calls on another child whose name card is showing. He should call on every pupil whose card is still showing before calling on any child a second time. When every pupil's card is down (every pupil has answered one item correctly) the round is ended.

NOTE: A round also ends if the last pupil in the group to turn down his name card fails on 3 successive items.

If every pupil answered correctly the first time he was called on, this was a perfect round and the lesson is also finished.

c. Procedure for the second and later rounds. Check the Preparation and Notes sections for the lessons in the Syllabus Program and make any changes in the teaching materials that they specify. Tell the pupils to hold up their name cards again for the new round. Then present the first item, call on a pupil to respond, and continue as in the first round. Repeat this procedure for later rounds until a perfect round occurs and the lesson is ended.

d. Stop Criterion.

The Stop Criterion is the occurrence of a perfect round, one in which every pupil in the group responds correctly on the first item presented to him - a round in which every pupil responds and makes no mistakes.

Special Stop Criterion. If a perfect round does not occur in 10 rounds of the lesson, the teacher should report to the Instructional Supervisor, who may tell him to stop the lesson and what to do next.

e. Recording.

Record the number of rounds for the lesson. Record that each pupil has completed the lesson. Rank the pupils on their performance on the lesson, 1 for best, for second best, etc.

2. The Review Game Program (RGP)

This program is used to review, and give further practice on material that has been taught previously with other programs. It is ordinarily not used with an item program, although the procedure of the RGP is very similar to that of the 'Simple Item Program. In the Review Game, two teams (or sometimes three) each try to gain the highest score by performing a lesson-task (answering a question or following an instruction) with items that are the same or similar to items that have previously been taught.

To play the game, each team stands in a line facing the teacher and the blackboard. On the board may be pictures, words, problems, etc., used in the game. The teams are given "turns" in which the members of the team perform a lesson task for which they may score 2, 1 or 0 points for their team. The score is recorded on the blackboard. Below this the teacher may print the items or arrange the item flash cards in the lots. While the teacher does this, the team should be lining up ready to play the game.

Rules for the Review Game:

a. Each team is called by turn. The pupil at head of the line is given an item-task and his performance is scored as follows:

   1. If he performs correctly without help from any member of his own team. (If he receives help from members of another team, there is no penalty - he still scores 2 for a correct performance.)

   2. If he is not able to perform correctly he may receive help from other members of his own team. Then, if he performs correctly, he scores 1 for his team.

   3. If he still cannot perform correctly, he scores 0. At the end of the turn, the pupil who was called on goes to the end of the line.

b. If the task was performed correctly during the turn (the score was 1 or 2) theother team is given a turn with a new item.

c. If the task was not performed correctly (the score was 0) the other team is given a turn with the same task and item.

d. If both teams (or all teams in the game, if there are more than two) fail to perform an item correctly, the teacher demonstrates the correct performance then gives a new item to the team whose turn is next.

e. The game ends when the total score for one of the teams equals 30. The team which reaches the score of 30 first is the winner.

f. If the game is interrupted (e.g., if the teaching period ends) before the score of 30 is reached, the team with the highest score wins, but only if the score is 20 or more. If it is 19 or less when the game is interrupted, there is no winner. The game begins again after the interruption.

Suggestions:

a. Let each team choose the name for the team, for example, an animal, bird or color.

b. Whenever a team wins, give a small prize to each member of the winning team. Prizes may be a sheet of colored paper, a cut-out paper badge, a flower to be worn, etc.

c. Use the scoring procedure to teach reading of the team names, and practice counting. Print the names of the teams on the blackboard and also the score required to win. Mark the scores with 1's or vertical strokes. Count them frequently and allow the children to count with the teacher or by themselves.

STEPS IN WRITING PROGRAMMED TEACHING MODULES

1. Write the criterion post-test(s) for a series of lessons as indicated on the syllabus program.

2. Write each lesson as specified on the syllabus program, using the following format:

   Lesson Number:

   Lesson Title:

   Lesson Program:

   Item Program:

   Content:

   Preparation:

   Task: (Special teaching steps are to be specified only if very necessary)

   Items: 1. _____

   2. _____

   etc.

   Feedback: 1. _____

   2. _____

   etc.

3. As soon as all the lessons for that particular module have been written, review and check against the post-test and vice versa. Make necessary changes/additions.

4. Submit the module and post-test(s) for quality control (technical and language edit.)
5. Revise/Refine the draft to implement suggestions, if any.
6. Prepare the radio lessons and readers (Student's booklet) as needed.

Observe the following format for the radio lesson and corresponding script:

a. Intro music
b. Lesson identification
c. Review (two lessons immediately preceding the present lesson)
   1) Voice model says/models each item <u>once</u> and pauses. (Review items are to be read in random order to minimize pure memorization or parroting and encourage <u>reading</u>.)
   2) Pupils read from the reader/booklet during each puase. (They are to close their readers before starting the new lesson.)
d. New Lesson
   1) Voice model explains the background situation very briefly in the native language; pupils merely listen.
   2) Model says each structure once, immediately giving the corresponding translation into the native language; children merely listen.
   3) Pupils are asked to open their readers.

4) Model reads each item twice, pausing after each reading to give the pupils enough time to read from the readers.

5) Pupils read the items during the pauses.

e. Extro Music

f. Voice model directs the pupils to prepare for the programmed lesson with their Programmed Teacher (PT) after the radio lesson.

7. Try out the programmed lessons among a representative sample of the target population for validity testing.

8. Revise/Refine on the basis of tryout results and feedback from the pupils and the programmed teachers.

CHAPTER 7

DESIGNING PEER GROUP LEARNING MATERIALS

PEER GROUP LEARNING

For Levels IV-VI, the usual mode of learning is through peer groups. Membership in a group is more or less permanent for the school year. Each group is responsible for the progress of each member. A group, usually made of six children heterogeneously composed, goes through a module together for three hours everyday. Each member is given a chance to lead through oral reading at specific points of a module.

Programmed learning modules are used for peer learning or for self-instruction. Modules in the basic path of the learning continuum are designed mainly for peer learning with accompanying Leader's Books to guide group discussion. Those in the Advanced path are self-instructional. Students engaged in transition learning (using programmed learning modules) are assisted by an elder pupil.

Although peer learning modules are designed for small groups, they may be used for self-instruction by a student who may not be able to report to the learning center to study with his group. Similarly, the buddy system may be used by students who are progressing through the advanced modules at a similar rate and who wish to reinforce each other's learning instead of engaging in self-instruction.

Nothwithstanding peer-group learning, each child must demonstrate his matery individually. To provide for both the slow and fast learners, IMPACT provides one hour of the day for individualized study. The

slower learners utilize the additional hour to complete their activities on the core module, while the fast learners spend this hour on the advanced modules.

Peer group learning modules are made up of several lessons, an average of four to five lessons per module. Each lesson would contain evaluation questions which are answered orally as part of the peer learning situation.

A more formal test of achievement is a module post test which is administered individually as each member of the group considers himself ready to take the test. These post tests are printed separately.

The transition modules utilized for the second semester of Level III are basically peer-group modules in style.

INSTRUCTIONAL STRATEGIES FOR PROGRAMMED LEARNING.

The modules for peer learning and self-instructional are essentially linear programs which are mostly adaptations of the model introduced by Michael Nathenson.* Other strategies were evolved for learning

*Michael B. Nathenson serves as IMPACT Research Advisor for six months in 1974.

structures which did not lend very well to the use of Nathenson's model.

The instructional strategies to be employed when writing a program will depend upon the learning structures or the forms of behaviors - viz, discrimination, generalization, concept, chain, or a combination of two or more structures - which the individual is expected to learn. The basic formats used in IMPACT programmed learning modules are described below.

A. DISCRIMINATION

In the presence of an appropriate stimulus, a learner makes an appropriate response, a response he does not make to other stimuli. In other words, he can tell two or more stimuli apart.

Example: When he sees the letters P-I-N, the reader says "pin", not "pan" or "pet" or "din". And he doesn't say "pin" when he sees P-E-N or B-I-N.

Example: When a triangle with equal sides is presented a geometry student says "equilateral triangle" not "isosceles".

Example: On a road, a sign saying "move left" leads to appropriate behavior from drivers in the right-hand lane.

<u>Strategy</u>: Skills in discrimination are effectively taught using strategies similar to those used for programmed teaching.

Higher forms of discrimination are also effectively taught using Nathenson's model applied to the teaching of generalizations and concepts as shown in the discussion that follows.

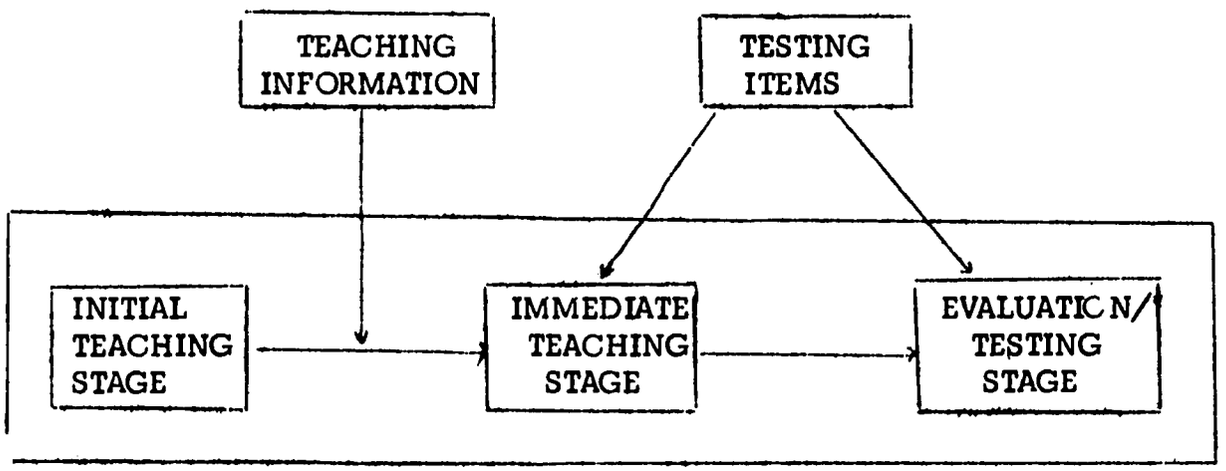
B. GENERALIZATION

In a situation which differs in some way from ones the learner may have met before, the learner gives a response learned for earlier similar situations.

Example: Having learned to use the past tense sound, -ed, with "wanted" and "mended", a child says, for the first time and with no coaching, that his toy is "busted".

Strategy: Nathenson's linear model

The diagram below shows the structure of a learning sequence in Nathenson's model:

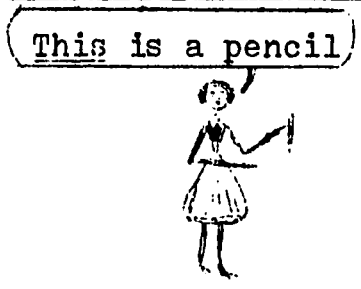


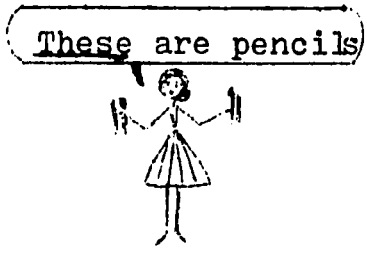
(1) The Initial Learning Stage. That part of Learning Sequence in which teaching information is combined with test items. As a result of initial teaching, the learner should be able to respond correctly to the test items upon first seeing them.

(2) The Intermediate Teaching Stage. That part of the Learning Sequence in which some modified form of the initial teaching information is combined with test items similar, but not identical to the test items generated in the Initial Learning Stage. The purpose of the Intermediate Teaching Stage is to help the learner respond correctly to the test items without reliance upon the initial teaching. This is accomplished by progressively reducing or lessening the original teaching information. The learner is given parts of the original teaching or simplified, more concise forms of the original teaching.

(3) Evaluation/Testing Stage. That part of the Learning Sequence in which only test items appear. The test items should be similar, but not identical to the test items generated in the Initial and Intermediate Stages. No teaching information is provided. The purpose of this stage is to evaluate the learning that has resulted from two preceding stages.

Sample Lessons



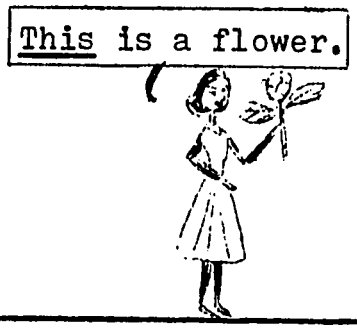


The girl is talking about only one pencil she is holding.

She says, "This is a pencil."

The girl is talking about four pencils she is holding.

Four is more than one. She says, "These are pencils."



The girl is talking about only one flower near her.

She says, "This is a flower."

The girl is talking about many flowers near her.

Many is more than one. She says, "These are flowers."

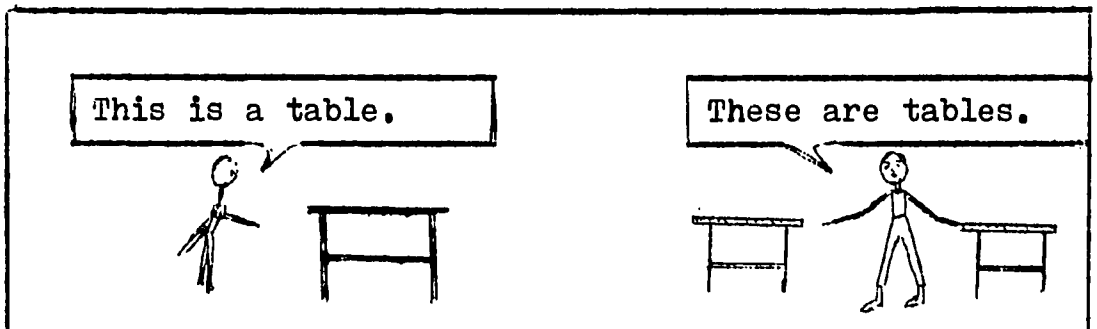
REMEMBER THESE RULES:

THIS	Use this when talking about ONE thing near you.
THESE	Use these when talking about MORE THAN ONE thing near you.

LOOK AT THESE PICTURES. FINISH WHAT THE BOX IS SAYING.

USE THE ANSWER SHEET.

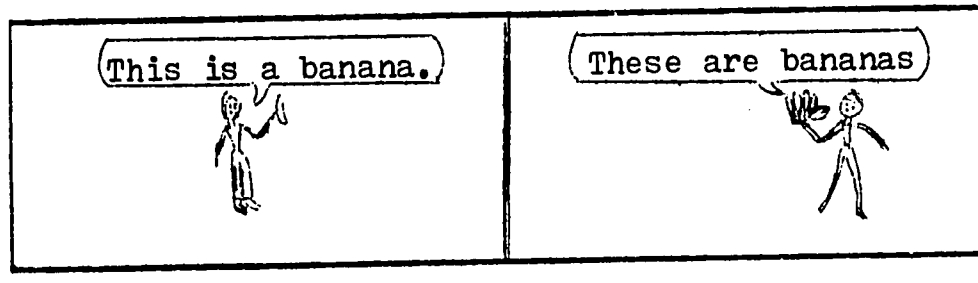
EXAMPLES:



START HERE:

1. The boy is talking about only one table near him.
2. He says, "This is a table."

A. 1. The boy is talking about _____ tables near him.
2. Two is _____ than one.
3. He says, "___ are tables."



B. 1. The boy is talking about ___ banana near him.

2. He says, "____ is a banana."

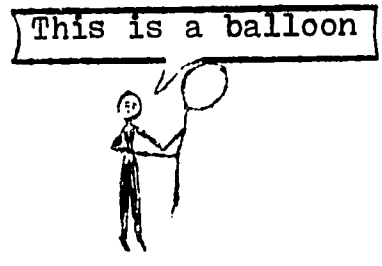
C. 1. The boy is talking about ___ bananas he is holding.

2. Five is ____ than one.

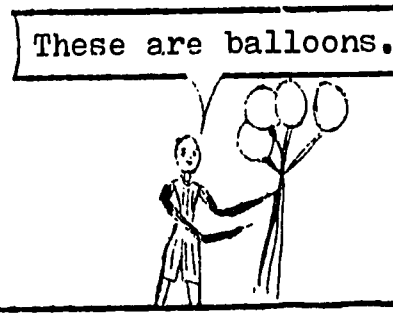
3. He says, "____ are bananas."

AS SOON AS YOU ARE READY, RAISE YOUR HAND SO THAT THE LEADER CAN START THE GROUP DISCUSSION.

READ WHAT THE BOY IS SAYING IN EACH PICTURE AND READ THE SENTENCE BESIDE IT.



