

# An Instrument for Individualizing Instruction

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**M**ANY persons believe that there is great demand for an educational system that can meet the needs of students at all ability levels. They hold that this goal can only be achieved through some form of individualized instruction. Proponents of "status quo" will argue that in theory individualized instruction is good but that in practice it will not work. This is an absurd contradiction. If one accepts the validity of the theory, then he must accept the idea that it can be successfully applied—the problem is to determine *how*.

Educators who have recognized the need for individualization of instruction have hesitated to undertake the task because of the lack of an effective instrument for implementation. *An instrument now exists*. It has proven its effectiveness and is readily available to you through the IMS project.

## The IMS Project

Since July 1, 1968, a staff of eight educators, funded by a U.S. Office of Education Title III grant, has been working on the Interrelated Mathematics Science project. The project is based at Nova High School, which is the educational research and development center for the Broward County Board of Public Instruction, Broward County, Florida. The *major objectives* of the project are:

1. To design a conceptually based program of instruction in the fields of mathematics and science, grades 9-12, in which the subjects

are interrelated, yet retain the basic course structure vital to continuity in each discipline

2. To individualize the instructional program according to the individual aptitudes, attitudes, and interests of each student

3. To devise and evaluate a systems approach to individualized instruction, utilizing multimedia and multi-mode techniques, in order to provide the necessary alternate paths to learning.

## The Learning Activity Package

Specially designed booklets called Learning Activity Packages (LAPs) are being written in both mathematics and science. This learning instrument was conceived and developed at Nova High School about six years ago. Because of its proven effectiveness and increasing employment by educators throughout the nation, the LAP system was adopted by the IMS project.

The primary function of the LAP is to guide the student through a highly structured program of learning materials. Each contains a brief rationale as well as a statement of the performance objectives written in behavioral terms. Pretests and post-tests provide one means for evaluating student progress. In any LAP, several paths to reach a particular objective are possible. The path

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a student takes is determined by the individual's abilities, needs, and interests.

The *format* for the learning packages, which evolved after considerable trial and error, is as follows:

1. Rationale
2. Performance objectives
3. Pretest
4. Pretest analysis
5. Basic references
6. Program for learning
7. Self-evaluation test
8. Self-evaluation test analysis
9. Appendix—references, problems and applications, supplementary information, glossary, etc.

### How a Student Uses the LAP

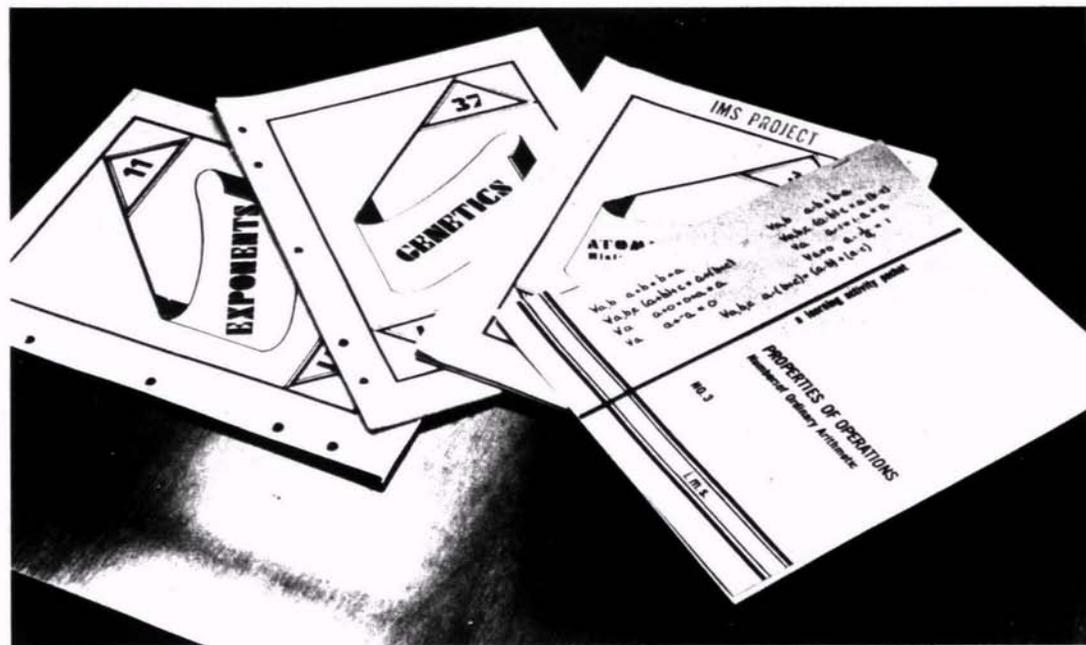
Each student receives a Learning Activity Package. The first thing he will do is read the rationale. This is a short introduction to the unit which explains why the con-

tent of the LAP is important to him. It also makes evident the continuity between LAPs and the need to progress from one to the other in an orderly fashion. All students are required to read the rationale.

A list of the behavioral objectives for the entire unit follows the rationale. By reading the objectives the student gets a clear verbal picture of what he is expected to accomplish.

After reading the objectives the student takes the pretest. This test is keyed to the behavioral objectives. Upon completing the pretest, the student has a conference with the teacher to determine a suitable program of instruction. The teacher advises on the possibility of exempting certain objectives and assists the student in the selection of texts, audio-visual aids, and other materials that the student will use to accomplish the goals.

He is now ready to go through the program of instruction. Working independently, or at times in a small group, he will do any combination of the following activities: read, view films, solve problems, attend a lecture, go on a field trip, write a research report,



Several Learning Activity Packages have been prepared.

