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ABSTRACT

This collection of workshop materials demonstrates how to develop learning modules through examples, illustrations, explanations, case studies, comparisons diagnosis, and prognosis. For the projected workshop, a module is defined as a modularized learning activity package composed of objectives, pretest, learning environments, and posttest. The author states that the term "modularized" stresses the relationship to school philosophy, end product, level objectives, and curriculum. It is also stated that the most important thing is to start with a clear idea of what is desired as an end product. This end product must be translated into certain basic things that must be learned by the end of the program. The workshop should equip teachers with the skill to produce modules composed of objectives, pretest, learning environments, and posttest. (RC)

SP

TITLE

MOD KIT

FOR MODULARIZED LEARNING ACTIVITY PACKAGES

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June 3, 1975

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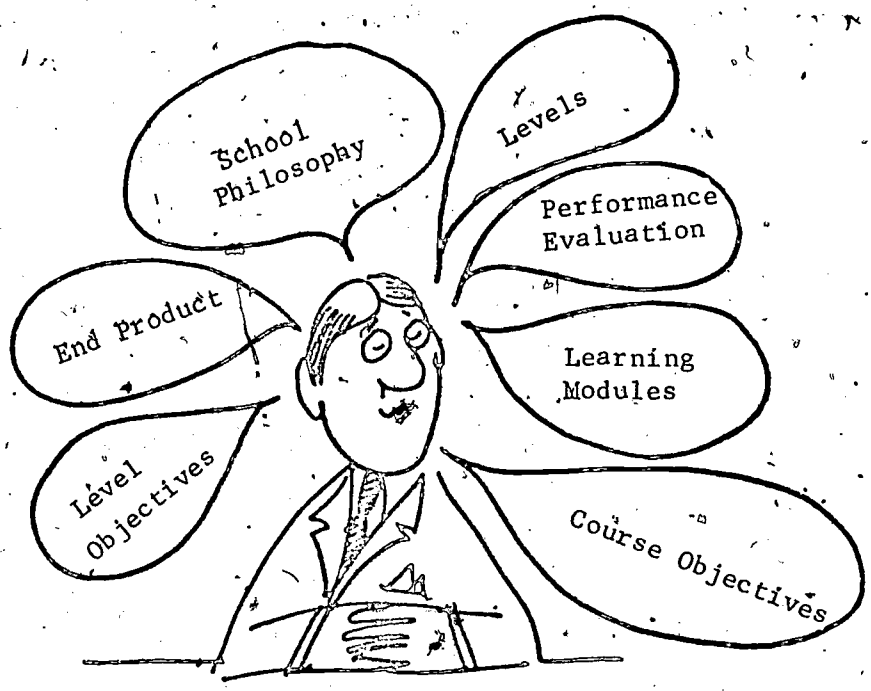


If this is all Greek to you,

OUR WORKSHOP will put it into plain English.

INTRODUCTION

This workshop is intended to demonstrate HOW TO DEVELOP MODULES. This will be done through several activities, e.g., good examples, illustrations, explanations, case studies, comparisons, diagnosis, and prognosis.

The illustrations that follow try to do the job via pictures, humor, analysis, brainstorming, and discussion.

A careful reading between the lines should equip the typical teacher with the skill to produce modules composed of objectives, pretest, learning environments, and posttest.

DEFINITION

A module is a section of course content that is designed for a specific purpose, for example, organizing work tasks in a logical sequence that might be job related, student-interest-centered, or structured for whatever purpose the author has in mind.

A common module design revolves around time wherein blocks of content are sequenced in uniform periods of time, such as "X" hours of "instruction" in a specific topic.

An example of this would be a common module design which revolves around time wherein blocks of content are sequenced in uniform sections of time, such as 30 hours of "instruction in hard-surface welding."

Mastery testing is a new word. Some people call it even a new form of jargon.

As commonly defined, mastery testing means evaluating in such a way as to determine if objectives have been met.

In this light, mastery testing is very close if not identical to criterion-referenced testing.

This can become a vicious circle because an objective is sometimes interpreted as simply another way of stating a criterion.

In this workshop, a module is defined as a "MODULARIZED LEARNING ACTIVITY PACKAGE composed of objectives, pretest, learning environments, and posttest." Modularized stresses the relationship to school philosophy, end product, level objectives, and curriculum.

FUNDAMENTAL CONCEPTS

The most important thing is to start with a clear idea of what is desired as an end product.

This end product must be translated into certain basic things that must be learned by the end of the program. These certain basic things would include knowledge, skills, and attitudes.

Each of the things that makes up the desired end product must be parceled out on various levels. In other words, complex tasks would come on the higher levels and would be prepared for by the basic fundamentals on earlier levels.

After the levels have been spelled out, the courses that supply the content are determined.

In order to master more basic material in a reduced time period, it is suggested that certain portions of the basic fundamentals be placed into independent study modules that can be utilized by students without the physical presence of a teacher.

Obviously, the use of modules is not to replace the teacher but to free the teacher for more time in class to assist learners in areas where special help is needed because of student deficiencies or because of the complexity of the material understudy.

