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Selected topics on individualized instruction

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Selected topics on individualized instruction

Abstract

The formal development of individualized instructional programs in America began as a reaction against the age-graded lock-step system in which all students were constrained to study the same materials, in the same way, for the same length of time. Arguments for breaking down uniformity of instruction gained support with the appearance of instruments for measuring human abilities. It became clear that students differ not only in intelligence but in creativity. It also became clear that great differences between competence and performance are possible, and that inequalities in intellect, physical ability and social behavior, great in childhood, increase as students move through the grades. In the 1960s, pressure for change came from a variety of resources. Psychologists were beginning to characterize students as active learners, capable of creating and fulfilling their own learning needs. Criticisms of perceived quality of American schools also created pressure for changes in social organization and instruction.

SELECTED TOPICS ON INDIVIDUALIZED INSTRUCTION

A Research Paper

Presented to

The Department of School Administration

and Personnel Services

University of Northern Iowa

In Partial Fulfillment

of the Requirements for the Degree

Master of Arts

Master of Arts in Education

by

Wilmer Purvis Peeler

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CHAPTER I

INTRODUCTION

The formal development of individualized instructional programs in America began as a reaction against the age-graded lock-step system in which all students were constrained to study the same materials, in the same way, for the same length of time. Arguments for breaking down uniformity of instruction gained support with the appearance of instruments for measuring human abilities. It became clear that students differ not only in intelligence but in creativity. It also became clear that great differences between competence and performance are possible, and that inequalities in intellect, physical ability and social behavior, great in childhood, increase as students move through the grades.

In the 1960's, pressure for change came from a variety of resources. Psychologists were beginning to characterize students as active learners, capable of creating and fulfilling their own learning needs. Criticisms of perceived quality of American schools also created pressure for changes in social organization and instruction.

Many of the proposals for changing the traditional system are referred to as individualized programs. Such programs constitute a widely diversified family. They are based on different interpretations of individualization, different technologies and different expertise. It should be noted that individualization is more difficult with some students and some topics than with others. With regard to students, for example, individualization is more difficult with primary grade students, students who read poorly, and those who do not follow

directions well. With regard to topics, individualization is more difficult in group music, team games, interaction exercises, group discussions and debate. Even under difficult conditions it can be done, especially if the teacher has help from aides, parents or tutors.

Individualization is easier or more desirable in knowledge and skill acquisition of basic subjects. Although individualization enhances some parts of the curriculum more than others, any part can be individualized to the extent that it provides exploratory experiences and individual responses.

Importance of the Study

The basic premise is that children of the same age have different cognitive and affective characteristics. Therefore, they cannot be expected to learn the same body of material, in the same length of time, and in the same way. Through individualized instruction teachers can adapt their instructional procedures to fit the students' individual needs and characteristics.

Another premise that must be adopted is that the child should be accountable for his or her learning. A teacher must be responsible for correctly diagnosing each child's strengths and weaknesses and prescribing what and how the student should learn. Knowledge of individualized instruction methodologies affords the teacher the opportunity to serve as a learning facilitator and prescriber of resources in the learning process. The processes place more responsibility for learning on the student and make better use of his or her individual interests, goals and strengths.

The methods of individualizing instruction offered in this study are but a few of many. These methods are the less expensive

and offer the educators developed concepts for varying their instructional procedures.

Statement of the Problem

The main current of educational practice has continued in the traditional channels of the graded system, which means it can become the victim of neglect of traditional practices. Educational issues and problems that are unsolved can set off an accelerated decline. To avoid this decline, educators must change their instructional procedures to meet the needs of an ever changing population pattern. Educators must be capable of utilizing new technological developments for educational purposes. Finally, the system must be able to bring learners in contact with a wide variety of realistic learning experiences.

Assumptions

The following assumptions must be made about the future of public education and the demands of society.

1. Educators must emphasize the development of learning skills.
2. Education must help students become progressively involved in the learning process.
3. Educators must accommodate themselves to changes in instructional procedures.
4. Education must provide the means by which students can determine a purpose in their lives.
5. Education is moving forward toward a greater degree of freedom of choice for students, and personal and individualized instruction.
6. Multimedia will replace the traditional monopoly of the textbook and a twelve-month year and personalized program will prevail.

Limitations of the Study

This study is limited in scope because of the small sample of topics. The sample consists of selected areas on individualized instruction that can be utilized by teachers. In addition, the study is limited because it does not concern itself with cost of implementation.