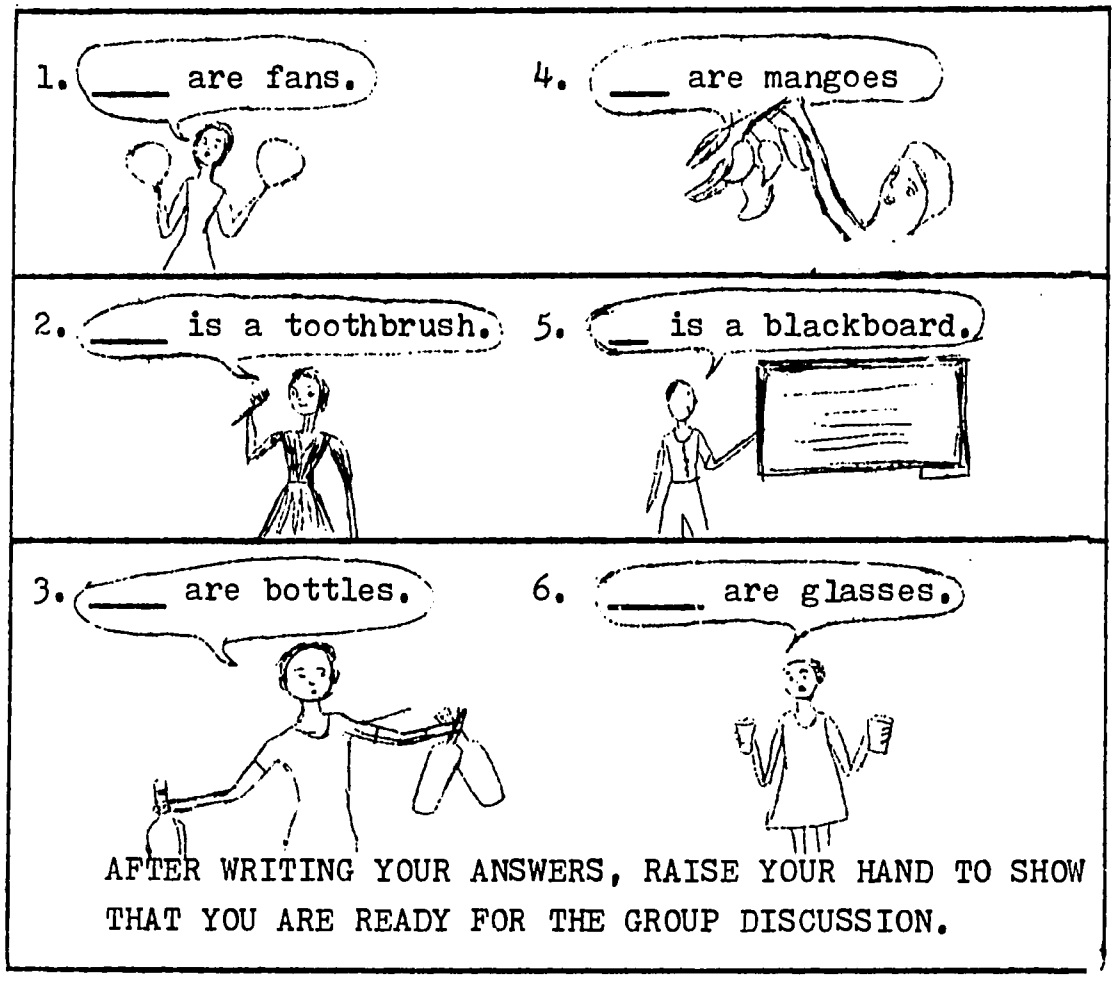
The boy is talking about only one balloon.



The boy is talking about four balloons.

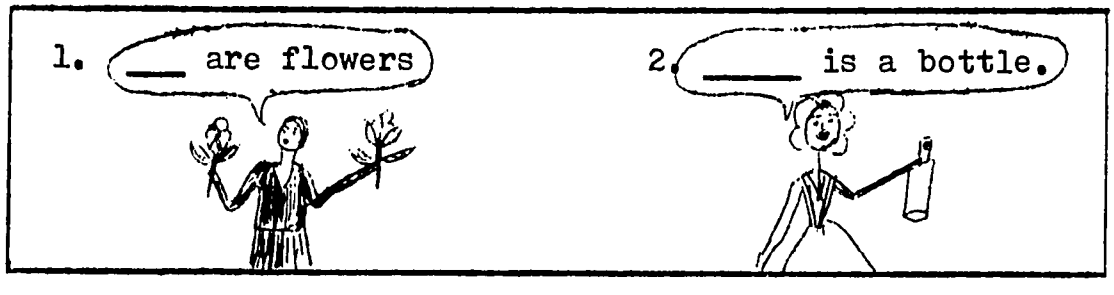
Four is more than one.

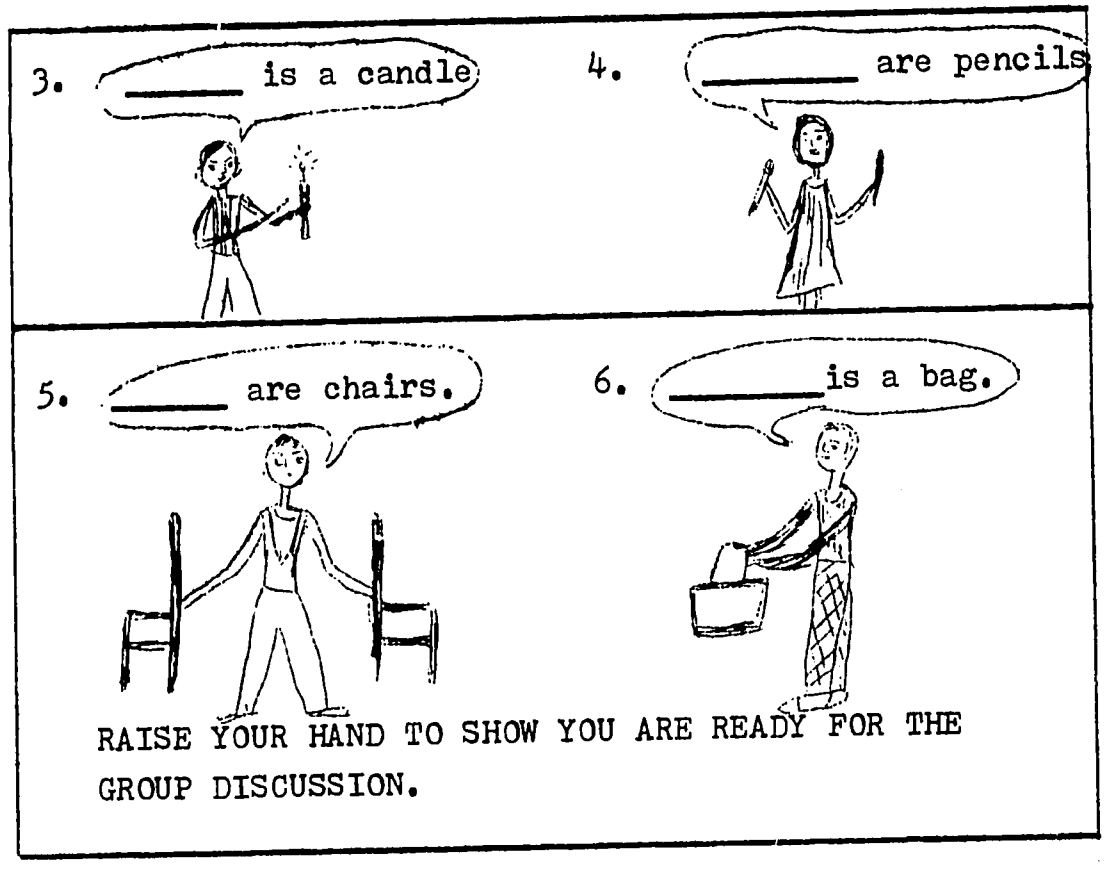
WRITE: This OR These TO MAKE THE SENTENCES CORRECT.
USE THE ANSWER SHEET.



RULE: Use this when talking about only one thing near you.
Use these when talking about two or more thing near you.

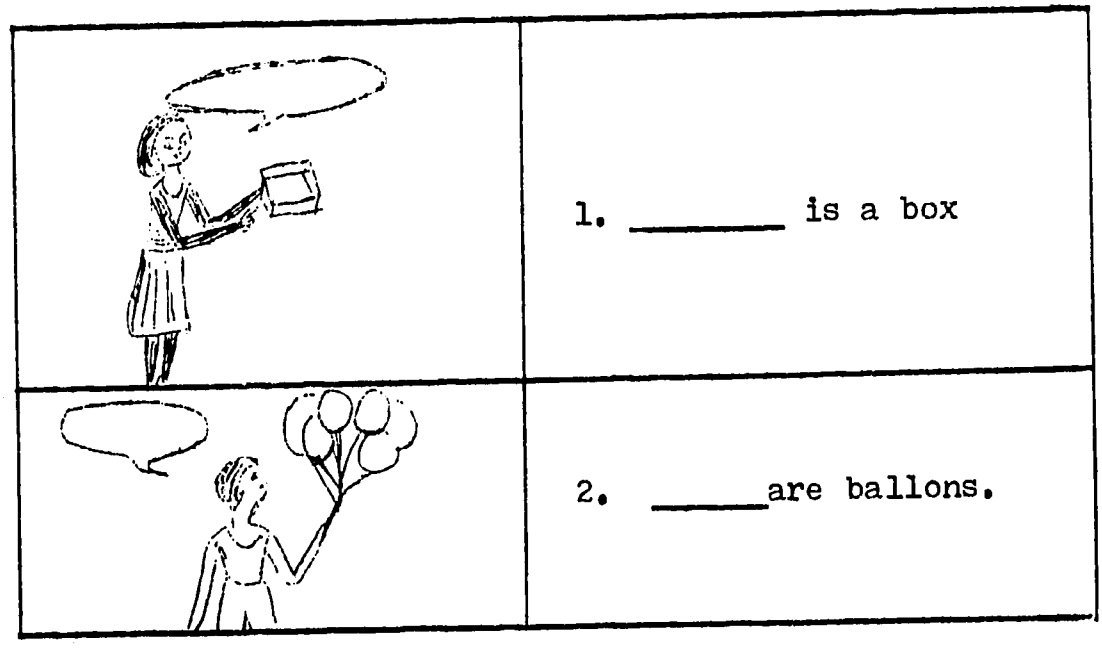
FINISH WHAT THE CHILD IS SAYING IN THE PICTURE BY WRITING This OR These. USE THE ANSWER SHEET.

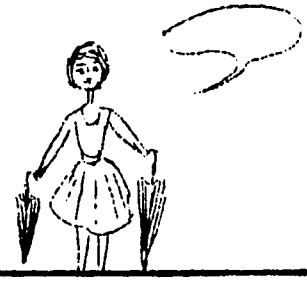




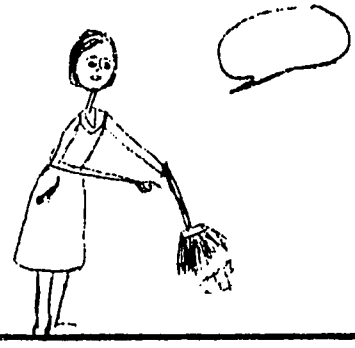
RAISE YOUR HAND TO SHOW YOU ARE READY FOR THE GROUP DISCUSSION.

FINISH WHAT THE CHILD IS SAYING BY WRITING <u>This</u> OR <u>These</u>. USE THE ANSWER SHEET.



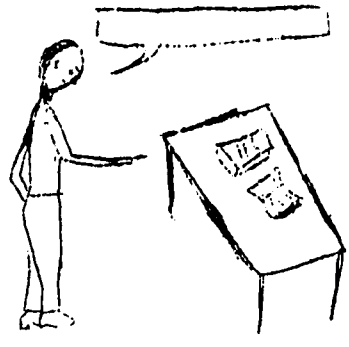


3. ____ are umbrellas.



4. ____ is a broom.

5. ___ is a doll



6. ___ are books.

RAISE YOUR HAND TO SHOW THAT YOU 'RE READY FOR THE GROUP DISCUSSION.

C. CONCEPT

A concept is a class or set containing members varying in many ways but sharing certaing properties which make them members of the set. A student "has" a concept when he can correctly identify a new example and correctly exclude a new non-example. Conceptual learning includes both generalization within the class and discrimation outside the class. The term is useful because most concepts are far more complex than typical discrimination problems. We may speak of discrimination between "p", "d", "b", and "g"; however, it is more useful to think of larger sets like "dog" as a CONCEPT, since there is such a wide variation among members such as German Sepherd and Native dogs.

Strategies: (1) Similar to that used for generalization; or

(2) The strategy described below.

a. Activity, where possible, for data-gathering (Initial Teaching Stage).

b. Reporting/Sharing/Discussion of data gathered (Initial Testing/ Reinforcement/Feedback).

c. Conceptualization/Generalization (Intermediate Teaching Stage).

d. Evaluation (Intermediate Testing Stage).

- open-ended; (controlled) completion; multiple choice; etc.
- situational items preferred.

In cases where it is not possible to have data-gathering activities such as the interview, field trips, observation, dialogs, role-playing, etc., a simulated activity might be presented in the form of an initial text or resource material to be read by the group and teaching strategy may proceed as follows:

a. Present stories/situations/selections to illustrate or exemplify the concept and to be treated as reading material to develop or apply reading skills (Initial Teaching Stage).

b. Ask comprehension questions on the selection read. (Initial Testing).

c. Conceptualization/Generalization (Intermediate Teaching Stage).

d. Evaluation, preferably using situational items (Intermediate Testing).

General Considerations

a. Post-test should test skills/concepts using similar but not identical situations to minimize memorization and rote learning. Avoid exact repetitions within the module or in the Post-test.

b. Include, where possible, affective testing (situational items preferred), and questions that develop skills in the higher cognitive levels (comparison, making conclusions, analysis, synthesis, etc.). Tests will be followed by group discussion on the corresponding feedback.

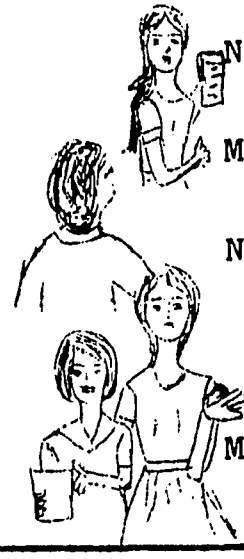
c. Use smaller steps in transition modules; focus should be more on the concepts rather than on mere facts to be remembered.

d. Observe the guidelines on how to construct test items.

e. Make maximum use of visuals and other instructional materials and devices to minimize dependence on the printed pages.

SAMPLE LESSON 1:

READ THIS CONVERSATION ALOUD WITH YOUR TUTOR. THE TUTOR WILL READ MOTHER'S PART WHILE YOU READ NENA'S PART.



Getting Ready for the Party

Nena : Is that a shopping list Mother?

Mother : Yes, for your birthday on Saturday.

Nena : May I see it? Five loaves of bread, a pound of butter, a can of cheese, two gallons of ice cream and three dozens of oranges.

Mother : A big cake, too and some balloons.

THESE NOUN PHRASES ARE FOUND IN THE CONVERSATION YOU HAVE JUST READ. LOOK AT THE UNDERLINED NOUNS.

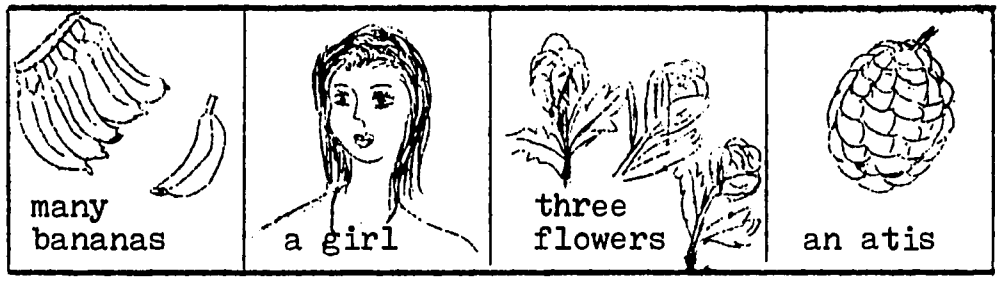
a shopping list
five loaves of breads
a pound of butter
a can of cheese
two gallons of ice cream
three dozens of oranges
a big cake
some balloons

These nouns can be counted. They are called count nouns and they have plural forms.	These nouns cannot be counted. They are called mass nouns. They have no plural forms.
Singular = Plural	
list = lists	
loaf = loaves	bread
pound = pounds	butter
can = cans	cheese
gallon = gallons	ice cream
orange = oranges	
cake = cakes	
balloon = balloons	

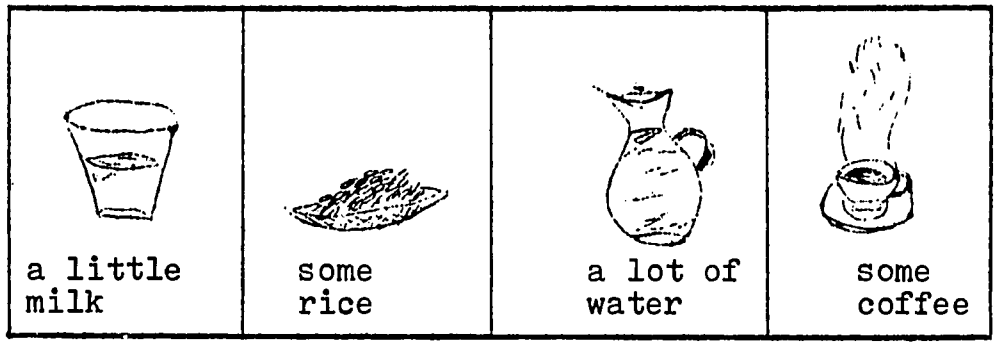
Can these nouns be counted?
Write Yes if the noun can be sounded.
Write No if it cannot be counted.