In developing objectives, a few guidelines emerge:

A. Be as precise as possible

B. Don't over-simplify

C. Include every essential that must be there

An objective specifies the desired end product.

With this definition of objective in mind, mastery testing can be defined as measurement to determine if knowledge, performance, and attitude skills have progressed beyond the beginning level measured by a pretest.

Overview of a MODULARIZED Learning Activity Package (LAP)

OBJ	PRE	ENV	POST
Objectives Where are you going?	Pretest Where are you starting?	Environments Which paths are available to get there?	Posttest How can mastery and competency be documented?
LAP-OBJ-1 (Speak Out!)	LAP-PRE-1 (Short & Sweet)	LAP-ENV-1 (A 1-page ENV)	LAP-POST-1 (Principles & Philosophy)
LAP-OBJ-2 (Obj. > Activity) (Obj. ≠ Activity)	LAP-PRE-2 (A,B,C,) (Start with Cognitive and Knowledge)	LAP-ENV-2 (Open-Ended)	LAP-POST-2 (Destination)
LAP-OBJ-3 (OBJ-PRE-ENV-POST)	LAP-PRE-3 (Checklist)	LAP-ENV-3 (Flexible)	LAP-POST-3 (Simplicity)
LAP-OBJ-4 (Manager)	LAP-PRE-4 (GRID Analysis)	LAP-ENV-4 (Curr. > Instr.)	LAP-POST-4(A) (Format Codes) LAP-POST-4(B) (Format Example to Be Improved)
LAP-OBJ-5 (Curr. > Instr.)			

To speak out, clearly and fairly

Not only is it a constitutional right...it is a moral duty.

Stop wasting paper.

LAP-OBJ-2
Obj. > Activity
Obj. ≠ Activity

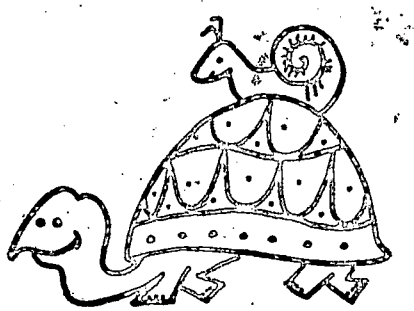
Figure I
Typology of Educational Goals

	GOAL CATEGORIES	EXAMPLES
ENDS	*Mission:* broadest, most comprehensive statement that can be made about the central purpose of the organization or program.	The mission of the Glenview school district is to insure that the current and future educational needs of the children, youth and adults of our community are met comprehensively, effectively and efficiently.
ENDS	*Continuing Objectives:* general statements which describe the conditions which will exist on a continuing basis when the organization or program is fulfilling its mission.	To insure that each student completing his elementary-secondary school program has a command of the learning skills.
ENDS	*Specific Objectives:* explicit statements which describe the results to be achieved, when, and by whom in order for a continuing objective to be accomplished.	By June 1, 1977, 90% of the elementary pupils will demonstrate competence in reading as evidenced by their scores on the state assessment test.
MEANS	*Strategies:* primary methods used to achieve a specific objective.	By Oct. 1, 1975, remedial reading clinics will be operating in the Farmbrook, Pinewood, and MacArthur elementary schools with an annual operating expense of $20,000 each.
MEANS	*Activities:* component parts of a strategy.	By July 1, 1975, three teachers specializing in remedial reading will be hired to staff the remedial reading clinics in the Farmbrook, Pinewood, and MacArthur elementary schools with annual salaries of $10,000 each.

If these are your problems,

this is your OPPORTUNITY:

1. Objectives are needed for learning activity packages.
2. Pretests are needed to provide diagnosis and motivation
3. Alternative learning environments are needed to provide choice
4. Mastery posttests are needed to document competence



If these are your problems, don't be slow in finding a solution!

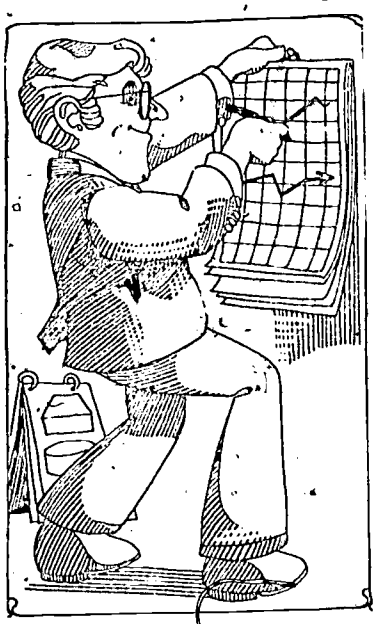
We can help you!!

The complex job of the materials manager as a responsible educational leader

It includes inventory controls . . .

What should the student end product look like?

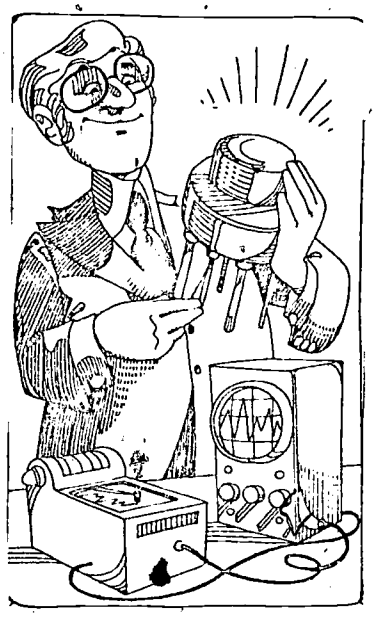
OBJ
Objectives



. forecasting and planning . . .