Definition of Terms

1. Individualized Instruction--adapting instructional procedures to fit students' individual needs and characteristics.
2. Learning Packages--a self-instructional unit designed to meet the individual learning needs and characteristics of the student.
3. Study Guides--a teaching aid written by the teacher to be utilized by the student for purposes of enhancing comprehension of prose material.
4. Quest--a related learning activity which might be of interest to the student.

CHAPTER II

REVIEW OF THE LITERATURE

The learning package offers a design for an individualized management system. Learning packages can be sequenced in a logical order for continuous progress learning, or particular packages can be identified to help the student with remedial work. What the learning package offers is a system of individualized instruction that does not depend on mass verbal presentation but can be designed and paced for each child according to his or her individual needs. The learning package, because of its self-instructional nature, can be administered in the classroom on an individualized prescription basis. Theoretically, in a classroom of 30 students, work on as many as 30 different packages could be underway at the same time. In practice, however, it can be expected that the students will cluster around fewer packages.

There are four basic approaches that can be used for package selection that fit into the general construct of individualized instruction. A well designed package system will consist of multiple packages covering a range of skills, ideas, and concepts appropriate for a particular group of students. Likewise, a well designed learning package should have within it multiple resources and activities, each resource being directed toward the achievement of the objective stated in the package. These resources and activities should be diverse in nature, including reading, viewing, doing and listening tasks, as well as covering an appropriate range of learning levels.

Jack Edling¹ illustrates the options available as to how the package prescription system might be administered.

Option A--The teacher retains all decision control over the student by prescribing both the package to be studied and the resources within the package to be completed.

Option B--The teacher prescribes to the student a particular learning package but then allows the student freedom in choosing the resources most appealing. The student completes only those resources to adequately prepare for the behavioral performance required.

Option C--The teacher allows the student to select a package of his or her own choosing, but the teacher assigns the resources for the student.

Option D--The student not only selects his or her own package from those available, but also has freedom to choose his resources within the package.

Practical application in the classroom probably will entail the use of all four options at some time. Their use will depend on the nature of the package, the adequacy of resources and the independence of the particular child. However, the greater involvement on the part of the student often results in greater student commitment.

Most learning packages consist of seven basic parts: the pre-test, the concepts, performance goals, the activities, self-test, mastery test, and enrichment opportunities.²

¹Jack V. Edling, Individualized Instruction: A Manual for Administrators, Oregon: Continuing Education Publication, 1970, p. 30.

²Patricia S. Ward and Craig E. William, Learning Packets: New Approach to Individualized Instruction, West Nyack, N.Y.: Parker Publishing Co., 1976, p. 26.

Pretest is defined as an assessment of the student's prior knowledge of the topic to be studied. This is a diagnostic step which enables the instructor to point out both the strengths and weaknesses of the student. The pretest alleviates repetition and helps prevent the student from becoming bored.

The concept is defined as an overall view of what will be studied. It helps the student to focus in on the big picture, the broad outline of what they will be studying.

The performance goals are what the student should be able to do when he or she has completed the packet. They tell the students what will be on the test and give more responsibility to the students.

The activities are what the students will have to do in order to master the materials. The activities in a packet afford the student a choice, both of method and of track. All activities are designed to help the students reach the performance goals. Students move through the activities at their own pace. Ordinarily the instructor will not make an assignment in terms of work to be done by a certain time.

The purpose of the self test is to determine whether the student is ready for the final test. If the student is not ready, they receive additional help before going on to the mastery test which assesses whether the student has reached the performance goals. Unlike conventional tests, students will not have to play guessing games with the instructor about the contents of the test. Students are not allowed to fail. They must continue working until they finally achieve success by passing the mastery test. Finally, those students who passed the mastery test are given enrichment opportunities to explore areas of

interest. These activities permit students to apply the knowledge they have mastered in new and divergent ways.

The experience gained from the use of learning packets and other programs indicates that individualized instruction has advantages for both the teacher and the student not found in other kinds of teaching. The following are advantages for the students.³

1. It enables the student to proceed at his/her own pace through the study of each subject.
2. There is a one-to-one relationship between the student and the subject being studied.
3. It permits the student to get an immediate response to his/her answers; immediate satisfaction is gained.
4. It enables the student to understand better the structure of the subject being studied.
5. It enables the student to study in greater depth those aspects of the subject in which the diagnostic tests indicate a weakness.
6. Each student can proceed in a subject as far as his/her ability will permit.