1. Can
2. Orange
3. bread
4. list
5. butter
6. leaf
7. gallon
8. cake
9. cheese
10. ice cream
11. santol
12. ballon

We usually count these nouns. They are count nouns.
We say:

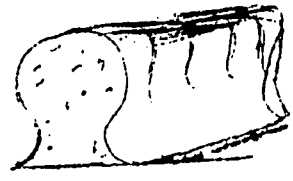
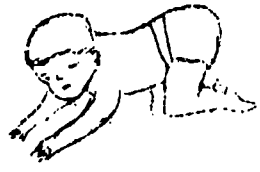
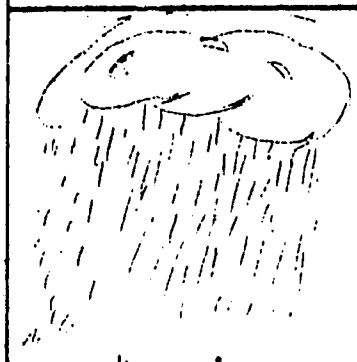
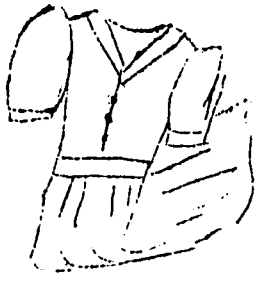


We don't usually count these nouns. They are mass nouns. We say:



LOOK AT THE PICTURES BELOW. IF THE NOUN IN THE PICTURE IS A COUNT NOUN, WRITE <u>COUNT NOUN</u> ON THE ANSWER SHEET. IF IT IS A MASS NOUN, WRITE <u>MASS NOUN</u>.

START HERE:

 1. bread	2. mangoes	 3. baby
 4. rain	 5. dress	6. leaf
7. books	8. vinegar	

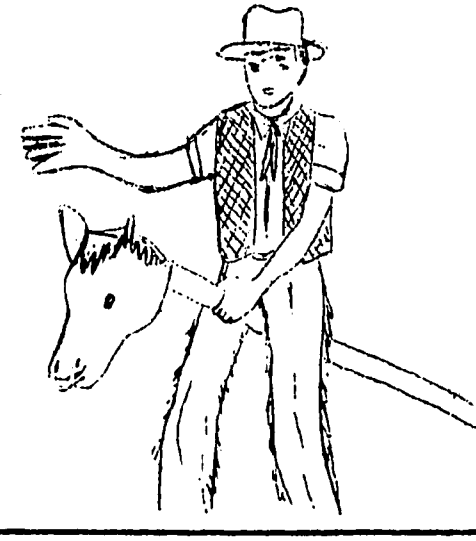
THESE ARE COUNT NOUNS.
THEY HAVE PLURAL FORMS.

Singular	Plural
a teacher	= several teachers
one desk	= five desks
a house	= many houses
an egg	= one dozen eggs
a box	= some boxes
one leaf	= six leaves

etc.

THESE ARE MASS NOUNS
THEY HAVE NO PLURAL FORM

some sugar
some juice
some milk
some bread
some water
some soup
some soap
some rice
etc.

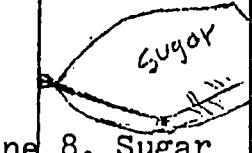
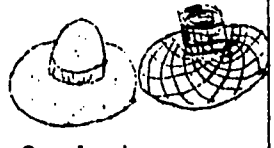


READ EACH SENTENCE BELOW. IF THE UNDERLINED NOUN IS A COUNT NOUN, WRITE COUNT NOUN ON THE ANSWER SHEET. IF IT IS A MASS NOUN, WRITE MASS NOUN.

1. There are five desks in each row.
2. Put your things in a box.
3. Please give me some water to drink.
4. Only one leaf was left on the branch.
5. Mother cooked some rice for lunch today.
6. I need some sugar for my milk.
7. Elisa bought one dozen eggs.
8. Miss Cruz is a teacher.
9. The children had cakes and some juice during the party.
10. Perla drinks some milk before she goes to sleep.

TEST

LOOK AT THE PICTURES BELOW. IF THE NOUN IN THE PICTURE IS A COUNT NOUN, WRITE COUNT NOUN ON THE ANSWER SHEET. IF IT IS A MASS NOUN, WRITE MASS NOUN.

1. book	2. milk	3. bread	4. guavas
5. frog	6. rain	7. margarine	 8. Sugar
 9. hats	10. rice		

TEST II. LOOK AT THE UNDERLINED NOUN IN EACH SENTENCE BELOW. IF IT IS A COUNT NOUN, WRITE COUNT NOUN ON THE ANSWER SHEET. IF IT IS A MASS NOUN, WRITE MASS NOUN.

1. I picked some roses from the garden.
2. How many girls are in the room?
3. There's plenty of soup in the pot.
4. He put a few drops of oil in the machine.
5. Baby drinks a lot of milk.
6. Please put some sugar in the jar.
7. Lina bought two red pencils.
8. I need a bottle of vinegar.
9. A dictionary is a very useful book.
10. They're drinking some chocolate.
11. There are many interesting stories in that book.
12. They planted some vegetables in the garden.
13. Dan sells newspapers every Saturday.
14. There's some coffee left in the cup.
15. Nena didn't bring her bag.

SAMPLE LESSONS: MAKING AND KEEPING FRIENDS

Do you have many friends? Do you know how you can have many friends and keep them? Let's read this story.

Nita, Tony, and Lito went to the drinking fountain for a drink.

"Go ahead, Nita," Tony said. "Lito and I will wait for our turn."

"Thank you, you are very kind," said Nita as she was about to drink.

Just then Julio came running.

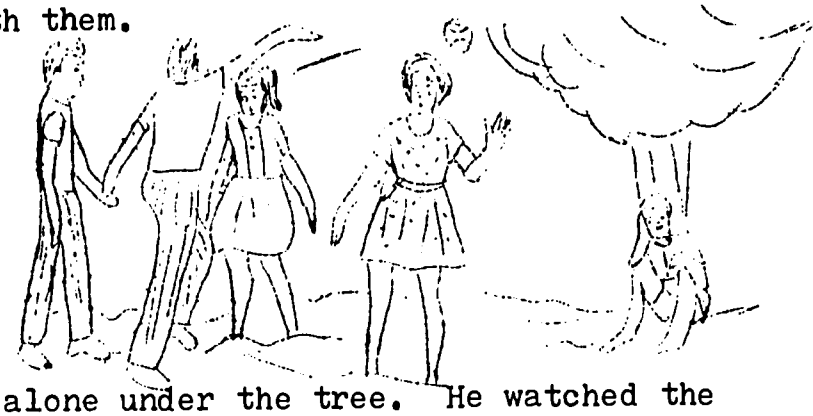
"Move!" Julio said. "I am very thirsty (giuhaw). I want to drink." Then he pushed (gitukmod) the boys.

"Wait for your turn," Lito said. "Don't push us."

"No, I don't want to wait," Julio said. "I want to drink right now."

"Let's go! Let him drink as much as he wants," said Nita. Then Nita, Tony, and Lito went away.

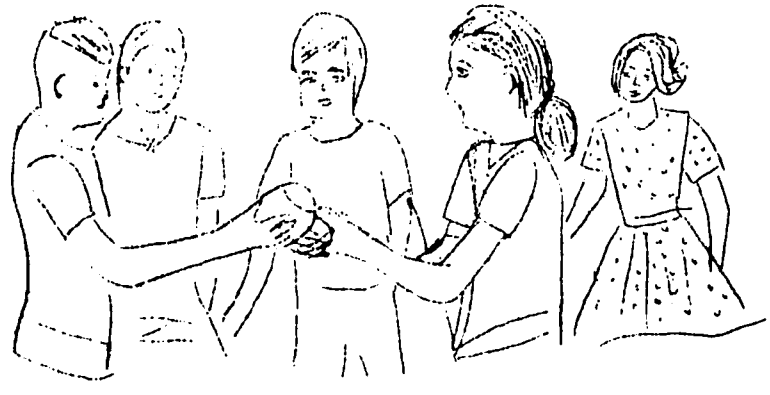
After school, Nita and her friends played ball. They played at the school yard. They did not let Julio play with them.



Julio sat alone under the tree. He watched the children play. He saw how happy the children were.

"I want to play with them but they will not play with me," Julio said. "why don't they like to play with me?"

Nita threw the ball. The ball rolled (naligid) and rolled. Julio ran after the ball. He stumbled (nahidugmo). Then he got up and gave the ball to Nita.



The children thanked (nagpasalamat) Julio. Then they asked Julio to play with them.

Julio was very happy. He played with the children. This time he did not push the other children. He played very well. He waited for his turn in throwing and cathing the ball. The children learned to like him.

TUBAGON NATON KINI:

1. Who went to the drinking fountain first?
2. Why did they go to the fountain?
3. Why do you think the boys let Nena drink first?
4. Do you like Tony and Lito? Why or why not?
5. Do you like Julio at the beginning of the story? Why or why not?
6. Do you think Julio was happy watching the other children play? Why or why not?
7. What happened to Julio when he ran after the ball?
8. What did the children do when Julio returned the ball?
9. Do you like Julio at the end of the story?

INIGHUMAN NIMO PAGSULAT SA IMONG TUBAG, SULTIHI ANG LIDER NGA ANDAM KA NA ALANG SA INYONG "GROUP DISCUSSION."

D. CHAINS

Starting at the beginning of a lengthy procedure, the learner can follow a relatively fixed sequence of steps in which completion of one step serves as the stimulus for beginning the next one.

Example: Given a roll of film in a box and projector in a case, the student can follow the steps to produce a focused image on a screen and to control sound at a reasonable volume.

Example: Without consulting a cookbook, the cook can start with an unmeasured set of ingredients and arrive at a chicken curry dish.

<u>Strategies:</u>

a. Chaining for Mathematics Operations:

1) Initial teaching stage

Teach: Present all the steps in the chain with their corresponding examples.

Test: Have the child work on an exercise following the steps enumerated.

? Intermediate teaching stage(s)

a) Teach: Present the steps again, minus the example/model.

Test: Have the learner work on an exercise/exercises following the steps enumerated.

b) Teach: Present an example/model showing how the chain of steps is applied to a given exercise.

Test: Have the learner work on several exercises following the model/example shown.

A. General Considerations

1) Provide as many exercises as possible for mastery (automaticity, if desired).

2) The summary at the end of the module may include some practice exercises combining all the skills/operations taught in each lesson to further prepare the learner for the posttest.

B. Chaining for Manipulative Skills (Applied Skills, Home Economics):

1) Format of Lesson(s)

(a) Teach: Present all the steps in the chain with illustrations and/or actual demonstration.

(b) Test: Have the learner(s) perform each step enumerated.

2) Evaluation of Performance

(a) Criteria/checklist for accuracy of steps shown while at work; and/or

(b) Criteria/checklist for judging the quality of the finished product.

Composition Writing

1. Learning Stage

Lesson 1 - Text (model) compositions to be discussed for content as in conceptual learning.

Lesson 2 - Steps in writing a composition (as in chaining). Writing group compositions (as in chaining). Writing group compositions using blackboard (different pupils to write different parts/ sentences; guide to leader in form of criteria).

2. Evaluation

2.1 Post Test: Writing down compositions by individual pupils.

- Evaluation of compositions to be done by I.S. using criteria provided by writer (program designer)

Sample Lesson: See simplified lesson that follows. (Other samples may be found in modules 291, 156, and similar modules used in the IMPACT pilot sites).

SAMPLE LESSON:

Chain Division:

LESSON 3

LONG DIVISION

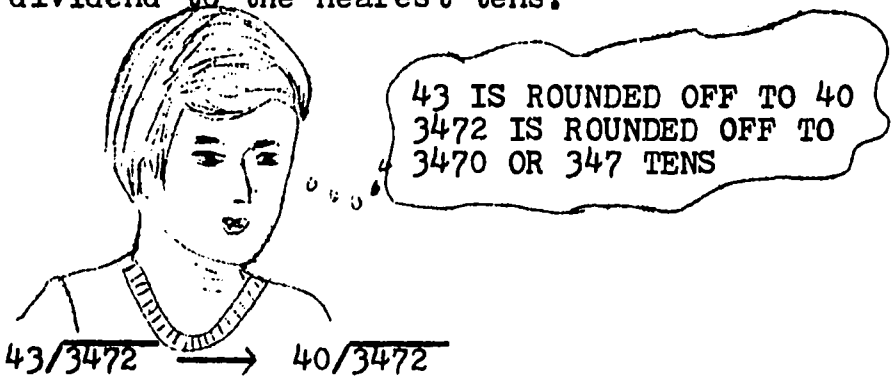
A. TWO-DIGIT DIVISORS

To divide whole numbers with two-digit divisors, we must observe the following steps.

For example if we are to divide 3472 by 43:

STEP 1: DIVIDE

a) Mentally round off the divisor and the dividend to the nearest tens.



b. Estimate the trial quotient. We have a two-digit divisor so we first divide the two digits of our dividend. We divide 34 by 40. But 34 is less than 40 ($34 < 40$). So we take the dividend. We now have 347 tens - 40. There are at least 8 forties in 347 tens. 8 x 40 347 tens. Therefore 8 is a good trial quotient. Write 8 above the tens place of the dividend

8
43/347 2

STEP 2. MULTIPLY

a) Mentally multiply 43 by 8 tens; we get 344 tens (43 x 8 = 344).

b) Compare the product 344 tens with 347 tens. 344 347.

c) Write 344 tens below 347 tens.

```
        8
43/347 2
   344
```

STEP 3. SUBTRACT

347 tens - 344 tens = 3

```
        8
43/347 2
  -344
  ----
    3
```

STEP 4. COMPARE THE REMAINDER WITH THE DIVISOR

The remainder should be less but never equal or greater than the divisor. We cannot get any 43 from 3 tens so bring down 2 and add it to 3 tens. So we have 32.

```
        8
43/347 2
   344
  ----
    3 2
```

STEP 5. DIVIDE

32 ÷ 43. 32 is less than 43.

So 32 ÷ 43 = 0

Write 0 above the ones place in the dividend.

```
      80
43/ 3472
   -344
     32
```

STEP 6. MULTIPLY

0 x 43 = 0

Write 0 in the ones place below 32

```
      80
43/ 3472
   -344
     32
      0
```

STEP 7. SUBTRACT

32 - 0 = 32

32 is the remainder

```
      80  r. 32
43/ 3472
   -344
     32
      0
     32
```

The quotient is 80 r. 32

NOW, SOLVE THIS EXERCISE SHOWING THE STEPS IN LONG DIVISION:

52/ 7694

WHEN YOU ARE READY WITH YOUR ANSWER, RAISE YOUR HAND, SO THAT THE LEADER CAN START THE GROUP DISCUSSION.

HERE'S ANOTHER EXAMPLE.

93/ 8764

STEP 1. DIVIDE

876 - 93 = 9
Write 9 above 6 in the dividend

```
   9
93/ 8764
```

STEP 2. MULTIPLY

9 x 93 = 837
Write 837 under 876

```
   9
93/ 8764
    837
```

STEP 3. SUBTRACT

876 - 837 = 39

```
   9
93/ 8764
   -837
    39
```

Write 39 under 837

STEP 4. COMPARE

Compare 39 with 93

39 < 93

```
   9
93/ 8764
    837
    394
```

Bring down 4

STEP 5. DIVIDE

394 - 93 = 4
Write 4 above the ones place of the dividend

```
   94
93/ 8764
    837
    394
```

STEP 6. MULTIPLY

4 x 93 = 372

```
   94
93/ 8764
    837
    394
    372
```

Write 372 under 394

STEP 7. SUBTRACT

394 - 372 = 22
22 93 so the
quotient is
94 r. 22

```
      94
93/ 8764
    837
     394
    -372
      22
```

SOLVE THIS EXERCISE BY LONG DIVISION

58/ 5278

AFTER WRITING YOUR SOLUTION, RAISE YOUR HAND SO THAT THE LEADER CAN START THE GROUP DISCUSSION.