What does the beginning student look like?

PRE
Pretests



product design . . .

How many alternative learning paths do we have?

EVAL
Environments

capital spending decisions . . .

How do we document mastery competency?

POST
Posttests

Theme:

Curriculum > Instruction

Curriculum	Instruction
1. The program	1. The activities
2. Long range	2. Short range
3. Overall selection sequencing planning	3. Day-by-day choices timetables lesson plans
4. Desired end product in terms of the philosophy of education of the institution	4. Step-by-step process in terms of the psychology of teaching-learning of the individual teacher.
5. An organized and structured educational program	5. One or more of the elements used to achieve the organized and structured educational program desired.

If any of your students can't pass this simple reading test it's time to take ACTION

THE SECRET MESSAGE

One man saw the floating bottle. Then the others helped to get it out of the water. When they uncorked the bottle, they found a message inside. It said, "Lost at sea. I have ended up on Cali Island. Help! B. Gully."

"That is not true," the ship's captain said. "Lots of people throw bottles into the water with messages in them. And lots of people know about Bill Gully being missing."

"Wait!" Mike, a seaman, said. "This message is written in red. It looks like blood to me. If a person were trying to make a joke of this, I do not think that person would write with blood."

The ship's captain smiled. "No, I don't think so. Let the doctor study the message. If he says it is written in blood, we will sail for Cali Island. But do not be surprised if the blood turns out to be paint."

But that night, the doctor knew that it was blood. The ship sailed for Cali Island, and reached it after two days. Six men got off to look for Gully and a short time later they found him. He looked very bad.

The ship set out for home and the men took Gully to the hospital.

"I owe my life to you and your men," Gully said to the captain. "It must have been very hard to find me."

"Yes it was," the captain said. "But no one would have found you if you had not sent the message in the bottle."

"What message?" Gully asked.

Literal

1. *What did the men find in the water?*
2. *What was inside the bottle that the men found?*
3. *What was it that had been used to write the message?*
4. *Where did the seamen find Gully?*

Interpretive

1. *Why do you think the captain went to the island when he learned the message was written in blood?*
2. *How do you think Gully must have looked when the men found him? Why?*
3. *Do you think that Cali Island was in a warm part of the world? Why?*
4. *Do you think Gully sent the message? Why?*

LAP-PRE-2(A)
Start with Cognitive and Knowledge

TAKE THE PRETEST FIRST -- THEN GO ON

TO THE REST OF THE MODULE

Take this pretest first.
Read all the questions all the way through before answering any question.
Mark the best answer or answers to each question on the answer sheet found on the following page.
After all questions have been attempted, compare the answer marked with the answer key found on the page after the answer sheet.

1. Title:

The best title for this one-page module is:

A. Read the module before taking the test.
B. Look at the answer key before taking the test.
C. Take the posttest first, then take the pretest.
D. Read the pretest, then take the pretest, and then correct the pretest.

2. Main Idea:

The main idea of this one-page module is:

A. Pretesting is all you have to do.
B. Pretesting should come before reading the module.
C. Pretesting is a waste of time.
D. A one-page module is impossible.

3. Summary:

A one-page module is intended to summarize:

A. Targets, goals, and objectives.
B. Pretest, diagnostic assessment, and starting point.
C. Learning environments, learning activities, and alternative possibilities.
D. Mastery posttest and the final examination.
E. All of the above.

4. Key Words and Phrases:

Any module taking the format of a one-page pretest is most likely measuring:

A. Data, knowledge, and the cognitive domain.
B. Skills, things, procedures, performance, and the psychomotor domain.
C. People, attitudes, values, feelings, emotions, and the affective domain.
D. All of the above.

5. Subordinate Ideas:

On a typical one-page module -- like this one, for example, the typical teacher answers:

A. All of the questions correctly.
B. All of the questions incorrectly.
C. One or two of the questions correctly.
D. One or two of the questions incorrectly.

6. Practical Application:

This kind of basic introduction makes it clear that a one page pretest produces:

A. A general overview.
B. Some measure of cognitive awareness.
C. An identification of the few individuals who know nothing about the subject matter and who are unable to guess.
D. A complete listing of what the person can do.

ANSWER SHEET

1. A B C D

2. A B C D

3. A B C D E

4. A B C D

5. A B C D

6. A B C D

ANSWER KEY

1. A B C (D)

2. A (B) C D

3. A B C D (E)

4. (A) B C D

5. (A) B C D

6. (A) (B) (C) D

A Few Criteria For Developing Objectives

VERB (PERFORMANCE) (OBJ)

A. Simple <Short
B. Complete <Essential: KPA
C. Clear <Unambiguous
D. Action <Photographable
E. Learner-Centered <Teacher-less
F.
G.
H.