The following are advantages that the teacher will experience.

1. It frees the teacher from teaching many of the routine basic skills of a subject.
2. It enables the teacher to meet more accurately the instructional needs of the students.

³Howard E. Blake and Ann W. McPherson, "Individualized Instruction: Where Are We," Educational Technology, 9 (December 1969), pp. 63-65.

3. It provides the teacher with a diagnostic device.

4. It allows the teacher to spend more time with students who need extra help.

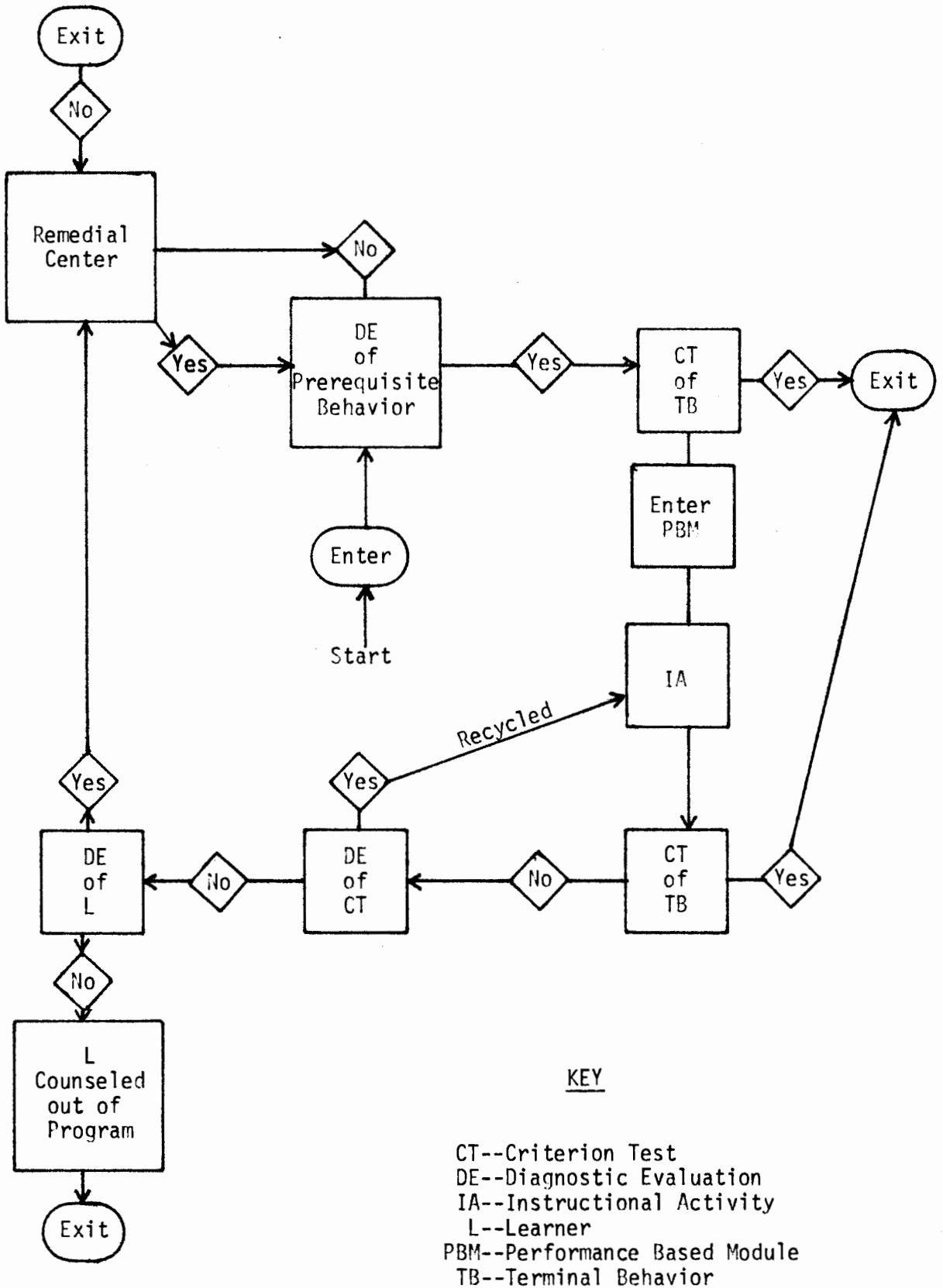
5. It enables the teacher to bring a structured, carefully thought out program to the students.