HERE ARE THE STEPS TO REMEMBER IN LONG DIVISION:

1. Divide by estimating the trial quotient for the first few digits.
2. Multiply the trial quotient by the divisor.
3. Subtract the product from the dividend.
4. Compare the difference with the divisor then bring down the next digit in the dividend.
5. Divide the resulting dividend by the divisor. (Repeat from step one if there are more digits in the dividend.)

DIVIDE THIS:

$$36\overline{)4275}$$

RAISE YOUR HAND AS SOON AS YOU ARE READY FOR THE GROUP DISCUSSION.

Now, without showing all the steps one by one, let's divide the following this way:

$$\begin{array}{r} 22 \\ 37\overline{)814} \\ -74 \\ \hline 74 \\ -74 \\ \hline 0 \end{array}$$

SOLVE THESE EXERCISES. USE LONG DIVISION.

a) $42\overline{)462}$

b) $67\overline{)1206}$

c) $42\overline{)8652}$

d) $26\overline{)9894}$

e) $57\overline{)9894}$

f) $88\overline{)5285}$

g) $63\overline{)5280}$

h) $26\overline{)7956}$

i) $29\overline{)8758}$

j) $52\overline{)7694}$

REVIEW YOUR WORK.
WHEN YOU ARE READY, RAISE YOUR HAND
SO THAT THE LEADER CAN START THE GROUP DISCUSSION.

SAMPLE LESSON

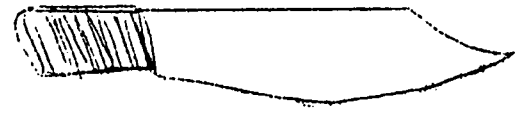
LESSON 4

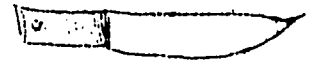
MAKING A COCONUT MIDRIB BROOM

You can make your parents happy if you help them do the house work. You can help your parents clean your house and your yard.

A coconut midrib broom is one of the things you use in cleaning. It is easy to make. Do you like to make one?

These are the things you will use:

bolo 

knife 

coconut palm

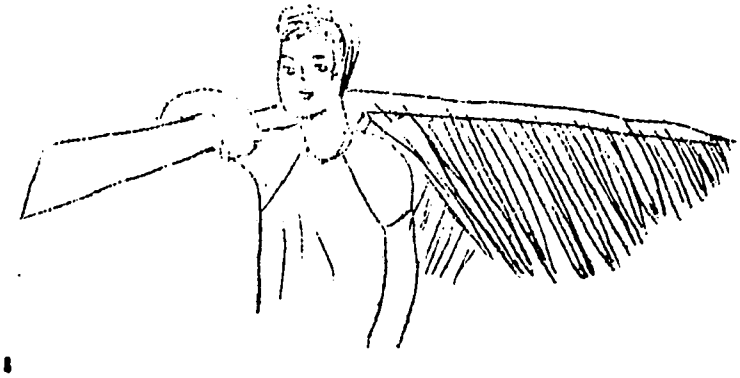
empty can

or rattan ring

MAO KINI AND MGA "STEPS" SA PAGBUHAT UG SILHIG NGA TUKOG.

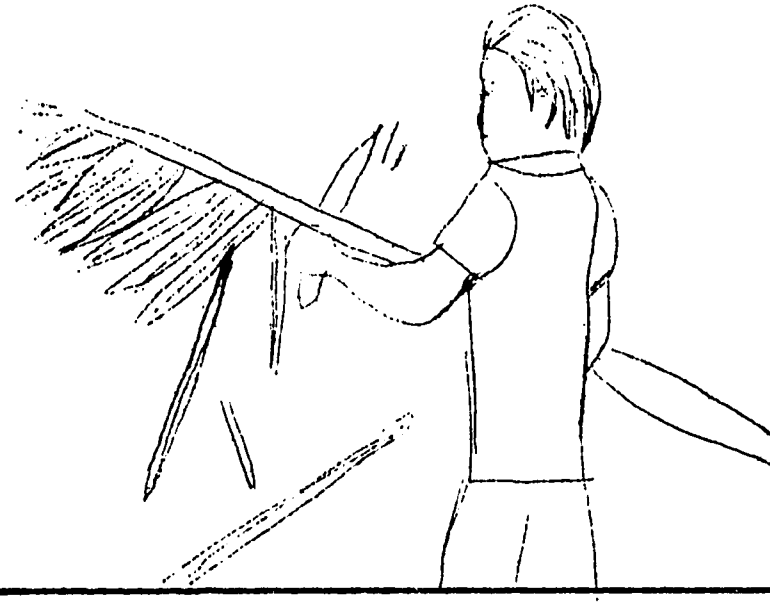
STEP ONE:

Gather some coconut palms (palwa)



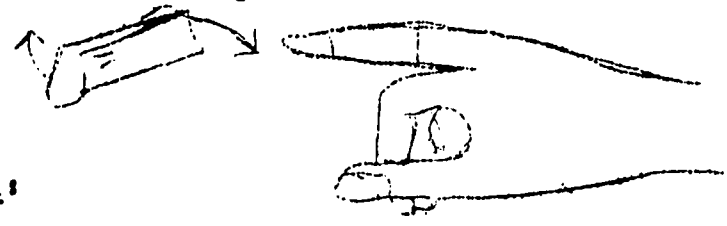
STEP TWO:

Remove or take away the leaves from the petiole (palwa) using a bolo, like this:



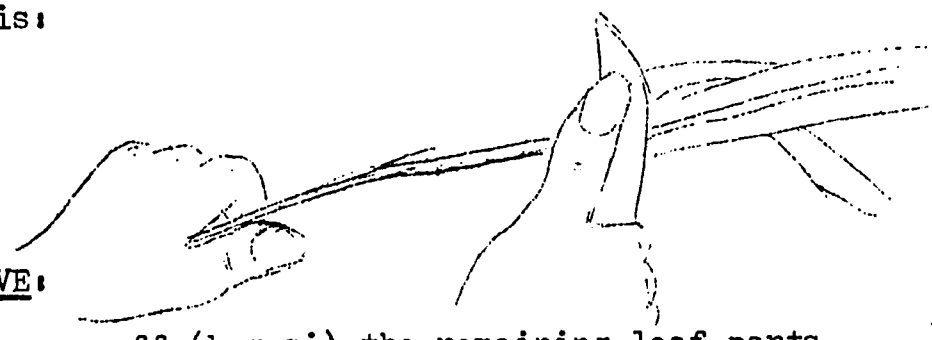
STEP THREE:

Wrap (pusta) your forefinger with a piece of cloth. (Look at the picture.)



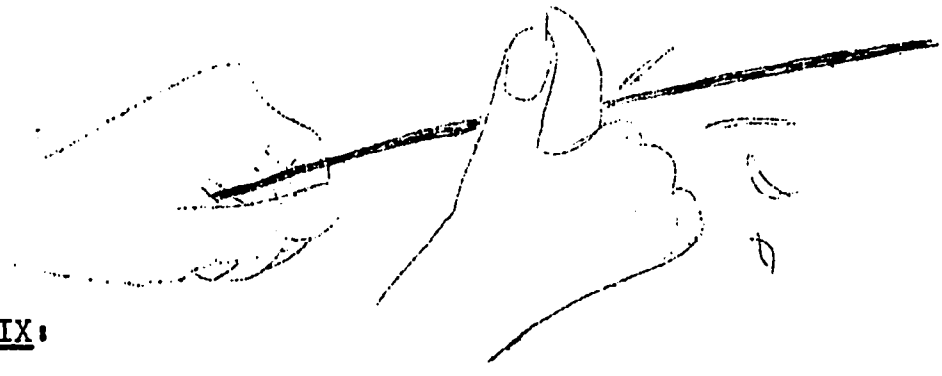
STEP FOUR:

Remove the frond from the midribs with a knife like this:



STEP FIVE:

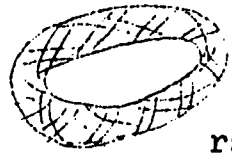
Scrape off (bagusi) the remaining leaf parts like this:



STEP SIX:

Prepare a ring or tin can (lata) to hold or bundle (bugkos) the midribs tightly.

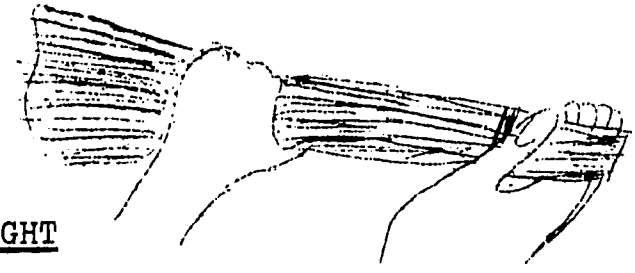
tin can



rattan ring

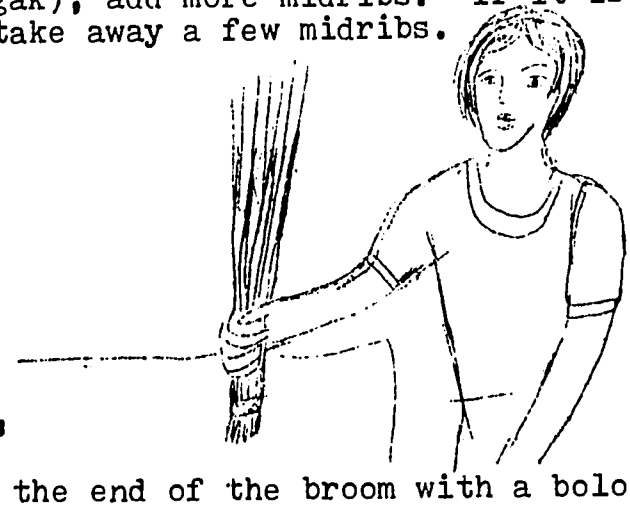
STEP SEVEN:

Group the midribs together. Insert the midribs through the can or ring like this:



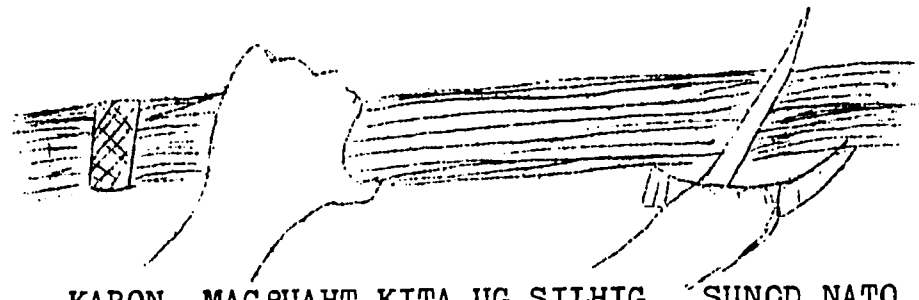
STEP EIGHT

Stamp (idakdak) the head of the broom on a hard surface. (See the picture below). This will help you tell if the broom is tight (hugot) enough. If it is loose (lugak), add more midribs. If it is too tight (hugot), take away a few midribs.



STEP NINE:

Cut the end of the broom with a bolo like this:



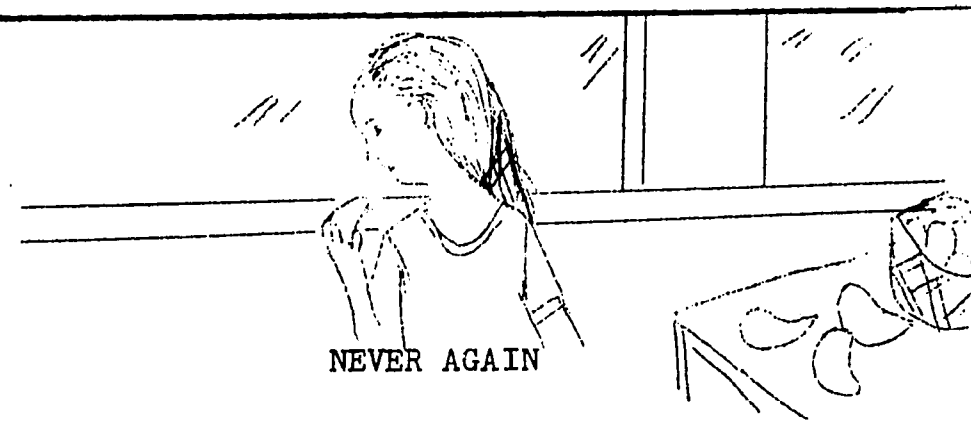
KARON, MAGBUAHT KITA UG SILHIG. SUNOD NATO ANG MGA "STEPS" NGA ISULTI SA ATONG LIDER. IPAKITA SA IMONG "TUTOR", "I.S. AIDE", O I.S. ANG IMONG BUHAT ARON MAHIBALOAN KON HUSTO BA ANG IMONG BUHAT.

SAMPLE LESSON

HOW FOOD IS DIGESTED

Do you enjoy telling friends about some of your interesting experiences?

Let's read this story about what happened to Rita one day.



I'll never eat green mangoes again. Do you want to know why?

On my way home from church yesterday, I dropped by Tia Marina's fruit store. My aunt gave me a bag full of big green mangoes to take home. My mouth watered when I saw the mangoes, so I tasted one. I liked it and I ate some more. I was so hungry that I ate three more. That night, my stomach ached so much and I cried. I thought I would die, but I couldn't tell my mother. How could I?

Adapted from Everyday English for Grade 4

Read the title and beginning sentences of Rita's story again. Do they make you want to know why Rita won't ever eat green mangoes again?

NEVER AGAIN

I'll never eat green mangoes again.
Do you want to know why?

Rita's story is good because it has an interesting title and a good beginning. It also answers the following questions.

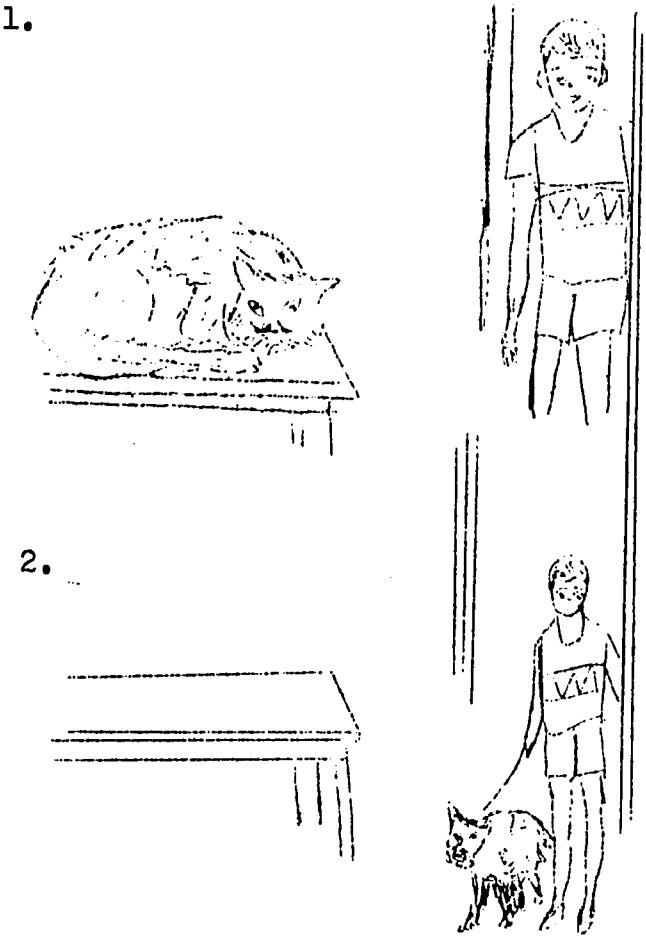
QUESTIONS	ANSWERS
1. When did the story happened	Yesterday
2. Who did it happen to?	Rita
3. Where did it happened?	in Tia Marina's fruit store
4. What interesting thing happened	her Aunt gaver her a bag full of big green mangoes.

SAMPLE LESSON

The set of pictures below tells a story.

Lets write the story about them. The Leader will ask the members of the group to take turns in giving the title, the beginning sentence, and one sentence each until the story is complete. You will first write your group story on the blackboard.

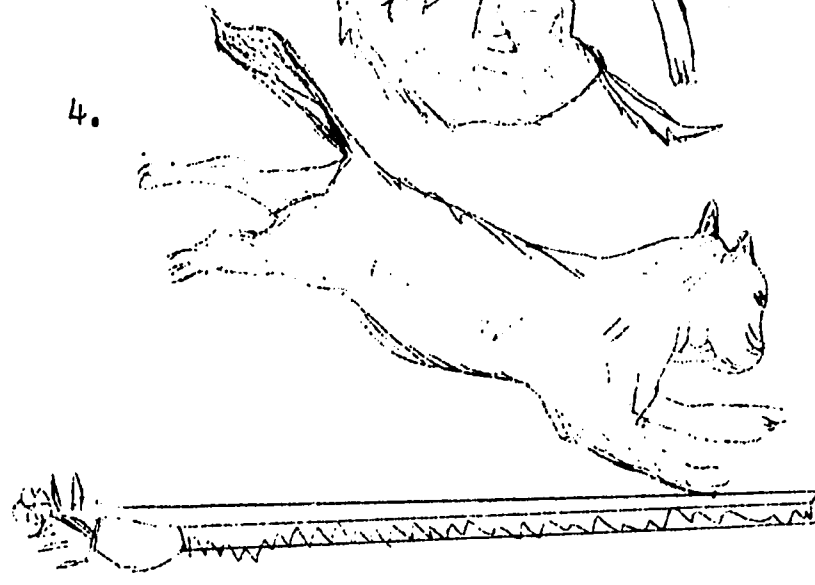
A. 1.