CRITERIA (EXTENT) (PRE) (POST)

A. Accuracy <Avoid typical errors
B. Discrimination <Fine tune
C. Judgment <Decide
D. Coherency <Be <Consistent, Appropriate
E. Speed <Time
F. Humane Performance <Humanize
G. Economy of Effort <Engineer Energy
H.
I.
J.
K.

CONDITIONS (CIRCUMSTANCES) (ENV)

A. Tools <Pencil, Calculator, Slide Rule
B. Materials <Book, Chart, Graph, Grid, Film
C. Equipment <Machine
D. Situations <Clinic, Portable, Via Radio, Via CRT
E. Test Type <(paper, hands on, simulated, and so on)
F.
G.
H.

GRID ANALYSIS

(An "Upside Down" Structure)

Semester / Level	Semester 1 (Start) →	Semester 2 →	Semester 3 →	Semester 4 (Finish)	Comments Con Pro
Level IV (Highest) GRADUATE Here	Care for the client: • all alone • on one's own • with minimum supervision • in a wide variety of cases				Trial-and-error learning? (Find out if they like it!)
Level III		Work in a clinic: • as part of a team • under constant supervision			Why move from independence to constant supervision? (Choose a specialty after an overview!)
Level II			Complete lab workbook based upon 2 or 3 random case studies • multiple choice responses • basic theories only • no clinical contact		Why avoid the clinic? (Tie together all that has been learned by doing!)
Level I (Beginning) START Here				Memorize the major categories of symptoms Read chapters 1,2,3, and 4 Pass multiple choice exam	Mickey Mouse during Sem IV? (Good prep for the State exam!)
	Question 1: Do level and semester follow in sequence?	Question 2: Are there unexplainable "GAPS"?	Question 3: Are there unnecessary (but nice to know) foundation stones cluttering up the program?	Question 4: Are all school objectives achieved by the final level?	Question 5: Are the levels and the semesters moving in the same direction? (See ARROWS!)

A One Page Module Overview (Open-Ended)

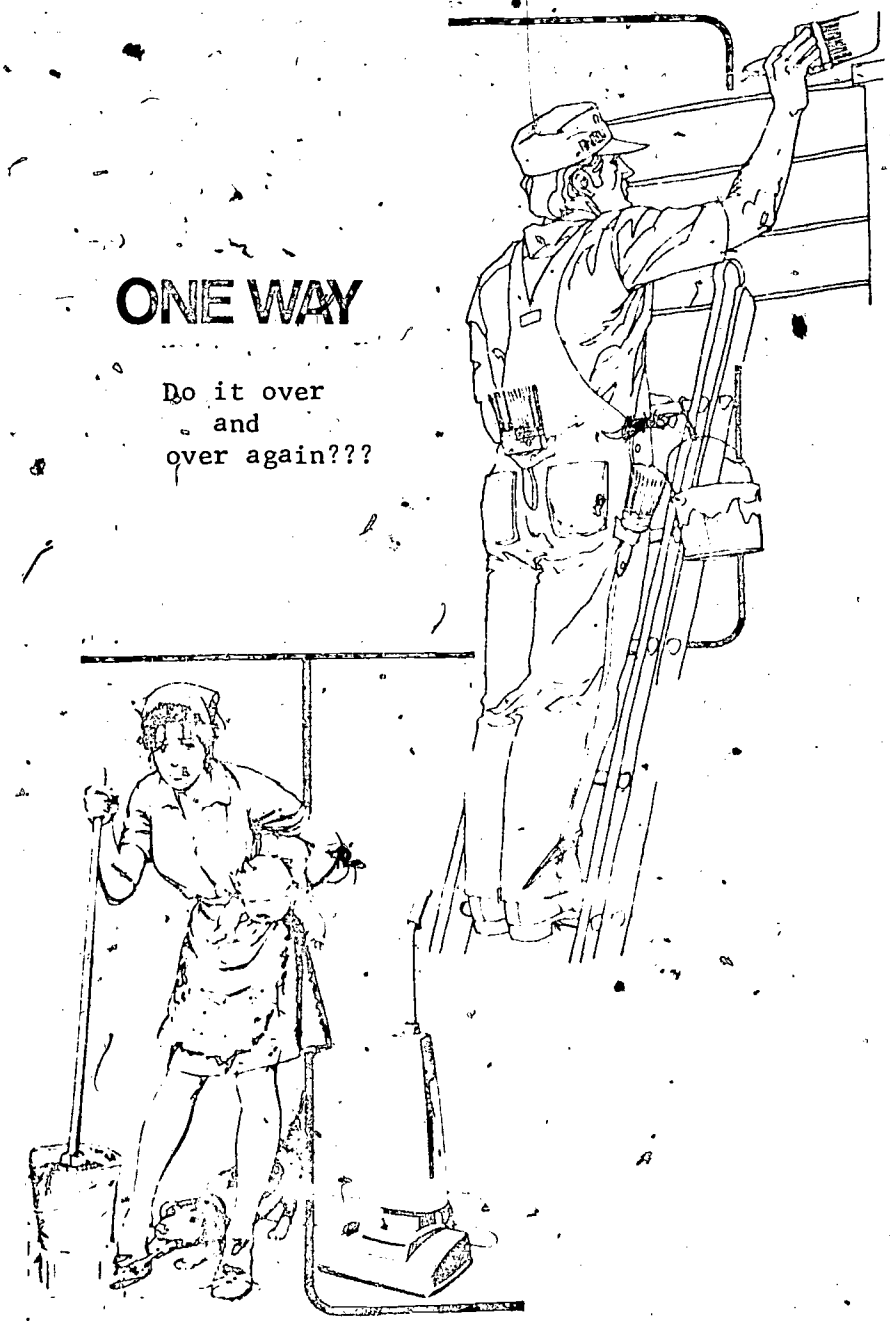
A. Learner Developed (See: Learner Objectives and Level Objectives)
B. Student-Paced (See: Learner Activities and Completion Date)
C. With Minimum Teacher Paperwork (See: Satisfactory and Unsatisfactory)
D. With Maximum Teacher Encouragement and Standards (See: OK and Final OK)