6. It enables the teacher to serve not only as a lecturer but also as a guide.

To maximize the individualization that learning packages can provide for students, other considerations must be made to insure success. Teachers and administrators who are beginning a program utilizing learning packages are usually concerned with scheduling. A learning package program can operate quite successfully with a seven period or a twenty-one module day.⁴ A schedule that is less restricting on the students' time would be an advantage but not an absolute requirement. Another consideration should be the activities. The more diversified the learning activities the more opportunities for the students to operate in whatever learning style best suits their needs. Finally, the format and organization of the learning package has considerable effect on its success. Table 1 reflects a typical organizational flow chart.⁵ Whatever format and organizational structure is used within a school, it should be consistent.

⁴Roger Tucks, "Classroom Strategies for Success with Packages," Journal of Secondary Education, 46 (May 1971), pp. 210-216.

⁵Richard W. Burns, "Methods for Individualizing Instruction," Educational Technology, 11 (June 1971), pp. 29-32.



KEY

- CT--Criterion Test
- DE--Diagnostic Evaluation
- IA--Instructional Activity
- L--Learner
- PBM--Performance Based Module
- TB--Terminal Behavior

Establishing and maintaining student behavior is essential to the classroom teacher. Lucille W. Smith and Phillip G. Kapfer have identified three classes of behavior to consider.⁶ The first is referred to as "facilitative behavior." This type of behavior is formed through the use of positive reinforcement techniques by the teacher. The teacher's purpose in using reinforcement techniques is to promote habits of conforming to essential operating rules. The second class of behavior is referred to as "disruptive behavior." When students are shifted from existing learning modes to the use of learning packages, an atmosphere of uncertainty often exists. Disruptive behaviors can be kept at a minimum if students know exactly what is expected of them and are not expected to acquire new behavioral competencies at an unrealistic rate. If disruptive behavior is continuous, the teacher should look at weaknesses in the operation of positive reinforcements. The third type of behavior is directly related to essential operating rules and is referred to as "self-motivated learning behavior." The student must perceive some intrinsic value to learning. Teachers can promote self motivated learning in at least two ways. First, they can make sure that the learning activities include experiences with concrete, real things that are available in the school or community. Secondly, the contents of the learning packages can be related to situations in which the content to be learned can be applied immediately. This type of strategies will result in satisfaction of the student wants.

⁶Lucille W. Smith and Phillip G. Kapfer, "Classroom Management of Learning Package Programs," Learning Packages in American Education, New Jersey: Educational Technology Publication, 1972, p. 220.

Because individualized instruction, by definition, considers individual differences in learning styles and abilities, a wide diversity of media must be available. These new requirements for media will force schools to shift from traditional and expensive group oriented media to a less expensive and more diversified media. Table 2 lists the characteristics of the most widely used media in terms of effectiveness in an individualized instruction environment.⁷ The potentials of the new technology for the individualization of instruction are realized only out of an adequate perception of what is really meant by new technology. All forms of media are capable of helping learners to comprehend concepts, to acquire skills, and to shape feeling. Most educators would associate such things as television, video tape recorders, computers and cassette tapes as typical of the new technology.

The potential of technology for the individualization of instruction is realizable only out of an adequate perception of what is really meant by technology and upon a system of instruction which consciously organizes to determine the uniqueness of all means of media instruction for different kinds of learners and for different kinds of instructional purposes. All forms of media are capable of helping learners to comprehend concepts to acquire skills and to shape feelings. The potentials are even greater today because of some of the new instructional devices that can tirelessly present instruction on demand, can maintain records of student performance, and can print out each learner's progress.

⁷James E. Duane, "Media and Individualized Instruction," Individualized Instruction-Programs and Materials, New Jersey: Educational Technology Publication, 1973, p. 221.