2.

3.

4.

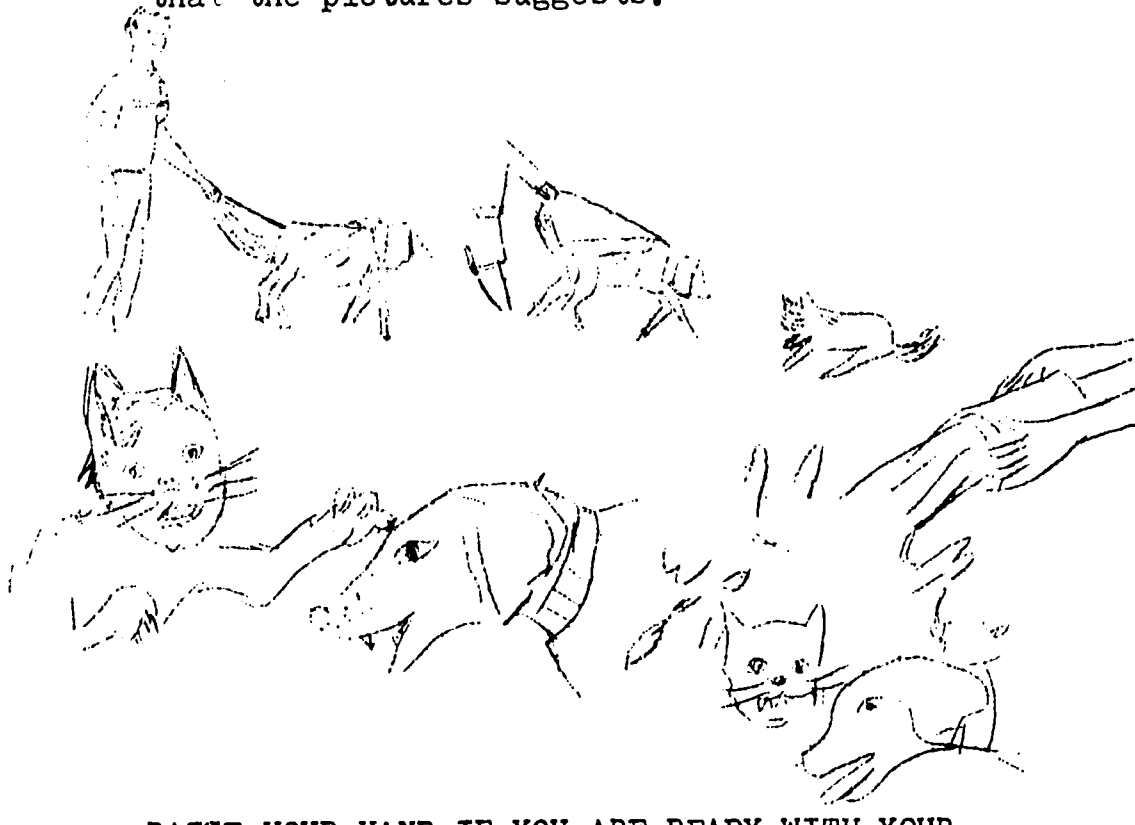


AFTER THE GROUP DISCUSSION, COPY THE STORY ON YOUR ANSWER SHEET.

Here are some things we should remember so that we can tell a good story:

1. The title should be interesting.
2. The beginning sentence of a story should be interesting. It should make the listener or reader want to know more.
3. A good story should tell the <u>who</u>, <u>whom</u>, <u>where</u>, and <u>what</u> of the story.

Below is another set of pictures. Look at each picture carefully. Then write the story that the pictures suggests.



RAISE YOUR HAND IF YOU ARE READY WITH YOUR ANSWERS, TELL THE LEADER THAT YOU ARE READY FOR THE GROUP DISCUSSION.

SAMPLE LESSON

LESSON FOR EXPERIMENTATION:

LEARNING HOW TO CONSERVE SOIL

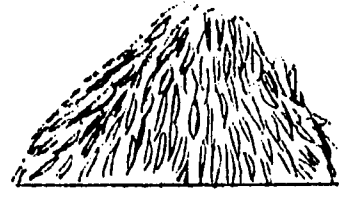
Much soil is carried by water from the high lands during heavy rains. This is known as water erosion. Because of erosion, hills and mountains lose much soil.

Much soil is carried by winds from one place to another place. This is known as wind erosion. Because of erosion much soil is lost in one place.

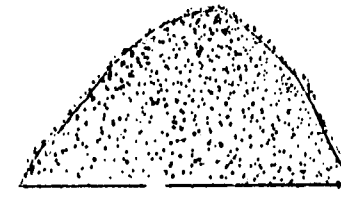
HOW CAN EROSION BE PREVENTED?

DO THIS:

1. Go to the garden.
2. Make two mounds of the same size and shape. Use stones, gravel and soil.
3. Cover one mound with grass or weeds.
4. Your mounds will look like this:



A. Mound covered with grass



B. Mound not covered with grass

Now, do these:

5. Fan the two mounds as hard as you can. Everyone in the group should do this together.
6. Observe what happens to the mounds.
7. Pour 3 small cans of water on each mound.
8. Observe what happens to the mounds.

TEST A.

COPY THE SENTENCES THAT BEST DESCRIBE YOUR OBSERVATIONS.

_____ Much soil was carried down in Mound A.

_____ Much soil was carried down in Mound B.

_____ Little soil was carried down in Mound A.

_____ Little soil was carried down in Mound B.

_____ Mound A became very low.

_____ Mound B became very low.

_____ Much change is seen in Mound A.

_____ Much change is seen in Mound B.

_____ Little change is seen in Mound A.

_____ Little change is seen in Mound B.

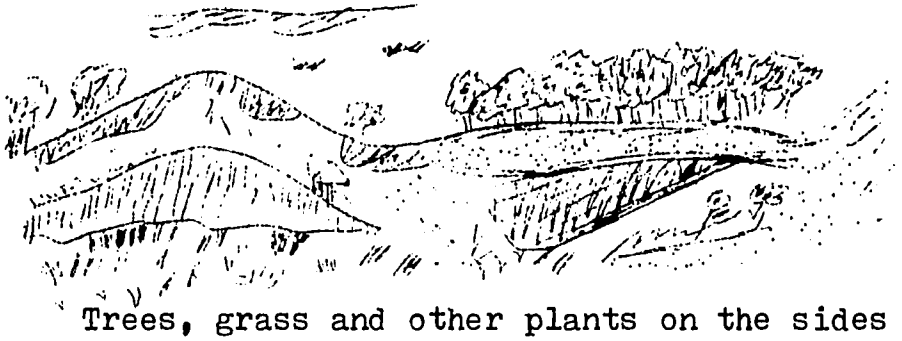
TEST B.

ANSWER THESE QUESTIONS:

1. In which mound did much soil roll down the sides?
2. Which mound showed changes on the surface?
3. What do the two experiments mean? Copy the answers.

_____ Plants eat up the soil.
_____ Plants prevent erosion.
_____ Plants prevent soil from being carried away.
_____ Plants water the soil.

RAISE YOUR HAND AS SOON AS YOU ARE READY FOR THE GROUP DISCUSSION.



Trees, grass and other plants on the sides of mountains and hills hold soil. The plants keep the water from running down the land too fast. It keeps the wind from carrying away the soil.

Plants keep the soil from being carried to other places.

TREES, GRASS AND OTHER PLANTS CONSERVE SOIL BECAUSE THEY PREVENT EROSION.

Trees and plants prevent erosion. Rain drops on the leaves and runs down the plants slowly. Slow water does not carry much soil away.

The roots (gamut) hold the soil together. They hold the soil in place.

Trees break the force of the wind. Strong winds become weak. Weak winds do not carry much soil away.

TEST C.

COPY THE WORD OR GROUP OF WORDS THAT BEST COMPLETES EACH SENTENCE.

1. (No, Much, Little, All) soil is carried off by the wind when land is covered by grass.
2. Camote plants (keep the soil, wash away the soil, eat up the soil, blow away the soil) during heavy rains.
3. Hillsides covered with plants have (no, less, little, much) soil than hillsides no covered with plants.

TEST D.

WRITE YOUR ANSWER TO THIS QUESTION. USE THE ANSWER SHEET.

How do plants help conserve soil?

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

RAISE YOUR HAND WHEN YOU ARE READY FOR THE GROUP DISCUSSION.

RETURN ALL THINGS USED. PUT EVERYTHING IN ORDER BEFORE YOU LEAVE THE LEARNING CENTER.

STEPS IN WRITING PROGRAMMED LEARNING (PEER GROUP) MODULES

1. Restate the behavioral objectives for the module (as indicated in the learning continuum) in the child's language.

   Stating only the desired behaviors is considered adequate. The conditions and criteria for satisfactory performance are to be reflected in the tests.

   The module and lesson objectives may be reflected in their respective titles or in the form of one or two introductory statements. Although the former is acceptable, the latter is preferred.

2. Write the first draft of the criterion post test

   Formative evaluation is built into the learning sequence in each lesson in the module. Summative evaluation includes the module post-tests and block post-test.

3. Determine the prerequisite skills or concepts, if any, that the learner will need to successfully complete the lessons in the module (entry behaviors). These are to be tested and taught in the readiness portion (ARE YOU READY or HOW TO GET READY).

4. Determine the Content and Outline the Instructional Strategy for each lesson, with built-in formative evaluation, depending on the learning structures or types identified and following the strategies suggested for specific types of learning.

5. Write the module draft with the following basic parts:

   a. Cover page (module number and title).

   b. Title page (module number and title).

   c. Copyright page.

   d. Link or introductory statements as needed that relate the present module with the preceding one. Give a very brief overview of what the learner will be expected to learn from the module.

   e. Readiness test; "ARE YOU READY? LET'S FIND OUT ..."

   f. Remedial path: "HOW TO GET READY"

   g. Lessons, each of which consists of the following:

      - Lesson Number
      - Lesson Title
      - Link/Introductory statement(s) stating the objective in the child's language.
      - Teaching-Learning sequence using instructional strategies decided upon the fourth step above (#4)
      - Summary that synthesizes the whole module.
      - Post-test.

6. Submit the draft for critique (technical edit) by the IME and for editing.

7. Revise/Refine to implement suggestions, if any.

8. Prepare the Leader's Book/Feedback.

9. Write block Post-Test for a set of related modules (from 5-10 consecutive modules per block) to insure mastery learning.
10. Try out the modules (validity check).
11. Revise/Refine on the basis of empirical data and feedback from the experimental group(s).

THE LEADER'S BOOK

The Leader's Books should contain the following:

1. General directions on how to conduct a peer group discussion.
2. Special directions for activities/learning sequences that are unique to that particular module which deviate somewhat from the usual pattern covered by the general directions.
3. Feedback (answers to tests in the module).
4. Glossary of words used in the module not sufficiently toned down to the child's level (to be used only when necessary).

NOTE: The Leader's Book may instruct the group to use an appropriate dictionary available in the learning center , according to the language used in writing the modules.

GUIDELINES FOR WRITING THE LEADER'S BOOK

1. Procedure for Peer Group Learning:
   a. Follow the standard procedures for peer group learning as outline for the transition modules and the higher-level peer learning modules.

b. The Leader calls on each member to read his answers until all the members have been called.

3. The Leader and members try to agree which of the answers given are correct.

   a. Pupils with different answers will be asked to support the answers they gave. They may refer to specific portions of the text to do this.

   b. Pupils whose answers are the same/similar will wait until their answers are confirmed or corrected by the feedback provided in the Leader's Book.

4. The Leader then reads the feedback and explanation given in the Leader's Book.

5. Each pupil puts a check mark (/) after his answer if it is correct.

6. The group will discuss the answers given by the member(s) which are different from the feedback given in the Leader's Book.

   a. If they think that answer is also correct, the pupil puts a check mark after it. (All the members should agree before the answer is considered correct).

7. Repeat Steps 1-6 for the rest of the items in the test.

C. Require the group members (including the Leader) to take down important notes in the notebooks for them to study and review at home to ensure retention and mastery.

D. General Considerations:

The Leader should be reminded of the following:

1. He is expected to answer the tests with the group because he also has to complete the module being studied.
2. He is to give the members enough time to finish writing their answers before they discuss these and compare these with the feedback provided by the writer.
3. He is to allow the use of the dialect (Cebuano) in case a pupil wants to defend his answers but does not have sufficient English vocabulary to do this.
4. He is to ask the group to give comments or ask questions about the text and/or pictures before they continue or before they start reading and answering a test.
5. He should tell the I.S. Aide when the group is ready to take the post-test.
6. He is to ask the I.S. for help if there is something he does not understand or is not able to handle.
7. He is to maintain a certain degree of order and discipline in the group.

Guidelines for Performance Modules/Lessons (Manipulative Skills and Experiments)

1. Let the pupils read and understand all the steps before they start to follow each step. (This is to insure comprehension of the steps before actual performance, which would be very helpful to those who may not be able to be with the group for part or all of the remaining steps that may not have been finished during their first day on that particular module.)

2. For pages with pictures, have the group members do the following:

   a. Look at the pictures.

   b. Ask questions or give comments about the pictures. (Conceptualizing on the basis of pictures).

   c. Read lables/captions.

   d. Read test.

   e. Ask questions or give comments.

      Always ask the children if they have questions or comments to share with the group before starting to read and answer the test questions.

3. Have them copy in their notebooks the important rules, concepts, etc., so that they will have something to review at home. See to it that notebooks have proper identification, e.g., pupils' name, module no., lesson number, date, etc.

BASIC SKILLS PRACTICE

1. Guidelines for Preparing Practice Sheets for Vocabulary (Spelling and Word Meaning):

   a. Source of Words:

      1. words newly-learned

      2. words previously learned, e.g., practice sheets to go with Module 210 will drill on:

         a. Words learned in Module 209 or most recently learned

         b. Words learned in Modules before 209.

   b. Composition items:

      1. For spelling - (no more than 3 words per sheet)

         - (at least 3 of the more difficult review words)

         - (at least 4 of the relatively easy and most frequently used words).

      2. For Meaning - (no more than 3 new words per sheet).

         - (at least 5 or more difficult review words).

         - (at least 7 of the relatively easy and most frequently used words.

   c. Style:

      1. For Spelling (group) - dictation in context, e.g., spell "road", The car is on the road. Spell "road".

2. For Meaning [either one of the following; only one style per sheet (buddy system)].
   a. Translation into Cebuano.
   b. Translation into English/Pilipino.
   c. Answering questions like: What are baby frogs called? What is a synonym for large? etc.

2. Guidelin for Preparing Practice Sheets for Mathematics
   a. Source of exercises/skills:
      1. Newly learned skills
      2. Previously-learned skills
   b. Composition of items:
      1. No more than two types of difficulty per sheet.
      2. No more than 15 items per sheet.
      3. Concentrate on operational skills that are suited to quick/snappy practice.
      4. Give more practice on skills that require mastery up to the level of automaticity.

HOW TO CONTROL THE LANGUAGE USED IN THE LEARNING MODULES

1. Level
   a. The module should be addressed to the average pupil (more preferably to the slow pupil) in small rural schools like those in the target community.

The level of the language used in most textbooks is usually based on urban standards. The rural level would perhaps be one or two grade levels below this.

b. Use simple vocabulary and short, simple structures. Avoid long, complex sentences. A sentence is long when it takes up two or more lines.

c. Avoid high-sounding words, idiomatic expressions, and situations or examples that only grown-ups would understand, A situation or example should be natural and within the child's experience for him to be able to understand it.

d. Think as a child would think and look at the teaching information and directions as a child would look at them. In other words, PUT YOURSELF IN THE CHILD'S PLACE. If you were an average (or less than average, for that matter) elementary grade pupil in one of the schools in the target community, would you be able to understand what's in it?

(One good rule which cannot be overemphasized is this: In order to control the level of the language used in the module, make a conscious effort to write was if you were talking to the child at that particular moment and that you are doing your best to make him understand and learn.)

2. Clarity and Accuracy

a. Say exactly what you want to say and as clearly as possible. Do not be vague. Be concise and straight to the point. Avoid beating around the bush. Be sure that what you say or write will be understood and interpreted by the learner in exactly the way you want it understood or interpreted.

b. Do not say more than what is necessary but don't take too much for granted. Always review what you have written and try to answer these questions:

1) Have all the necessary information and/or instructions been given?