Satisfactory (OK)	Unsatisfactory (X)	Completion Date	Learner Activities
			1.
			2.
			3.
			4.
			5.
			6.
			7.
			8.
			9.
			10.
			11.
			12.
			13.
			14.
			15.
			16.
			17.
			18.
			19.
			20.
			21.
			22.

Learner Objectives
1.
2.
3.
4.
5.
6.
7.
Level Objectives
1.
2.
3.

* Teacher Final OK

Two ways to solve problems



ONE WAY

Do it over
and
over again???

OUR WAY

Keep score of
USE-ability!!!

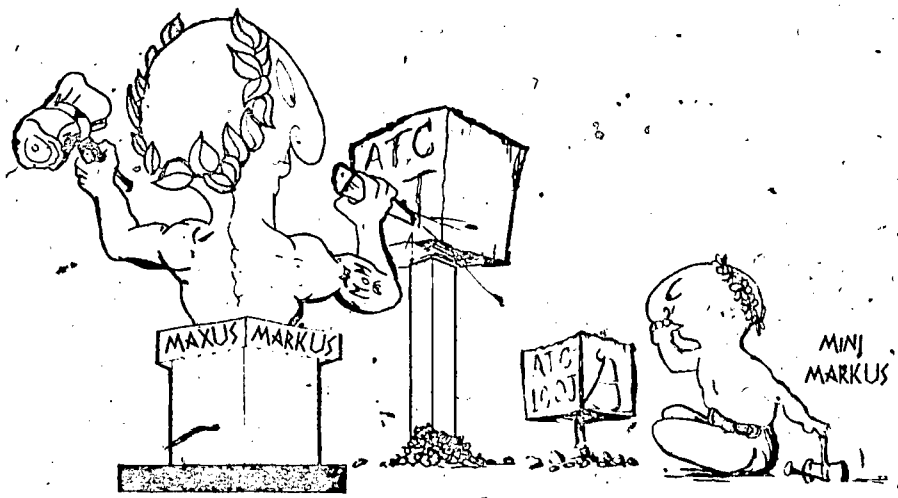
INNOVATIONS

should N O T

be etched in stone so as

to last

F O R E V E R



Avoid also:
- too much paper
- too much theory
- too much cost

Stress: CLARITY
SIMPLICITY
FLEXIBILITY

CURRICULUM

Stress on curriculum is a good remedy for the situation wherein educators confuse curriculum and instruction.

Curriculum refers to an overall selection, sequencing, and planning of the educational process. A curriculum is an educational program whether formally or informally organized. Thus, a curriculum objective will spell out the desired end product in terms of the philosophy of education of the particular institution.

On the other hand, instruction is different from curriculum. Instruction refers to the day-by-day activities that will be used to achieve the desired curriculum end product. For example, going on a field trip or visiting a museum could well be an instructional activity, perhaps even an instructional objective, but these two activities are so specific and open to substitution that they are more properly called instruction rather than curriculum.