Table 2
Generalized Media Characteristics

Commercially Available	Lg	Med	Sm	Lg	Sm	Sm	Sm	Sm	Sm
Audio	No	Yes/ No	Yes/ No	Yes	No	No	No	Yes	Yes
Motion	No	No	No	Yes	Yes	Yes	No	No	Yes
Visual	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Group Size	Lg/ Sm Ind	Lg/ Sm Ind	Lg/ Sm Ind	Lg	Sm/ Ind	Sm/ Ind	Lg	Lg/ Sm Ind	Lg/ Sm
Sequencing	Flex	Fix	Flex	Fix	Fix	Fix	Flex	Fix	Fix
Pacing	Flex	Flex	Fix	Fix	Fix	Fix	Flex	Fix	Fix
Cost	Lg to Med	Lo	Lo	Hi	Med	Med	Lo	Lo to Med	Hi
	Printed Material	Filmstrips	Slides	16mm films	8mm films	8mm loop	Transparencies	Audio Reading	Video Reading

The above table shows that the cost of printed material ranges from medium to large. Pacing and sequencing are flexible and, in addition, printed materials can be used by individuals, small groups, and large groups. There is no motion or audio capabilities and they are available in large quantities commercially.

The question that remains to be answered is, does matching materials and learner characteristics really work? Louis P. Berneman and Carroll W. Dexter attempted to answer the above question with their study of the Annehurst Curriculum Classification System. This system is a way of thinking and learning about individual student's learning needs. It also classifies the materials of instruction to meet each student's learning needs.⁸ Berneman and Dexter conducted a study with 55 fifth-grade students. Two groups matched to their instructional materials by the Annehurst Curriculum Classification System and two groups unmatched. They found no significant differences between matched and unmatched groups.⁹ They did acknowledge that their investigative procedures may have affected their findings. The question remains, does individualization which focuses on student needs, interests and characteristics work?

⁸Jack Frymier, "The Annehurst System: Built on Recognition that People are Different," Phi Delta Kappan, 61 (June 1980), p. 683.

⁹Ibid., p. 684.

CHAPTER III

TYPES OF LEARNING PACKAGES

A confusing array of alternative approaches to packaged learning exists on the education scene. Many claim to be effective means for individualizing instruction for students. Others do not mention individualization, but are in fact individualized; still other packages are specifically designed for teacher conducted group instruction and yet contain some elements similar to those included in packages designed for individualization.

A well designed teaching-learning package is built as instructional systems and is characterized by several distinguishing features.¹⁰

1. The teaching-learning package places emphasis on individualization.
2. Broad concepts organized into manageable modules are the basis for learning packages.
3. Clearly stated instructional objectives convey the quality of performance expected.
4. Learning packages provide a variety of media to accommodate different learning styles.
5. The package should provide for diversified learning activities, particularly student-student interaction and teacher-student interaction.

¹⁰Glenys G. Unruh, "Can I be Replaced by a Package," Educational Leadership, 12 (May 1970), pp. 763-66.

6. The role of the teacher instructor is significantly changed from a dispenser of information to a diagnostician of learning.

The package should provide flexible provisions for teacher input in local adaptations. The teacher, working closely with the community, can bring his/her professional expertise to bear in applications appropriate for each student in each particular situation. Learning packages should make it possible for teachers to devote more time and energy toward the development of the whole student.

The learning packet offers the student some unique benefits. First, the packet, as a learning tool, enables the students to progress at their own rate. This is possible because the learning packet informs the student of what is to be learned and points out the various methods of mastering the objective. Learning packets offer the students an opportunity to learn by the media most suitable to his/her learning style. Through the use of learning packets, students are encouraged to master information retrieval skills rather than to commit facts to memory. Another plus is the choices given the student within the decision making process. Finally, packet instruction provides many openings for interaction between the student and teacher.

Individualized learning packages developed for the Alhambra, California schools is a simplified one-page learning model that contains all of the components, but not the bulk, of the original learning packet. The learning model can best be defined as a simplified communication device that allows teacher and student diagnosis and prescription. The learning model is effective as partial credit contracts at the secondary level.