2) Are there any excess or irrelevant words, phrases, or statements that do not contribute to learning and might only tend to confuse the child?

An affirmative answer to the first question and a negative answer to the second would perhaps sufficiently serve as a check against saying too little or too much.

c. Use visuals to make a point clear. If a picture is truly worth a thousand words, then take advantage of this fact and use illustrations where words would prove inadequate. An excellent advantage of a good illutration is that it "speaks" a universal language of its own that overcomes barriers common to speech

and printed symbols in a second language situation. A good illustration can definitely show more and teach more effectively than a long, wordy, and unwieldy explanation.

d. Remember: We do not try to impress anybody with mastery of the English language by sophisticated use of it. Nor try to turn out journalistic masterpieces. True mastery of a language is being able to use it at any level, depending on the audience, and communicate effectively to the child so that he will learn. Success or failure as module writers, therefore, would necessarily depend on the degree to which each module does communicat to the learner and the extent to which it achieves the instructional objectives in a basically "non-teacher" situation.

3. Grammar

Write only grammatical sentences

Effective communication is carried out best when sentences are grammatical. The shorter and simpler the sentences are, the easier it will be to avoid ungrammatical structures.

CHAPTER 8

GUIDE FOR THE TRANSLATION OF MODULES

The IMPACT modules in the experimental site were prepared specifically for Cebuano speakers. In order that they may be used in non-Cebuano speaking communities in the Philippines, the Cebuano text in the programmed teaching modules and the transition modules should first be translated. The experience of Sapang Palay described in the following pages provides a guide for others interested in replicating IMPACT.

To insure that translation is done as accurately as possible, the following suggestions are given:

1. Have a copy of the IMPACT learning continuum handy for ready reference.
2. The translation should be done by a Cebuano speaker who is also proficient in the language of the target population or at least a speaker of that language who is also proficient in Cebuano.
3. Translate only the content. See to it that skills to be developed are not lost in the process of translation.
4. Where concepts to be developed are affected by cultural or regional differences, modifications may be made to suit local conditions, sticking as closely as possible to the original intention of the lesson/module.
5. Avoid literal translations of idiomatic expressions, Use idioms similar to the original expression but of more local usage.

6. Avoid adding activities/content not covered by the objective(s) or taking out activities that are vital to the objective. Remember, WHEN IN DOUBT, DON'T.

The modules used in Sapang Palay Project IMPACT were originally produced by Naga Project IMPACT in Cebu. In consonance with the Bilingual Policy some of these modules were translated either from Cebuano to Pilipino or from English to Pilipino. The other modules were simply adapted to suit local condition and the needs and interests of our pupils.

From the 465 modules listed in Appendix B, a total of 157 modules and 4 manuals were fully translated. (Full translation here means that the whole or major portion of the module was translated). The modules that were partially translated numbered 120. (Partial translation translation means that only minor parts of the module like direction and/or instruction were translated.) Those that were adapted totalled 199 modules in all. (Please see Appendix C)

Aside from the translation and adaption of modules, the production staff of Sapang Palay IMPACT also produced Leader's Books, Post-Tests, Worksheets, and Checlists. Each Programmed Teaching Module is provided with corresponding worksheets. Leader's books, post-tests, and/or checklists, go with Basic Modules starting from the transition modules and up as well as in Applied Skills and H.E. modules. For the Advanced Modules, only post-tests are provided.

Time Spent to Reproduce the Modules and to Prepare the Accompanying Materials

Based from the experience in Sapang Palay, the average number of days spent to reproduce a module which is fully translated is about seven days. It takes three days to translate; one day to cut in stencil; one day for illustration; another .25 day for final editing; and one half day to mimeograph, collate, and bind, for a total of seven days.

For a module that is partially translated, it takes only one half day to translate; .25 day to edit the draft; one day to cut in stencil; one day for illustration; another .25 day for final editing; and one half day to mimeograph, collate, and bind, for a total of three and one half days.

The time spent to prepare the accompanying materials such as leader's book, post-test, worksheet, and checklist is about 1.25 days. It takes one half day to write and edit; one half day to type; and about .25 day to mimeograph, collate and bind all these materials.

One subject matter specialist, therefore, spent about 4 days to work on a module which is fully translated, one and one half days if the module is partially translated, and one half day if the module is adapted.

A typist spent two and one half days to type a fully translated module, one and one half days if the module is partially translated, and only one half day to type the accompanying materials of an adapted module.

The most that an illustrator can finish in one day is about two modules and the least is one half module or an average of only one module per day.

Mimeographing, collating, and binding of a module depend on the number of personnel handling these jobs. In the case of Sapang Palay where there is no regular binder and collator except for a few volunteer teachers who work only during their free periods, it takes about three fourths of a daily working day to finish the job. However, if the module is adapted and only the accompanying materials are prepared, about one fourth of a daily working day is spent to finish the job.

At the rate mentioned above, the four subject matter specialists can finish their job in 12 months based on the following computation:

```
  161  No. of fully translated modules
 x 4   No. of days to translate, edit, and write accompanying
  644                                          materials

  120  No. of partially translated modules
x 1.5  No. of days to translate, edit, etc.
 60.0
120
180.0

  199  No. of adapted modules
 x .5  No. of days spent to write accompanying materials
 99.5

  644
  180
+ 99.5
 923.5  Total number of days
```

No. of SMS's - 4/923.5 = 230.8 or 231 days

*20/231.0 = 11.5 or 12 months

*Assuming that there are 20 working days per month.

The three typists can also finish the job in almost the same length of time in accordance with the rate mentioned above. Look at at this computation:

161	120	199
x 2.5	x 1.5	x .5
80.5	60.0	99.5
322	120	
402.5	180.0	

402.5
180.0
+ 99.5
682.0

No. of typists - 3/682 = 227

20/227.0 = 11.3 months

On the other hand, the lone illustrator averaged only one module per day. So, it will take 281 days to do the illustration of all the fully and partially translated modules. If 291 days is divided by 20 (assuming that there are 20 working days in a month), the quotient will be about 14 months. Hence, it will take 14 months for an illustrator to finish his job. With only one illustrator, the bottleneck of module reproduction will be in illustration work.

As to mimeographing, collating, and binding, it will take about 13 months to finish the job based on the average rate mentioned previously. Here is the computation:

```
  161 fully translated modules
+ 120 partially translated modules
  281 total

    281          199 adapted modules
  x  .75       x  .25
   14.05         9.95
  196.7         39.8
  210.75        49.75

  210.75                    13.02  or 13 months
+ 49.75                 20/260.50
  260.60
```

Number of Copies Produced Per Module and Its Accompanying Materials

In Sapang Palay, the first few modules for Levels IV to VI were reproduced at the ratio of one module per pupil. Later, the number of copies was reduced gradually as the faster groups of pupils moved ahead leaving behind slower groups of pupils. Since the slower groups can avail of the modules already studied by the faster groups of children, Sapang Palay mimeographed only enough copies for the faster groups. Three months after the start of classes, they were able to reduce the number of copies to as much as 50% or less.

The accompanying leader's book was produced at the rate of 40 copies because this material is used only by the peer group leader. In Sapang Palay, there were about 36 peer groups for each level in Levels IV to VI. So, 40 copies are more than enough for all the peer group leaders.

Sapang Palay also produced 40 copies of post-test for each module. They did not require their pupils to write on the test paper. Instead, the pupils were asked to write their answers on their own ruled pad paper. The number of children taking post-test daily on a particular module in the IMPACT school averaged 30 or less, hence, 40 copies are more than sufficient.

Checklists usually accompany performance modules in Applied Skills and Home Economics. The number of copies depends on the number of pupils who will study the module.

In the case of Programmed Teaching Modules (PTM's) for Levels I to III, they produced only 40 copies of each module. PTM's are used only by the Programmed Teachers (PT's). In Sapang Palay, there were about 36 groups of children for each level in Levels I to III. Hence, there were only 36 PT's who used the PTM's. The 40 copies that were produced were more than enough for their PT's.

The accompanying worksheets for each PTM were produced in accordance with the number of pupils who will use them. Hence, the ratio of production was one copy for each pupil.

PART III

THE INSTRUCTIONAL DELIVERY SYSTEM

The two main innovative features of the IMPACT system are: modules as materials for instruction; and a unique instructional delivery system consisting of three different modes - programmed teaching, peer group learning, and individualized study.

The overall emphasis in the delivery system (also called learning management system) is to provide the learner with learning-how-to-learn skills, rather than to pour facts into him. Thus, most of the learning activities are pupil directed with a minimum of assistance from the teacher.

The teacher in IMPACT no longer does regular direct "teaching". Her role is now that of a "manager" and "supervisor" of the learning activities and resources. Hence the designation "Instructional Supervisor", or simply I.S.

CHAPTER 9

THE COMMUNITY LEARNING CENTER CONCEPT

Project IMPACT deliberately offers its school doors to the community. At the same time it reaches out and seeks knowledge from the community. In IMPACT parlance, the entire community is a learning center where there can be variety of learning venues; where there are unlimited available resources for learning; where there is a place for the learners to congregate. The nucleus of this learning center is the school.

In accordance, therefore, with the concepts and rational of IMPACT, the school sites of Project IMPACT are re-named Community Learning Centers (or CLC's).

The term, Community Learning Center, is used in two contexts - as a concept, and as a structure.

Conceptually, the term CLC may be considered either a logical consequence of; or one that gives rise to the term IMPACT. The sequence is immaterial. What is important is that the IMPACT CLC maximizes the use of the formal school structure, making it the hub of all learning activities for the whole community - for the young and old alike. At the same time, parents and community members accept and exercise active roles in the learning of the child.

THE CLC STRUCTURE

Structurally, the CLC is a learning resource center from where the children can obtain their instructional needs, such as modules, and

other learning materials. These learning centers are furnished and equipped in order to make them more evocative and stimulating environments, thus contributing to the well-rounded development of the students.

In view of the nature of the instructional delivery system, the original school buildings need some remodeling, depending upon the existing architectural features. The purpose of this is to provide for the following:

THE LEARNING RESOURCE CENTER

It is best if this is as centrally located as possible. The Learning Resource Center has a multi-purpose use, but mainly as a library and testing center. It will also act as a storage area for the modules and other materials.

In the absence of a large enough room, the Learning Resource Center can be created by knocking down at least one partition between two adjacent rooms. Some buildings which have "accordion" or removable partitions lend themselves easily for this purpose.

To store modules and other devices, shelves may be constructed along the walls, in the absence of regular book cases. Post tests must be stored beyond the pupils' reach.

In a small school, the Learning Resource Center is also where the I.S. and the I.S. Aide would have their desks and working area. Space should be provided for them.

Part of the Center is for a testing area. Since progress in IMPACT is self-paced, testing is generally individual. Experience will show the number of pupils reporting for testing. On this basis, the area for testing can be adjusted accordingly. If testing carrels can be constructed, these might provide more privacy than tables or ordinary desks.

Depending on the space available, large tables and chairs should complete the facilities.

Wall spaces may be used for displays and other aesthetic decorations.

SPACES FOR SMALL GROUP LEARNING

The ordinary classrooms (7m x 9m) are used in IMPACT learning for programmed teaching groups, as well as a space for the I.S.'s table in schools where the I.S.'s are assigned a room each.

The number of programmed teaching groups that should be contained in one room will depend, among others, on the quality of discipline and control which the I.S. can maintain. Should there be need to disperse some groups, these can be made to study along corridors or other open spaces close enough for supervision by the I.S.

KIOSKS

Peer and Programmed Teaching Groups which cannot be contained in the classroom, will need learning places. IMPACT utilizes small sheds called kiosks for the purpose.

Each kiosk should have a chalkboard and enough seats. Permanent benches will relieve the children of having to carry their seats to the kiosks and back to the rooms everyday.

As with the conventional school system, the IMPACT system also has need for space and facilities for skills training. Thus a home economics room, shop for handicrafts, and space for a nursery and garden are also part of the CLC structure.

In the absence of a regular shop and home economics building, the children can utilize any available and appropriate space.

Some satellites are provided for out-of-school children for each CLC. These are called in Indonesia, PATJAR (tempat belajar) or learning posts. These are located in private homes, usually of a village official, consisting of space for modules; space for testing and remediatory activities.

CLC PERSONNEL

In IMPACT, the teacher, now called an Instructional Supervisor, or simply I.S., no longer conducts the conventional classroom recitation.

The best single way to describe the role of the Instructional Supervisor is as a facilitator of learning. Everything that an I.S. does whether it be monitoring peer-group learning or encouraging regular attendance of students, is done in pursuance of this role - to facilitate learning. Student learning is the primary goal of an Instructional Supervisor.

In contrast to the "teacher" who is the lecturer and source of information in the traditional classroom, the IMPACT instructional supervisor is a source of inspiration and a guide to his pupils. Rather than work with the whole class on one learning task, she works with pupils as individuals who progress through the learning continuum at their own rate. Her expertise does not consist in her being a master of teaching strategies, but of her being better acquainted with each pupil as a person and as a learner.

Management (of the learning process) is the key word in IMPACT. The various modes of learning are designed to develop the ability for self as well as small group study. Thus the main actor is the learner himself. The teacher's task is changed to that of management.

The daily activities of the I.S. in the performance of her role, may be grouped into three sub-tasks, namely:

Grouping pupils

Scheduling learning

Monitoring and guiding learning

As of the present, not all subjects have been modularized. Hence, the I.S., who takes charge of the modularized subjects, is assisted by an itinerant teacher. The latter takes care of the non-modularized subjects such as Physical Education, Arts, Music and Scouting. She may also be assigned to supervise school-wide activities.*

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*Please see the Terminal Report for a more detailed description of the Itinerant Teacher.

Immediately under the I.S. is an I.S. Aide who is supposed to be a community volunteer. The I.S. Aide is a non-professional who attends to the routinary activities. His qualification is at least an elementary school graduate. His tasks include:

1. To ready all materials needed by pupils in programmed teaching and/or peer group learning and to issue them out to the pupils.
2. To keep record of pupils' attendance and to inform the I.S. of pupils who are absent.
3. To assign learning places for programmed teaching and peer group learning.
4. To keep records of instructional materials, facilities and equipment delivered to the Learning Center and to keep them within easy access of pupils.
5. To administer post tests, to check the papers and inform the I.S. of the child's performance.
6. To inform I.S. of inadequacy of supplies and facilities at the Learning Center.
7. To maintain records of pupils' group and individual progress on contracts and to inform I.S. of pupils falling behind schedule.
8. To maintain records of tutors' attendance.

Aside from the I.S. Aide and the Itinerant Teachers, there are also tutors. In practice, only graduating high school students were able to extend this kind of assistance to Level IV, V and VI pupils.

Completing the team of instructors are the community resource persons. As the need arises, and as resource persons are available, they are utilized by the system to assist in their line of expertise.

CHAPTER 10

INSTRUCTIONAL DELIVERY SYSTEM

As the name suggests, IMPACT is an instructional delivery system in which the parents and the community collaborate and cooperate with the school toward the education of the child. IMPACT is also described as a management system of education aimed at reducing the total costs of education without sacrifice of its quality.

A more precise description of the system will demand an examination of its many innovative features which have no parallel in the conventional system of education in most developing countries. The main feature is learning through modules.

In the IMPACT system, the textbook is replaced by modules developed by subject matter specialists. The child may go through each module either individually or with a peer group or a programmed teacher, or a tutor. In view of individual differences, progress through modules is self-paced but only after mastery has been demonstrated. Self-pacing implies that IMPACT is ungraded.

Progress is indicated by the number of modules completed by a child. Children no longer refer to themselves as second, or fifth graders; they simply say what module number they are presently studying. The criterion for completion is mastery through a module post test.

Monitoring and guidance of learning is the prime responsibility of Instructional Supervisors. No other duty takes precedence, because it is through careful monitoring of the learning process and providing help and guidance when difficulties occur that the IS can truly be a facilitator of student learning.

Since learning will be occuring primarily in groups (programmed teaching, transition learning and peer-group learning) the main monitoring activity will be the results of this monitoring that will be the basis for subsequent IS help and guidance to those in need.

If an IS is responsible for two families of six groups each, there will be nine groups to monitor during any given one-hour period (three of the ISs twelve groups would not be meeting as groups; they would be conducting programmed teaching). The IS should plan to stop by each group for some five minutes each period (a total of 45 minutes thus used) and use the remaining 15 minutes in giving special attention to particular needs, most likely with the less able members of peer groups during the "individual pursuits" period, (this five minutes per group per period, allows an IS at least 15 minutes of monitoring/guidance per day with each peer-group because peer group learning covers three one-hour periods).

Considering that everyday may be an entry day in an IMPACT CLC, every child who joins an IMPACT school is first given the guides, to learning, depending on which part of the continuum he slips in.