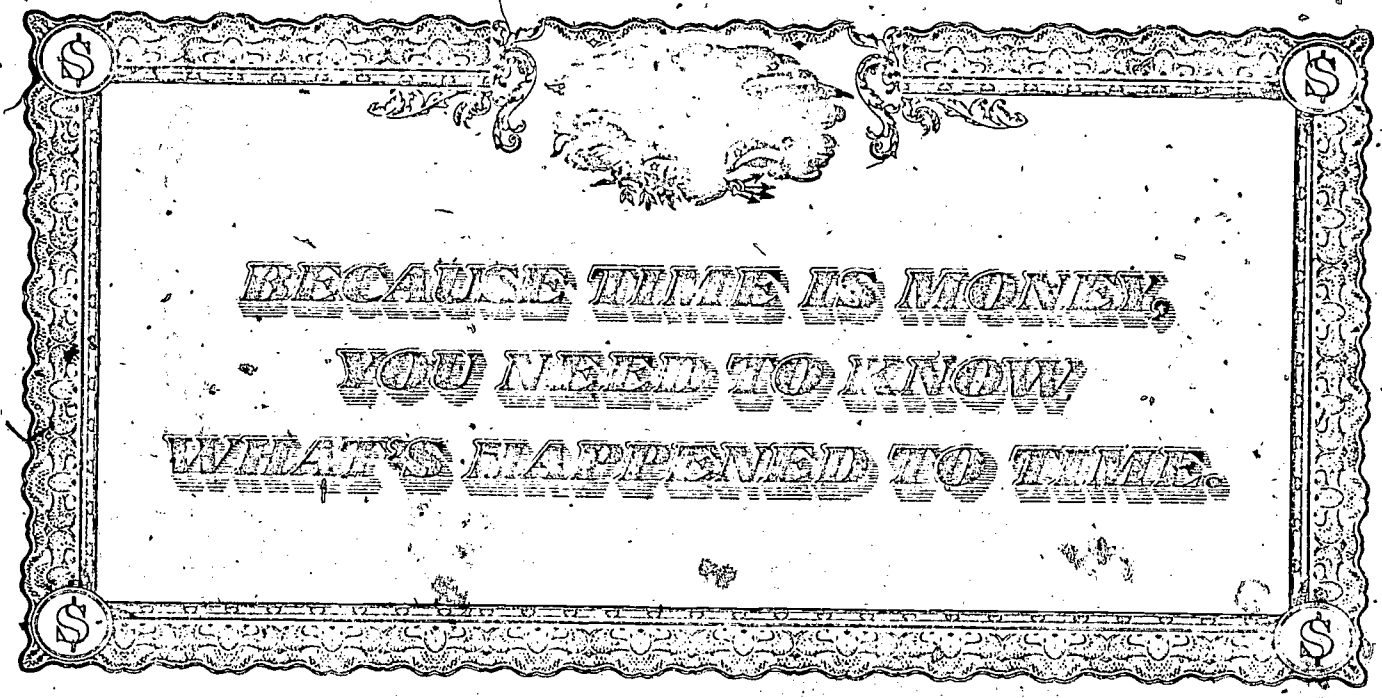
Thus, a curriculum is an organized educational program. Instruction refers to one or more of the elements used to achieve this structured and organized educational program.

Using the words research, evaluation, and curriculum can sometimes give an unnecessary air of mystery to processes that go on in everyday life as well as in scholarly circles. Practical people don't make such an error.

A review of this document points out the following underlying assumption:

IF RESEARCH IS TO CHANGE EVALUATION AND CURRICULUM, RESEARCH MUST BEGIN BY CHANGING THE ATTITUDES AND BEHAVIOR OF A LARGE NUMBER OF INDIVIDUAL EDUCATORS.

Four tools are available:
OBJ - Objectives
PRE - Pretest
ENV. - Environment
POST - Posttest



In order to balance the demands of professional excellence with the limited time avaliable, which of the following principles should guide anyone trying to develop modules?

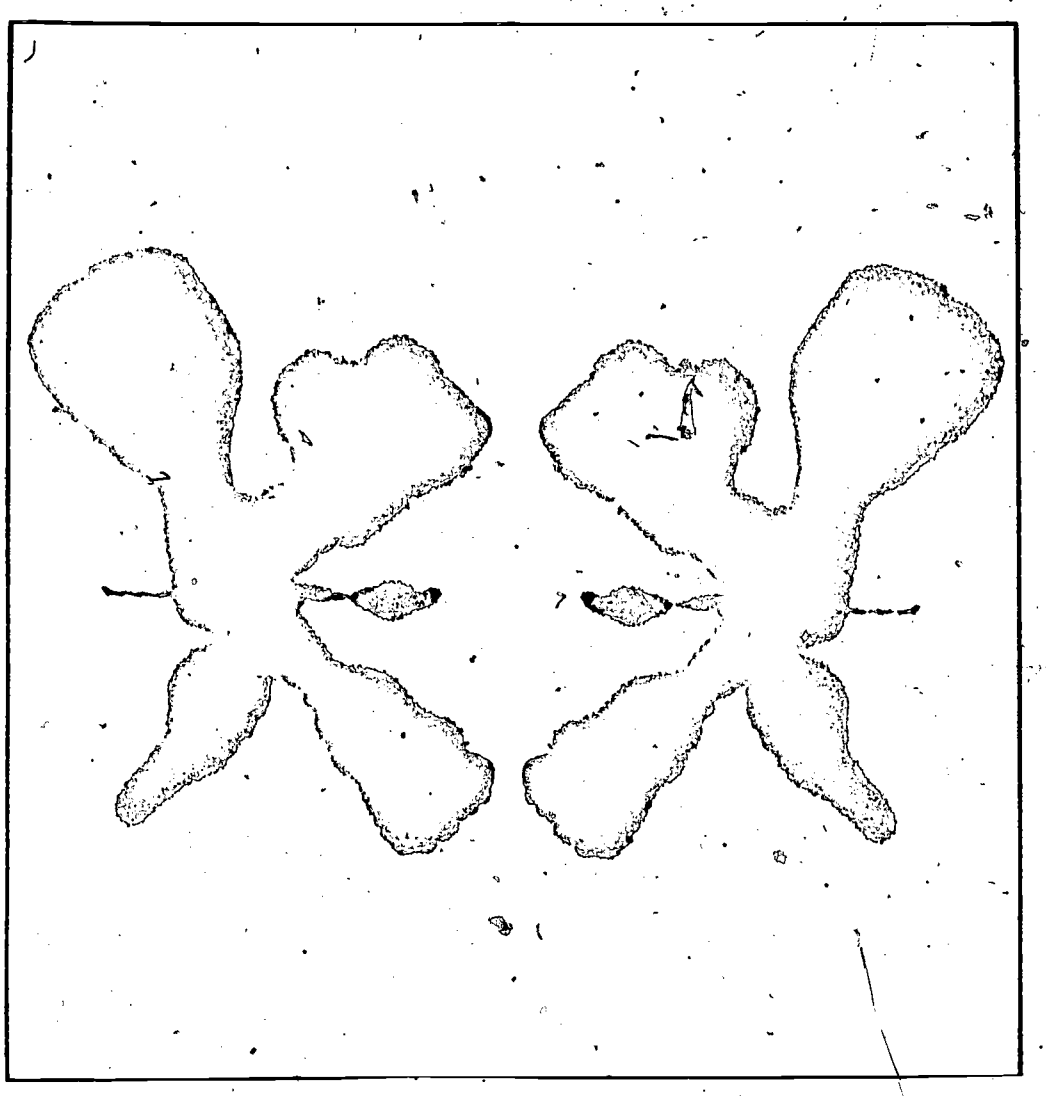
A. Take as much time as necessary even if it takes six months to develop one module