There are eight components of the Single Page Learning Model: subject, concept, purpose, objectives, pretest, learning activities, posttest and quest suggestion.¹¹ The subject is used as a means of classification while the concept is in reality the title of the Learning Model. The concept should contain little or no factual data. A complete positive statement is preferable, open-ended or question form. The purpose or rationale is the why of the model and should be developed by the teacher. The most fundamental component of the model is the objectives. They are the observable performance that is expected of the student. Experience has demonstrated that it is wise for the teacher to write such statement to the students. The number of objectives appropriate for any one concept can only be determined by Teacher's evaluation of the student. The pupil must conduct a self-analysis of his/her ability in comparison with stated objectives. If the student is successful in the pretest, he or she may skip the learning activities. These learning activities should be as diversified as possible to allow for a wide variety of ways to learn. During the learning activities, accountability focuses on the student. After completion of the learning activities the student takes a posttest which should be identical to the pretest or like it enough to allow for accurate growth measurement. The list of quest suggestions is the final section of the Learning Model. Quest must not be an extension of the learning

¹¹Leonard F. Dalton, "The Single Page Learning Model," Learning Packages in American Education, New Jersey: Educational Technology Publication, 1972, p. 17.

activities. It is designed for the highly motivated, rapid learner. See Appendix 1, Sample Learning Model.

The Learning Activity Package (LAP) had its conception at Nova High School in Florida. Basically, the LAP is a booklet on a given topic, containing objectives related to the topic, diverse activities to reach these objectives, and evaluations to determine if the objectives have been met. The activity package is designed to individualize instruction consistent with factors in the definition of individualized instruction.

LAP components consist of topic, rationale, objectives, pretest, activities and posttest. Depending upon the magnitude of the content, the topic may be divided into subtopics. Also, depending on the magnitude of the content, quizzes may be used during the activity stage. The rationale, a narrative statement to the student, communicates the intent of the package and its importance to the student's course of study. The rationale can take other forms: a stimulating film, a large group presentation, a challenging experiment, or an explorative study.¹² All objectives should be behaviorally stated and should specify the intent, performance condition, and the minimum acceptable level of performance. In the beginning, objectives may be simply performance. As the student progresses, diversity in levels of learning should be provided to involve higher levels of thought processes. Once the intent and the performance criteria have been communicated, a self

¹²Sally M. Cardarelli, "The LAP-A Feasible Vehicle of Individualization," Educational Technology, 12 (March 1972), pp. 23-29.

evaluation should be provided. This form of evaluation should serve the following purposes.

1. Allow the student to bypass the Activity Package if he/she can meet the performance criteria.

2. Guide the student to those portions of the Activity Package that need to be studied.

Evaluation need not be exclusively paper and pencil types. They can be product oriented, group discussion oriented, or manipulative performance oriented.

The heart of the Activity Package is the learning activities component. These activities should provide the learner with alternatives in terms of the following:¹³

1. Multi-media--the use of various kinds of audio-visual equipment and the performance of sensory-oriented tasks.

2. Multi-mode--variations in process goals that determine the size of the learning group and methodology.

3. Multi-content--differing levels of sophistication or difficulty of all resource materials, whether printed or audio-visual.

4. Multi-activities--variations in terms of paper and pencil activities, such as listening, viewing, speaking, participating in academic games and simulations.

It should be noted that congruence between pretest, objectives, activities, and posttest must be built into any packages. The final component of the Learning Activity Package may be classified as an

¹³James E. Smith Jr., "The Learning Activity Package (LAP)," Educational Technology, 12 (September 1972), pp. 15-17.

addendum: The Teacher's Instructions Section. This section should include that information which is extraneous to the student package but essential to the smooth presentation, management, and evaluation of the system. See Appendix 2.

The Duluth Contract is another form of individualized learning package. It is designed to be a miniature lesson plan for direct use by individual students. Normally, it consists of six parts: content classification, purpose, performance objective, evaluation, taxonomy category, and resources. These six parts include all the information that a student needs to work on his/her own within a program of individualized instruction. The contract approach is applicable in a variety of situation.

Alternative one is the teacher made and teacher assigned contract. The student has little or no choice in what is to be learned. Prescriptive approaches to instruction generally appear to favor this mode. The second alternative is the teacher made but student assigned contract. From a bank of contracts which the teacher has created, the student selects the one he/she will work on. The third approach is the student made and student assigned contract in an area that the student has identified as being a weakness. This alternative encourages the learner to engage in some self-prescription. The final approach is the use of student made and student assigned contract in an area of special interest. See Appendix 3.