For example, if he is in the programmed teaching stage, he is given orientation by the IS on the expected behavior during programmed teaching period and other related activities. If he is a transition learner or a peer group learner he is given orientation to his own learning activities as well as to his activities as a programmed teacher.

The usual time for the orientation on Learning How to Learn Techniques is at the start of the school year. However, a child who comes in later during the year is given the same orientation.

Regular school attendance is the norm in Project IMPACT. A child may be excused from regular attendance only if he is sick, or if his parents urgently need him in their work. When this happens, he requests for a leave of absence.

In other words, IMPACT follows the regulations of the Ministry of Education and Culture in regard to attendance.

In IMPACT, moreover, the grouping of students in programmed teaching classes and in peer groups makes Center attendance the norm. Absence from these will jeopardize the progress of the group. The system remains flexible, however, in allowing students to practice self-study when they cannot attend.

ORGANIZING THE PUPILS

Since IMPACT is non-graded, the usual categories of children by grade levels do not apply* Instead, the entire school population

*For convenience, however, modules are grouped according to their grade-level equivalent in difficulty. Hence, it is still possible to identify the equivalent grade level of children. Please see Appendix A.

is divided into families of at least 40 to 50 multi level pupils. One instructional supervisor may handle 2 to 4 families provided the entire group she manages does not exceed 200 pupils.* This vertical grouping of students is the basis for scheduling.

A typical family make-up may be as follows:

Level	Number of Students
VI	6
V	6
IV	7
III	9
II	10
I	10

The difference in the number of students is a function of the size of the enrolment per year level.

All instructional supervisors at a Center meet together in setting up families. One criterion to be met by the family make-up is that friends, neighbors, brothers and sisters belong in the same family. This criterion is important because family members will want to feel responsible for each other. Friends and neighbors will have a greater feeling of responsibility for their group mates. Another criterion is the mixing of sexes in each level, an important contributor to the socialization of children.

*Some I.S.'s in Sapang Palay handles a maximum of only 120 pupils.

MODES OF INSTRUCTIONAL DELIVERY

There are three main modes of delivery of instruction in IMPACT: Programmed Teaching; Peer Group Learning; and Individualized Study.

1. Programmed Teaching

Programmed Teaching is a kind of instruction where the "Programmed Teacher" (or P.T) strictly follows a pre-arranged lesson which does not only present what is to be taught but also how it is to be taught. In turn, the P.T. follows a set of sequence of steps in presenting the lesson (hence, the term Programmed Teaching). The pre-arranged lesson is prepared by professional teachers whose role in the IMPACT system is that of module writers. It is the main mode of Levels I, II, and the first semester of Level III.

The Programmed Teaching Groups are made up of some 8-10 children of mixed sexes for each of Levels I, II and III. Naga has found it best to make them fairly homogeneous in ability by subject so that the teaching process can be accelerated for the more able and made less fast for the less able. Regrouping is done fairly often on the basis of the developing abilities of the children.

The programmed teachers are elder pupils who have already attained mastery of the basic literacy and numeracy skills. Level VI pupils teach the Level I; Level V teach Level III; and Level IV teach Level II. A P.T. is assigned one hour a day (1/2 hour for P.T. and 1/2 hour for tutorial for slow learners).

Proyek PAMONG was restrained in its implementation of Programmed Teaching. This system of imparting knowledge to Levels I and II was attempted only in 1976 and only to Level I. In 1977 only Level II was programme taught while Level I was taught in the conventional manner. Moreover, Programmed Teaching was only for Bahasa, Mathematics, and Science.

In 1978, Programmed Teaching was implemented in both Levels I and II according to the following schedule:

Level I - Starting Trimester II in Bahasa Indonesia and Mathematics only

Level II - Starting Trimester I in Bahasa Indonesia, Mathematics and Science only

Level V children programme taught Level I; whereas Level VI children programme taught Level II.

One hour a day was spent in Programmed Teaching and the other hour for all other subjects under the I.S. Aide (a professional in PAMONG). These other subjects are: Social Studies, Home Economics, Physical Education and Health, Drawing and Local Dialect.

Level I children held classes for two hours in the morning followed by Level II children for the second two hours. (This is the usual schedule of all schools in Indonesia). Only Levels

III, IV, V and VI held classes for the whole morning. There were no afternoon sessions, however, classes were for 6 days a week.

By 1977, all Levels V and VI children were required to act as Programmed Teachers. This was in contrast with the original scheme where only the bright and able children were allowed to programme teach.

The reason behind the use of Programmed Teaching for only Levels I in 1976 and for only the same children when they were in Level II in 1977, was simply a cautious decision to guard the children against the ill effects of an untried system.

Moreover, the Ministry of Education and Culture had developed a new methodology for universal use in the teaching of beginning reading in Bahasa Indonesia, the so-called SAS or (Structural Analysis and Syntactic) method. Even experienced teachers were not familiar with the method and its use through Programmed Teachers was therefore viewed with caution.

A more practical reason was the lack of Programmed Teachers.

Some Language lessons in English and Mathematics have been provided by models on radio or simulated radio, such as cassette recorders. Starting school year 1977-1978, in the Philippine site in Cebu, these language lessons were broadcast daily over Ministry of Public Information radio.

Five families provide an optimum setting for the scheduling of programmed teaching because it will permit the students in a given peer group to do programmed teaching at the same time. Thus, peer group learning will not be disrupted as would be the case should only one or two of the group be gone (for programmed teaching) while the rest continue in peer-group learning.

The schedule below illustrates how a single peer group conducts programmed teaching for five families at the same time. (Note that five families grouped this way allow for <u>five</u> periods of programmed teaching by peer groups from different families).

Basic schedule of activities in each Learning Center in the five schools in Naga

7:30	-	7:40	Flag Ceremony
7:40	-	7:50	Opening of Exercises
7:50	-	7:55	Trip to the Garbage Can
7:55	-	8:55	First Period
8:55	-	9:10	Spelling Drill
9:10	-	9:20	Recess
9:20	-	10:20	Second Period
10:20	-	10:35	Math Drill
10:35	-	11:35	Third Period
	NOON BREAK		
1:30	-	2:30	Fourth Period
2:30	-	2:45	Vocabulary Drill
2:45	-	3:45	Fifth Period
3:45	-	4:45	Green Revolution

Sample Schedule of Activities for Families in Levels IV to VI

Families	7:55-8:55	9:20-10:20	10:35-11:35	1:30-2:30	2:45-3:45	3:45-4:40
Camia	PT	PG	PG	PG	IP	GR
Rosal	IP	PT	PG	PG	PG	GR
Adelfa	PG	IP	PT	PG	PG	GR
Ahito	PG	PG	IP	PT	PG	GR
Rose	PG	PG	PG	IP	PT	GR

PT - Programmed Teaching

IP - Individual Pursuits

PG - Peer Group Learning

GR - Green Revolution

It would be well if two IS's were to join their families for this purpose. One IS could have only two families but have additional responsibilities related to monitoring the work of the Aide in the materials center. The other IS could have three families and limit her responsibilities solely to the children and have no administrative duties.

2. Peer Group Learning

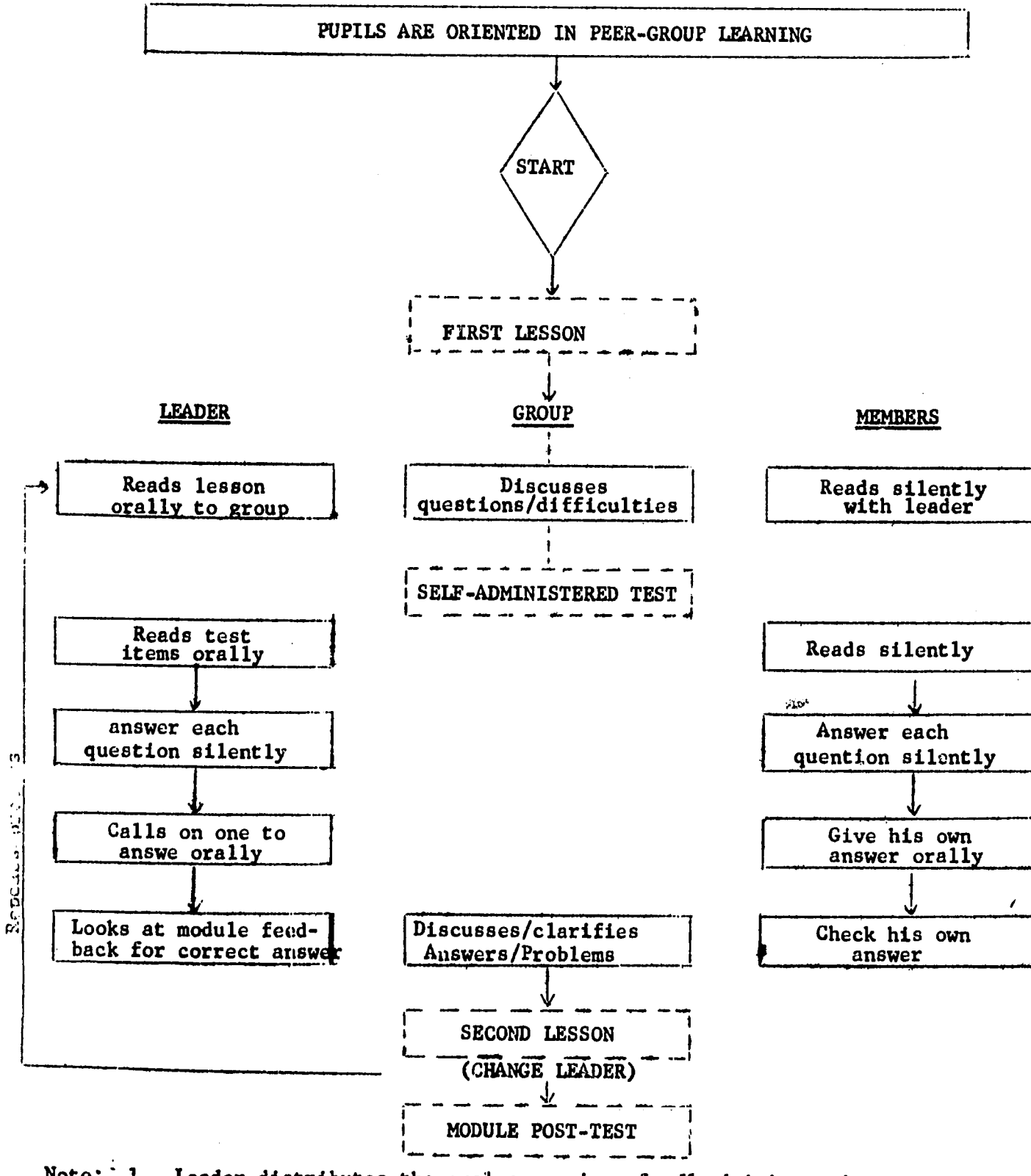
Elder pupils who are on the second half of the continuum use the peer group learning mode. Each group is composed of 5 to 6 members who are heterogeneous in ability but who are studying on the same core modules. Each member of the group takes turns in acting as group leader and in answering questions.

In setting up peer groups, heterogeneity is a necessary criterion so that children of different ability levels can learn from each other. The difficulty with homogeneous grouping is that the slower students would fall farther and farther behind, lose their self respect and eventually drop out.

Every family has at least three peer groups: one Level VI, one Level V, and the third, Level IV.

Each peer group spends no less than three hours each day for peer group learning. However, the slower learners are given an additional hour to complete their activities on the core module, while the fast learners spend their hour on the advanced modules.

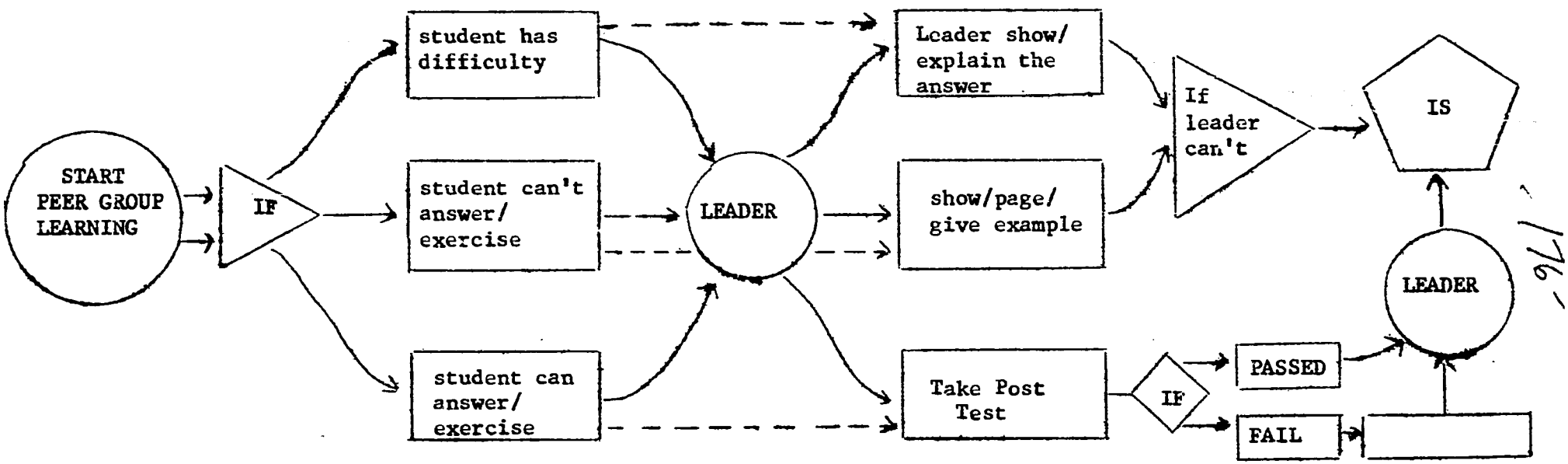
IMPACT MODEL FOR PEER-GROUP LEARNING



Note: 1. Leader distributes the oral answering of self administered test evenly to all members.

2. Leader and members take module post-test individually.

PEER GROUP LEARNING



During the six periods in a day for Level IV to VI, one is given over to programmed teaching and one to the Green Revolution.

All pupils have green revolution activities at the last period of each day. During this period, Level IV to VI undertake activities provided for in their modules while Levels I to III are directed by the IS's.

Contracting

Contracting is an integral part of Peer Group Learning. Responsibility is developed with a group through a system of contracting. Simply, a group promises, in writing, to complete a number of modules for the week. Due recognition is made of the performance of each group with respect to its contract.

Levels IV to VI pupils sign a group contract with their IS at the start of each week. The IS goes over the contract proposal of each peer group to determine if the targets they have set for themselves during the week are within the group's capabilities and abilities.

Group completion of contracts are recorded in the contract progress chart which is conspicuosly hung in the Learning Resource Center. In addition to this display of progress, the members of the peer group are given positive reinforcements by the IS Aide and the IS.

Contracting provides the means by which the IS can pace learning to challenge all students to do their best without, at the same time, overloading any child. This judgment of the IS requires an intimate knowledge for the individual capabilities of all students under her care.

The majority of contracts are with peer groups. Each group reviews forthcoming modules and decides what it will be able to do. The group presents their proposal to the IS for review. Typically, the IS will accept a proposal, but she may discuss and suggest changes if she feels that the proposed contract is either too easy or too difficult for the group. (Note that, although each group is heterogeneous in ability, some may be faster or slower than others). When the "negotiations" are completed, contracts for the new week are signed by the IS and all members of the peer group. Each peer group is provided with a copy of the contract (the other is under the care of the Aide) so that all members can be aware each day of how the group is progressing toward their target.

In addition to group contracts, a number of students will enter into individual contracts, but the "negotiations" (counseling) result in actual contracts. Individual students who contract for advanced modules sign separate contracts with the IS.

The educational value of contracts is that (1) each student is challenged to achieve at his or her ability; and (2) all students have periodic (weekly) goals toward which to work. They are able to judge their progress toward their goals each day as a basis for allocating their efforts.

The above (knowledge of progress toward mutually-agreed goals) is an extremely strong incentive, in itself, for achievement. IMPACT, however, ties a number of other incentives to contract completion. These rewards take the form of the posting of progress on display charts, the issuing of colored tokens which may be traded for tangible rewards during a community-supported rummage sale, prestigeous responsibilities in the Center, or whatever other rational and fair incentive systems which fit the local values and resources.

Incentives, such as those above, are usually group rather than individual rewards. (The individual usually is rewarded simply by (1) knowing that he or she is progressing faster than the norm, (2) realizing that advanced module achievement leads to high school entry and (3) receiving personal encouragement from the IS).

Since the competion of contracts by the <u>total</u> peer group is of utmost importance, incentives are the highest for total group achievements. (Children in a group should feel a responsibility

toward each other so that all can achieve group goals, and they should feel this responsibility strongly enough to take upon themselves the return of absentees to the Center and the acceleration of learning for those who have been absent on their return. It will have to be judged by the IS when an absentee should be considered a "non-member of a group so that the group will not be unduly penalized regardless of its efforts towards absentees).