B. Start with areas easy to develop and see how well the module format works

C. Start with areas or topics where plenty of material already exists but merely need organization and integration

D. Set up an arbitrary time limit, for example, one module for every five hours of work, and never vary the rule no matter how complicated the module might be

E. Develop most of your modules in one-page formats that tie together existing resources



Why do some objectives for modules resemble the above Rorschach-type drawing?

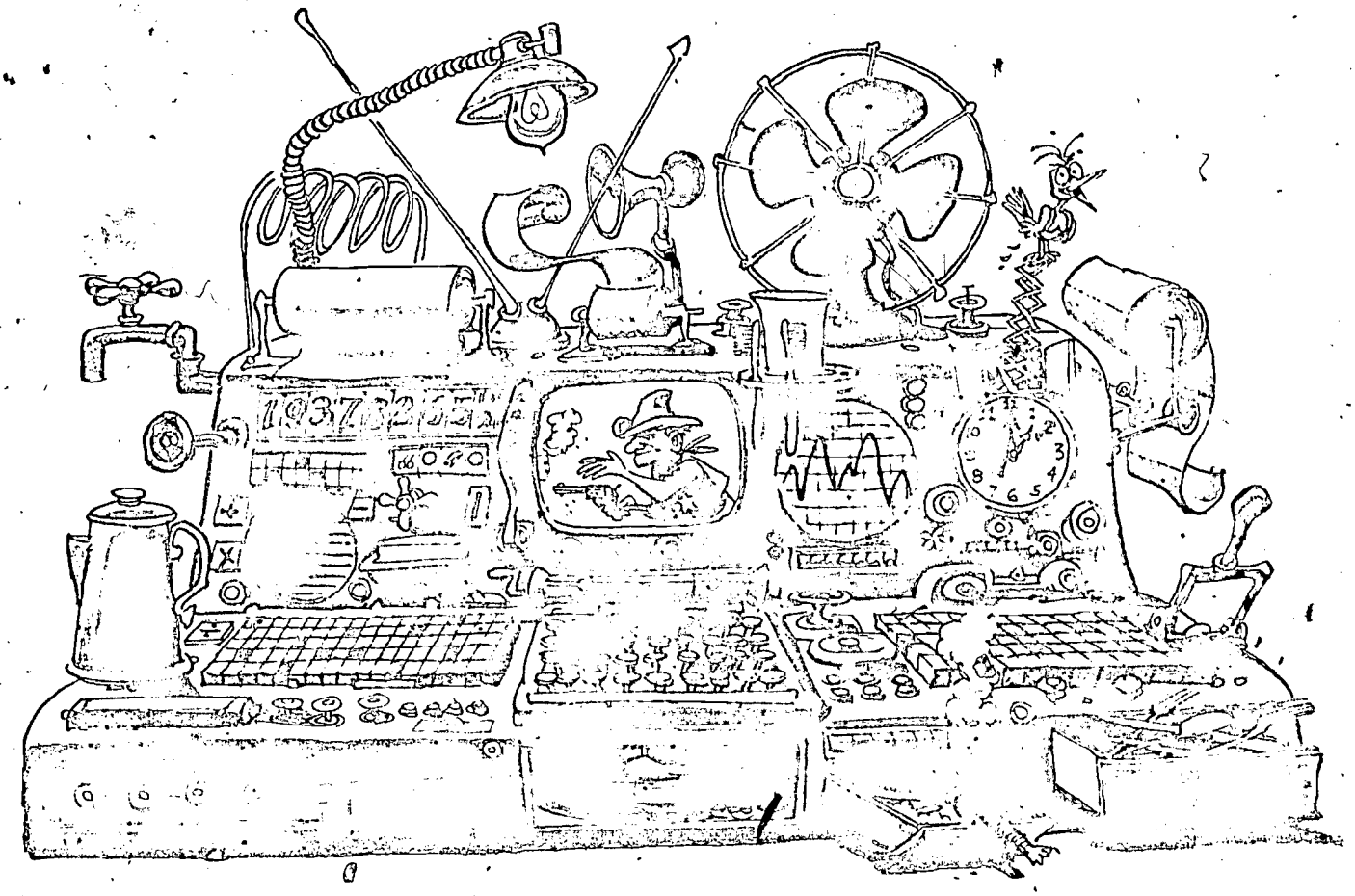
A. The objectives are kept simple, visualizable, and presented in the form of art work