CHAPTER IV
STUDY GUIDES

In an analysis of research to personalized systems of instructional procedures, researchers have concluded that study guides may be one of the critical independent variables in increased performance when PSI procedures are compared with traditional lecture procedures.¹⁴ For example, researchers found that performance increases on criterion tests. They also compared correct responses on unit tests when students were given study guides with answers, study guides with no answers, and no study guides.¹⁵ Test scores were higher in the two study guides conditions. In another research project with study guides, G. J. Whitehurst demonstrated that errors are reduced on unit tests when the answers to the study guide questions are written.¹⁶

Based on the work of Semb, Hoskins and Hursch, researchers Marlene Farnum and Thomas A. Brigham conducted two experiments using small study guides in fifth-grade social studies class.¹⁷

¹⁴K. E. Lloyd, "Behavior Analysis and Technology in Higher Education," Handbook of Applied Behavioral Research, ed., T. A. Beigham and A. C. Catania, New York: Irving Press, John Wiley and Sons, 1977, pp. 313-358.

¹⁵George Semb, B. L. Hoskins and Daniel E. Hurch, "The Effects of Performance in a College Course," Journal of Applied Behavior Analysis, 6 (Winter 1973), pp. 631-642.

¹⁶Grover J. Whitehurst, "Academic Responses and Attitudes Engendered by a Programmed Course in Child Development," Journal of Applied Behavior Analysis, 5 (Fall 1972), pp. 283-291.

¹⁷Marlene Farnum and Thomas A. Brigham, "The Use and Evaluation of Study Guides with Middle School Students," Journal of Applied Behavior Analysis, 11 (September 1978), pp. 137-144.

The first study was designed to test the hypothesis that study guides would improve the test performance of middle school students. The second experiment examined the effect of having students act as their own proctors by scoring their own work. Experiment I showed to be educationally effective; students who received study guides scored higher than those who did not receive study guides.

Critics might argue that students learned nothing more than correct answers to a pool of study questions. It should be pointed out to the critics that learning did in fact happen. In addition, the use of study guides did not lead to inferior performance. This point is significant when teachers consider that grades and performance are directly related.

The use of study guides on college students' test performance has been studied by researchers David Niles, Robert J. Kibler and L. Eudora Pettigrew.¹⁸ The results also indicated a positive relation between study guides and performance. The experiment involved 320 undergraduate students randomly assigned to six groups. Three of the six groups were given study questions and were generally superior to those not given study guides. An analysis of variance tests indicated that the difference among means was statistically significant at .001 level of significance. It should be noted that the researchers identified the study guides as behavioral objectives. For the purpose of comparison, both have the same meaning describing the behaviors that successful learners should be able to demonstrate.

¹⁸David T. Miles, Robert J. Kibler and L. Eudora Pettigrew, "The Effects of Study Questions on College Student's Test Performance," Psychology in the Schools, 4 (January 1967), pp. 25-26.

Mager goes a step further and suggests that if a learner knows precisely what is expected of him/her, he then can better focus on course essentials. Related research by Mager and Clark found that adults, when provided with curriculum control and detailed behaviorally stated objectives, performance improves.¹⁹ These findings provide empirical support for theories of instruction which emphasize informing pupils of instructional goals and criteria for success.

Michael R. Wunsch investigated study guides as they related to bookkeeping and accounting.²⁰ Using three different treatments: learning devices, and a combination device, with multi-variate design, Wunsch rejected the Null hypothesis for each treatment. The researcher used F tests to determine statistical significance. In addition, the t tests were used to test for superiority of individual treatment, for superiority of individual levels, and for interaction effect between separate treatment and individual socio-economic levels.

The evidence indicated that the three unlike treatments were associated in some way at the .025 level (f test). Also, the evidence indicated that the three unlike socio-economic level groups were related in some way at the .001 level (f test). For interaction effects between the different treatments, the experimenter found that treatments and positions were associated in some way at the .05 level (f test). After applying additional tests of significance to the data, the researcher found that for both the lower and the middle socio-economic levels, study guides as a testing device were related beyond .01 level.

¹⁹Robert T. Mager and Cecil Clark, "Exploration in Student Controlled Instruction," Psychology Reports, 13 (August 1963), pp. 71-76.

²⁰Michael R. Wunsch, "Effects of Study Guides for Bookkeeping/Accounting," Journal of Business Education, 47 (May 1972), pp. 318-319.

Extensive research has been conducted in the area of personalized instruction. Although different in methodology, the study guide is often utilized in the individualized instruction package. The overall effects of study guides are important for at least two reasons. First, they can be used to produce near mastery of material as defined by performance on test items. Secondly, they are a major academic variable in both semi-traditional and individualized instructional approach to teaching.