The continuance, week by week, of contract fulfillment also should be rewarded because of the consistent progress shown by a group.

One system tried in Naga is scaled thus (the height is "3").

Incentive Level

1. All (but one) members complete the contract in a given week.
2. All members complete the contract in a given week.
3. All members complete the contract for four consecutive weeks. (Note: This criterion can be met if a returned absentee can complete previously unfulfilled contracts.)

Progress charts are maintained and displayed prominently by the IS. This function is an important weekly activity when all children gather to see how they fared. The more importance the IS gives to the posting of contract completions, the more important it becomes to students.

Charts are maintained by peer groups, but all students in each group are separately named and recorded. An example is below.

(▱ indicates a contract completed late. A "O" indicates an uncompleted contract)

		JUNE				JULY		AUG	SEPT
GROUP #1 "CRESPAS"	ANDRE	*	▱	*	*	*	▱		
	BIBI	*	*	*	*	*	*		
	DADI	*	*	▱	*	O	O	etc.	
	FELICIA	*	*	*	*	*	*		
	YOMI	*	*	*	▱	▱	*		
		2	1	1	3	-	-		
GROUP #2 "SAN MIGUEL"	BENJI	*	*	*	*	*	O		
	FRED	*	*			*	*		
	GIGI	*	*	*	*	*	*	etc.	
	NIKI	*	*	*	*	*	*		
	POLI	*	*	*		*	*		
		2	2	1	3	3	-		

Project staffs should develop their own incentive systems and methods of recording. But the important point to keep in mind is the need to give recognition to group achievements so that all members of each group will take joint responsibility.

3. Self-Instruction

The majority of learning time for Levels IV to VI is given to peer-group learning. The main reason for this is to enable the children to help each other.

The versatility of the IMPACT system, however, allows for self-instruction. For this purpose all modules are designed for both peer-group learning or for self-instruction. The same modules can be utilized for both learning modes.

In practice, one period each day is to be given to what has been termed "individual pursuits". This is the hour during which the more able students study enriched advanced modules (alone or in small groups). This is also the hour during which the less able members of peer groups review and study the core module which the whole group had been studying during the previous three periods. (Note in the suggested scheme above, that Individual Pursuits always follow the three periods of Peer-Group Learning).

ISs will have to set up and maintain this type of schedule to insure that both kinds of learning occur during the one hour of individual pursuits. Most importantly, the IS should schedule herself or himself and tutors to assist the less-able peer group members during the individual pursuit period.

Self-learning, and hence, self-pacing in the IMPACT system is based on the following principles:

a. It is possible to design primary school learning materials based on the current curriculum in such forms to serve effective self-learning with minimum guidance by teachers and assistance by older children.

b. It is possible to entrust responsibility to children to do self-paced-learning without being rigidly tied up to time, place and teacher's supervision.

c. It is possible to administer the principle of self-learning in certain grades of primary school.

Self-instruction is allowed of elder pupils who have attained literacy skills in the media of instruction under any of the following conditions:

a. When the learner has been absent due to illness or other legitimate reasons, and want to catch up with his group.

b. When the learner has to stay away from the Learning Center to help his parents at work and he wants to keep pace with his group through self-instruction during his free time at home.

c. If the learner is an out-of-school youth who wishes to continue with his elementary education.

d. For the fast learners or the more able student who study the advanced module while waiting for his peer group to finish the core module being studied by the group.

Some of the more able students will have time to study advanced modules alone (including those in the core curriculum). These may be assigned as part of contracting.

It must, however, be insisted that peer-group learning is the norm for Levels IV to VI for the learning of core modules.

4. Other Modes

Aside from the three main modes of learning, IMPACT utilizes others for specific purposes.

a. Transition Learning

Level III pupils who complete the programmed teaching modules allotted for first semester's work start with simplified peer group modules which prepare them for peer group learning in Level IV. However, unlike the peer group learning mode for Levels IV to VI, the Level III pupils go through Peer Group Learning activities with a Level V pupil monitoring their activities and providing them guidance and support.

Since these simplified peer group modules serve as bridge between structured programmed teaching modules and group-paced peer group learning modules, these are called transition modules.

Grouping should be heterogeneous as much as possible. However, if teaching groups are programmed to be homogeneous

at an earlier time, it will be difficult to develop much heterogenei for transition learning groups because the faster programmed teaching groups will be ready for transition earlier than the slower one. (Perhaps this possible consequence of homogeneity of programmed teaching groups is a telling argument for group heterogeneity at all learning levels.)

In Proyek PAMONG, transitional learning was entirely under the Registrar who is a professionally trained teacher. It was a period for remediation and orientation to self-learning and peer-group learning with the use of modules.

b. Learning through Tutors

In a traditional classroom, where one teacher handles as many as 40 children, the teachers usually direct her attention and teaching only to some impersonal "average" child.

Tutorials form one major component of the IMPACT Management System. Levels IV to VI pupils are tutored by high school students, parents, relatives and neighbors at the Learning Center and at home. Level I to III pupils are given one half hour tutorials for each subject by their programmed teachers after every 30-minutes of programmed teaching.

The original IMPACT proposal called for the utilization of high school students to help Levels IV, V and VI pupils.

This was not feasible in the Indonesian context. In the first place, the secondary school students had hardly any free time. In the absence of some tangible incentives, there was no point in making arrangements with the secondary schools of the locality, who, anyway, belonged to another quite separate system. There was also the problem of transportation to contend with. The nearest high school to the PAMONG sites is several kilometers away.

As practiced, therefore, tutoring in the PAMONG system involved the use of older and brighter pupils of Levels V and VI to assist their less able classmates, especially in individualizing learning. They were assigned per trimester and unless they were absent, or they drop out, they remained as tutors for the entire trimester.

In the Philippines, tutorial refers more to the part played by High School students. These report as often as they can tutor and at the same time they earned credits needed for their own graduation from high school.

Aside from doing tutorial work, the tutors were also expected to conduct modular post tests, remedial work and other simple administrative tasks, such as reporting marks to the I.S.'s Aides.

Both the high school students and the home tutors are given orientation on how to tutor at the start of each school year.

In both sites, however, the demands of their struggle for livelihood frequently prevent parents from fully performing their roles as components in the IMPACT system.

In fact, insofar as Solo is concerned, this assistance and cooperation from the community to the IMPACT/PAMONG system may be described mainly in the form of "open-heartedness" toward the system. Their open-heartedness is indicated by the facts that there are no complaints and no parents have withdrawn their children from the IMPACT "schools".

Tutors give help primarily to students experiencing some learning difficulties. After the Aide scores module post tests, the IS reviews the results and assigns tutors to those who did not pass. The tutor is expected to review with the students those parts of the module not fully understood. Tutors must avoid simply giving and explaining the right answer because full understanding can come best from reviewing the module itself. It is the responsibility of the tutor to be certain that the student understands, usually by asking questions similar

to the ones missed in the post test, before asking the actual post test questions again. Once convinced that a student has full understanding, the tutor informs the Aide that the child has passed the post test so that the Aide can record the pass.

Tutors also work with some of the less able students in peer groups. During the one period each day given to "individual pursuits" some members of a peer group will need to spend this period in continued study of the basic core module which the peer group is learning from at that time. (The more able students spend this period on advanced modules.) Tutors often sit with and help those needing it during this period. (Note that the time at which "individual pursuits" occurs is different for each family because of their different schedules for programmed teaching.)

Levels I to III are led by programmed teachers from Levels IV to VI. However, only one-half the period is spent in formal programmed teaching; the other half of the time is spent by these older students in giving help to those having the most difficulty. This also is tutoring.

The IS often will assign more-advanced students to spend a short time with members of their own group helping to overcome difficulties. This procedure is "peer tutoring".

c. Itinerant Teaching

IMPACT Naga has two itinerant teachers who handle Physical Education, Scouting, Arts, and Music. These two teachers spend one half day each week at each Learning Center and conducts large group mode activities.

In other words, IMPACT has reduced the number of professional educators to two types in each Center. The I.S. and the itinerant teacher provide for special types of training, a system of itinerant teachers has been initiated. There were two such itinerant teachers serving the five Naga villages. (Since they will spend only one-half day in each Center, the same two teachers could serve 10 Centers at some later date.)

One itinerant teacher will be for Girl Scouts, Feminine Hygiene, Physical Education, Music and Arts (Girls).

The other will be for Boy Scouts, Physical Education, Music and Arts (Boys).

The itinerant teachers may also demonstrate the performance modules in Practical Arts and supervise the school beautification activities of the children.

They are expected to come to a given Center at the same time without breaking up the continuity of peer learning on the basic core modules.

BASIC SKILL PRACTICE

In the integrated continuum of IMPACT, there is a definite sequence of 1) learn, 2) practice, and 3) use. Skills, knowledges, and attitudes learned in one module are practiced fairly immediately on a variety of subject areas so that the learning can be both generalized and made relevant across subject areas. Later modules also provide for use of the learning in various context to enhance long-term retention.

There are some basic skills, however, which require repetitive practice and drill for students to become proficient. These skills are in Mathematics and Language.

IMPACT will provide for 10-15 minutes of daily drill in three subjects in Naga and Lapu-Lapu:

1) Mathematics, including practice in addition, subtraction, multiplication, division, fractions, etc.
2) English, primarily vocabulary and usage, and
3) Pilipino, primarily vocabulary and usage.

Pilipino may not be needed in Sapang Palay.

These practice drills are primarily for peer-groups and are intended to be used during breaks between periods. The content of drills will be made appropriate to the learning levels reached by peer groups.

5. Skills Training by Community Resource Persons

The hypothetical description of the role of the parents specifies that parents are expected to take responsibility of their children's progress and to monitor the day-to-day activities of their children.'

To enable the parents to carry out the above functions it may be necessary to expose them to an on-going education program.

Among the points taken up at the meetings are:

1. The role of the parents in:
   a. encouraging their children to study
   b. encouraging them to report to the Learning Center
   c. informing the I.S.is of the pupils' absence from the CLC whenever requested
   d. visiting the Learning Center for conference with the I.S. whenever requested
   e. attending parent education sessions.
2. Parents' assistance on the physical improvement of the Learning Center and the construction of the Learning Kiosks.
3. The need for some parents who are knowledgeable on certain topics concerning world events, and/or who possess certain skills which can be shared with the learners.
4. The purpose and contents of the monthly report card.

5. The school's system of incentives and rewards.
6. Presidential Decrees which define the role of parents towar their children.
7. The meaning of self-pacing and mastery learning in IMPACT Management System.
8. The IMPACT Festival.
9. Community survey on the number of school-age population.

IMPACT utilizes the specialized skills of some community members. Certain modules for transition learning and peer group learning activities in Social Studies, Science, Applied Skills and Home Economics, direct the learners to approach community resource persons.

Meetings between the learners and the resource person in the latter's residence or work station are arranged by the Rural Coordinator.

Children may either go to the resource person, or the resource person may come to the school. In practice, it is enough if one resource person is able to assist one day in a month for specific skills, usually in vocational arts and home economics, and even Science and Social Studies. In Project IMPACT, the coordination of community cooperation is a specified function of the Rural Coordinator.

Typically, such training is away from the Center at the homes, farms or offices of community members. Children go as a group at a time scheduled with .the community member by the District Office. If the skill is appropriate for both sexes and is part of the core modules, two or three peer groups may go together at the scheduled time. However, a number of Home Economics and Applied Skills modules are sex specific with the girls taking Home Economics at the same time that boys are taking Applied Skills. In as much as possible, these modules are scheduled at the same time so that peer groups can come back together at the same time to continue their other core modules.

It is the community member who usually determines if the children pass requirements of the module, and no other post-test is required.

CHAPTER 11

EDUCATING THE OUT-OF-SCHOOL YOUTH

One of the objectives of Project IMPACT was to develop a delivery system of primary education that would be available to all youth of school age. The main bulk of this population is reached through the formal school system. Inevitably, however, for one reason or another, children drop out of school without finishing the six grades. The possibility that these children will revert to illiteracy is great. It is, therefore, important that efforts be made to reach them.

The model for this is Proyek PAMONG's "Learning Post Concept".

Proyek PAMONG in February, 1976 launched a program for the out-of-school youth. By definition, the program was limited to children between the ages of 10 to 16 years.

STRATEGY

In February, 1976, an inventory of drop-out children was made. In time they were called to a meeting in the village and there, together with their parents, Proyek PAMONG staff explained the program for them.

By November, 1976, only 40 were left. The rest had dropped out. Of these, 19 took the final examination and 14 passed the Grade VI level.

In 1977, the strategy was changed. Instead of using the villagers to help in locating the drop-outs, the Project utilized the in-school

students to contact their friends and acquaintances. One reason given for the change in the strategy was to remove the pressure from persons in authority evident in the 1976 strategy. It was also discovered that not all information about the drop outs given by the village authorities was correct.

The concept recognizes the constraints which face the out-of-school. Provision, therefore, is made for the school to meet the child half-way where it is most convenient for the child. Under this concept, the child reports to the learning post during specified times. At these times, a teacher will be there to help him.

In this sense, whether a learning post is established as part of a PAMONG CLC or of a conventional school, a learning post is like a satellite to the school. The mother school provides the learning materials, professional help and supervision.

A learning post is a place of assembly for the out of school and a teacher aide. In practice, it can be the house of a village leader, or any convenient place with minimum facilities, the most important of which is lighting. Meetings are usually done at night.

Administration

Basically, the administration of PAMONG Learning Posts is similar to that of regular primary schools.

Enrolment is recorded in a PAMONG Learning Post which is of the same kind as the school register. Learning Post children have the right to and must take, official tests and examinations. Their grades are entered in their report cards. Other learning progress records are kept for Learning Post children similar to those of the regular school children.

The only difference is that the Learning Post children do not pay school fees.

Supplies of modules are centered at the primary school which is assigned to manage PAMONG posts. An itinerant (out-of-school) Instructional Supervisor Aide assisted by learning post attendants takes care of the module supplies needed in each post.

Learning post attendants come, take and return the finished modules. The modules which are no longer needed at the posts are brought back to the school by the above IS Aides.

Children learn the modules at home or wherever they like. In case of difficulties they may seek help of whoever is ready or able to solve the problem or give information/explanation.

Module post tests or block post tests necessary for remediatory treatments are administered at the Learning Posts by the out-of-school IS Aides at times which are decided by the children and the IS Aides. Generally, two meetings a week are held in each Learning Post, each meeting lasts for about two hours. It is in these sessions the IS Aide meet the children.

In the PAMONG CLC organization, the manager of the Learning Posts is the out-of-school IS Aide. He is a regular school teacher dwelling in the respective village or sub-village.

The manager of the Learning Post is responsible for:

... recruiting drop-outs

... coordination with local officials/administrators and community education official

... preparation of learning posts together with the drop-outs under his/her management

... decision of learning post activities in cooperation with the children

... taking care of modules and returning the modules to the school if the modules are no longer needed

... administration of module post tests and remediatory treatment

... recording of attendants

... preparation of children's progress report and reports of any kinds concerning the Learning Post

The crucial problems in the management of out-of-school children are:

1. How to make them ready to come back to learning situation at PAMONG Learning Posts.
2. How to keep them learning and encourage them to continue learning until certification.

The Learning Process

Learning is mainly non-formal. After a placement test which determines a child's grade or module level, he is allowed to sign out modules. These he studies at home or wherever convenient for him. If he finds difficulty, he is at liberty to consult or ask the help of anyone.

At the learning post, the child is given tutorials, or examinations, and generally accorded the guidance of a professional. He then returns completed modules and signs out new ones. Completed modules are returned to the CLC by the itinerant teacher or aide.

Module post tests or block post tests and other remediatory treatments and tutorial are administered at the Learning Post by an itinerant out-of-school Learning Post Aide, at times which are mutually decided upon by the children and the Aide.

Generally, two meetings a week are held in each Learning Post, each meeting lasts for about two hours.

The experience of Proyek PAMONG in bringing education closer to the reach of the out-of-school has verified the same problems which other institutions with similar objectives face. The problems are two-fold:

- How to motivate the out-of-school so that he avails of the opportunity to learn in the learning post.
- How to sustain his interest so that he continues to learn until he acquires a certificate of completion.

Inducements and incentives to learn at the learning posts had been provided mainly by the parents and village elders. The diploma, as diploma was in itself an attraction enough. However, there were a few cases where the motivation for the diploma, was the requirement of an employer for a certification of completion of elementary schooling. For these particular case, Proyek PAMONG had to establish a learning post in a village outside of the legitimate legal boundary of the Project sites.

Although the enrolment in the out-of-school program showed a decline, the program has actually gained stature in that it served a neighboring village, Kemiri, and the range of purposes of the enrollees have included job qualification. Three children who are factory workers in the neighboring village of Kemiri enrolled because the factory insisted that they earn the elementary school certificate since all their other employees are at least high school students. Moreover, two of the graduates of learning post have since gone to high school.