B. Sometimes, not even the teacher is certain of exactly what is expected at the end of the module

C. The course objectives are set much higher than the level objectives

D. The module was probably written at least in part before the objectives were specified

E. An objective which is perfectly clear to the teacher is presented in a way that is ambiguous -- to say the least -- to the student



Whenever any module developed by a teacher resembles the above multi-purpose, multi-level, multi-competency, multi-objective type of learning environment, what is the problem?

A. Some modules are much too specific to be beneficial to individual learners

B. Some modules become so general that they resemble a pile of bricks rather than a well structured edifice

C. Choice is good, but unstructured choice left completely open to chance is likely to develop into chaos

D. Teachers should think first about the quality of learning environments rather than about the quantity of learning environments

E. The above type module always succeeds because it does indeed have something for everyone

DIGIT CODES

THE FIRST DIGIT identifies conditions, performances, and criteria.

1 in the first digit identifies CONDITIONS
2 in the first digit identifies PERFORMANCES
3 in the first digit identifies CRITERIA

THE SECOND DIGIT identifies the correlation to the performance, sequence of presentation, competency level upward, or a combination of the preceding.

Thus, every condition, performance, or criterion with one in the second digit refers to the first verb.

Similarly, a two in the second digit refers to the second verb.

The third digit is used when more than one condition or criteria is correlated to a specific verb.

LAP-POST-4(B)
Format Example to Be Improved

OPERATING ROOM
(Level One)

CONDITIONS	PERFORMANCE	CRITERIA
1.11 Operating room 1.12 OR equipment	2.10 Observe the operating room environment	3.10 Physical nature 3.11 Tile (cleaned frequently) 3.12 Lighting (shadow-free) 3.13 Ventilation (pathogenic bacteria free) 3.14 Temperature control (comfort, heat loss). 3.15 Moisture control (prevent membrane drying, static electricity) 3.16 Cleanliness (asepsis)
1.21 Preparation to enter sterile envrionment	2.20 Preserve the sterile envrionment by acceptable attire	3.21 Scrubbing procedures 3.22 Gowning 3.23 Gloving
1.31 Preparation for a patient 1.32 OR team	2.30 Observe the fundamental principles of a safe environment	3.30 Safety: 3.31 Technique of asepsis by participating personnel (MD, RN, auxillary personnel) 3.32 Translate factors in 2.10 into skill performance by operating team 3.33 Sterile drapes 3.34 Accurate instrument - sponge counts 3.35 Adequate supply of all a) Working instruments in WORKING ORDER b) Expendable materials (sutures and sponges) 3.36 Non-conductive clothing (e.g., no wool or nylon)
1.41 Surgical team 1.42 Team functioning	2.40 Identify and observe the roles of the surgical team	3.40 Importance of responsibility in each surgical team member 3.41 Surgeon 3.42 Assistant surgeon 3.43 Anesthetist 3.44 Scrub nurse 3.45 Circulating nurse

CRITICAL EVALUATION

Thank you for the time you took to read this manuscript entitled

MOD KIT FOR MODULARIZED LEARNING ACTIVITY PACKAGES

Would you PLEASE take a few minutes to summarize your reactions by responding to the following short answer and multiple choice rating questions? Circle all that apply.

OVERALL IMPRESSION :

A. Well done
B. Above average
C. Average
D. Below average
E. Unacceptable

IMPORTANCE OF TOPIC :

A. A relevant issue
B. Important
C. Highly technical
D. Futuristic
E. Out-of-date

AUTHOR'S POINT OF VIEW :

A. On target for our readers
B. Would appeal more to readers of _____
C. Not acceptable

GRAMMAR AND FORMAT (TYPING)

A. Acceptable for our publication
B. Unacceptable
C. Needs improvement in _____

INTRODUCTION (BEGINNING)

A. Well done
B. Average
C. Below average

MAIN CONTENT

A. Well done
B. Above average
C. Average
D. Below average
E. Unacceptable because _____

CONCLUSION

A. Well done
B. Above average
C. Average
D. Below average
E. Unacceptable because _____

RECOMMENDATIONS FROM US

A. We will print it
B. Revise it and return it to us for reconsideration
C. Try submitting it to _____
D. Revise it and submit it to _____
E. Reorganize it and start over again
F. Forget it; it's a lost cause