Photos courtesy of the author



A pupil reads the behavioral objectives.

study transparencies, listen to audio tapes, perform experiments, etc., as detailed in the program of instruction. If at any time the student needs help or advice, the teacher is available for consultation.

When the student feels that he has successfully completed the program of instruction, he takes the post-test. This test is also keyed to the objectives so that the student can determine whether he has in fact mastered the objectives or has need to recycle certain ones.

If, on the basis of post-test results and teacher consultation, it is determined that the student has successfully completed the LAP, he is permitted to take the unit test to establish a grade and receive credit for the unit.

### **Alternate Ways To Use a LAP**

A school need not adopt a totally individualized instructional program in order to use the learning packages. The packages may be used in many different ways, a few of which are listed below:

1. In an independent study program involving only a portion of the school population

2. As an alternate means of instruction, to be used periodically in conjunction with the conventional system

3. As a mechanism for encouraging and implementing programs of study in subject areas not contained within the existing curriculum

4. To provide in-depth studies for students of higher ability

5. To provide remedial activities for students experiencing difficulty, either in the subject area or with prerequisites necessary to success in the subject area.

### **Applicability to All Schools**

At first, the staff was writing the program of instruction phase for all the LAPs. When the LAPs were used by several schools in Broward County, Florida, and at Valhalla, New York, difficulties arose. The major roadblocks to success were the following:

1. Some of the schools did not have the prescribed texts or audio-visual materials.

2. In many cases teachers who had developed some of their own laboratory experiments, worksheets, etc., objected to not being able to incorporate these into the program of instruction.

3. Some of the texts used in the LAP were not on the list of state-adopted books or they were disliked by the teachers.

4. Even minor revisions to the scope and sequence were not possible due to the rigidity of the program of instruction.

5. Some schools lacked the physical facilities or resources to carry out the program of instruction.

On the positive side, most teachers thought the format was good and that the scope and sequence were compatible with what they had been doing. The performance objectives were clear and concise and the diagnostic pretest and post-test proved very valuable to both teachers and students.

One of the problems encountered in the evaluations was anticipated by the staff but it was decided deliberately to invoke the problem to determine its extent and effect on the program. This problem was the lack of teacher and student orientation to the meth-

ods employed in individualized instruction. Notes were made on the procedures used by teachers in implementing the program, as well as the nature and number of questions asked by the students.

As a result of all this feedback, certain very pertinent things were learned that effected some major changes and revisions. The most prominent change in procedure was concerned with the program of instruction. Instead of the IMS staff's prescribing the program of instruction, it was decided to outline a model program and provide blank spaces in the LAPs for individual schools to design and write their own program of instruction.

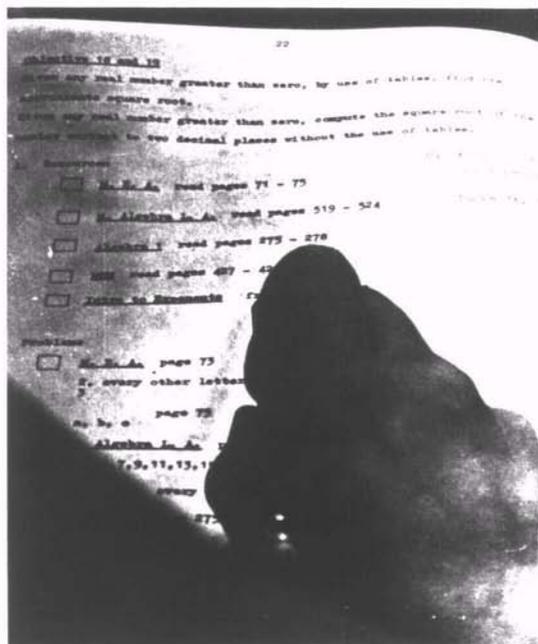
With this one simple expedient, most of the problems discussed earlier were eliminated. The LAPs could now be used by any school and could be adapted to fit almost any curriculum.

At present, different LAPs are being used employing this new idea and reevaluation of them is in progress. Indications are that the materials will prove very successful and will be employed by many more schools in the near future.

Accompanying the new LAPs is an orientation booklet for students explaining how the LAP is to be used, what the student's responsibilities are, and the educational advantages of individualized instruction. Also accompanying the LAPs is an orientation booklet for teachers. This booklet familiarizes the teacher with the basic philosophy and mechanical procedures necessary to assure a successful program. It also familiarizes the teacher with: (a) the format of the learning packages, (b) the purposes of the different parts, and (c) the role of the teacher in this unique method of instruction.

## How About Individualizing?

Through the efforts of Nova High School and projects such as IMS, it is now possible for any school to achieve a successful program of individualized instruction, even on a limited scale, if so desired. The author offers the following suggestions to any administrators or teachers contemplating the individualization of instruction:



A teacher prepares for instruction.

1. Carefully study the literature and project reports available on the subject.
2. Visit some schools now utilizing this method of learning.
3. Formulate a plan which will allow a slow but cautious and deliberate entrance into this endeavor.
4. Prepare for adequate in-service training of teachers.
5. Prepare for adequate orientation of students who will be participating.
6. It would probably be best to start with the higher ability students and work toward incorporating students at all ability levels as the project progresses.
7. Employ team teaching wherever possible—*after* full orientation of staff.
8. If economically feasible, make use of teacher aides to release the teacher from clerical chores.
9. Plan ahead for possible conversion of existing space to include resource centers, special media rooms, and small group facilities.
10. By all means avoid a "crash program"—orientation is *essential*. □

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