Even with the positive information about the use of study guides, there are critics and researchers that present a different view. Janclyn G. Kotaska and Gary Dickinson conducted research on study guides and adult learning. Their findings failed to detect any substantial effect of study guides on performance.²¹

Another researcher, Ronald P. Carver, critically reviewed the effects of study guides in an effort to bring certain theoretical and methodological problems to the attention of study guide supporters.²² Carver criticized recent research because it: (a) has failed to control two very significant variables--learning strategy and learning time, (b) cannot be generalized to most practical situations wherein prose materials are used for learning, and (c) is of questionable value with respect to important theoretical advancement.

²¹Jancelyn G. Kotaska and Gary Dickinson, "Effects of Study Guides on Independent Adult Learning," Adult Education, 25 (Spring 1975), pp. 161-168.

²²Ronald P. Carver, "A Critical Review of Mathemagenic Behaviors and The Effect of Obsession Upon the Retention of Prose Materials," Journal of Reading Behavior, 4 (Spring 1972), pp. 93-119.

CHAPTER V
COMMERCIAL LEARNING PROGRAMS

Program for Learning in Accordance with Needs (PLAN) was developed over a four-year period from 1966 to 1970. The program was designed to include learning modules in four subject areas: mathematics, science, language arts, and social studies for grades one through twelve.²³ There are five principle components of the system: education objectives, learning methods and materials, guidance, and individual planning.

With respect to educational objectives, Project PLAN has developed comprehensive lists for grades 1 through 12 which reflect current thought and practice. These objectives are prepared for the four subject matter areas. In Project PLAN about five objectives are grouped in a module. Each of the objectives is intended to require two to three hours to achieve. Thus, the module is intended to provide a two-week segment of instruction. It is the intent of Project PLAN that each student select his own educational objective with the help of his teacher. The mastery of each objective is measured by a test, usually consisting of five to ten items to assist students in learning the objectives for a module. A student guide, called a teaching-learning unit, is provided.

Project PLAN begins with available instructional materials and media. To provide the necessary flexibility for individualizing,

²³John C. Flangan, "The PLAN System as an Application of Educational Technology," Educational Technology, 12 (September 1972), pp. 17-21.

several teaching-learning units are provided for each module. A teaching-learning unit is a four-part guide which lists each objective along with the materials to be used by the student in attaining this objective. First is the statement of the objective in terms of the type of performance a student should be able to demonstrate if he has mastered the objective. The second part is a specific type of achievement expected. The third portion of the unit directs the students to a specific textbook, workbook, tape, or other learning materials. Finally, the fourth part contains detailed specifications of what the student should do with the materials to make specific objectives. With this type of system, an indefinite number of teaching-learning units can be developed using specific learning material.

Evaluation of the effectiveness of the various instructional methods and materials is another important aspect of the program. Evaluation is accomplished when two main types of assessment materials are used. The first type includes specific test questions focused on achievement. The second type of assessment procedure is designed to measure a long term objective. Objectives of this type would include reading comprehension, attitudes, appreciation and originality.

The guidance and individual planning program represents a major development. The program consists of four major components.²⁴ The first two are primarily related to information and concepts and their interpretation. The second two are more specific skills and abilities for planning and carrying out the individual's development, based on the knowledge presented in the first two components.

²⁴Robert A. Weisgerber, Developmental Efforts in Individualized Learning, Itasca, Illinois: Peacock Publisher, 1971, p. 20.

The first component of the guidance and planning program is for acquainting each student with the status of his development with respect to abilities, interests, physical and social characteristics, and values in the areas of education, vocations, social behaviors, citizenship, and the use of leisure time. The second component consists of a program to familiarize the student with the variety of opportunities, roles, and activities in the world of work, in social and civic relations, and in cultural and recreational pursuits. The third component is a program to assist each student to formulate his long-term goals and to take the responsibility for and plan a developmental program to achieve these goals. The last component is a set of procedures designed to assist the student in learning to manage his own development.

The teacher development program consists of two parts. The first part is a three-day individualized program which uses modules, teaching-learning units, objectives and a test. The second phase of the program is an inservice training program. This consists of the identification of problems. The discussion and development of solutions and the additional use of modeling and practice techniques to develop effective behavior patterns.

PLAN has been implemented in diverse schools, ranging from traditional classroom configuration to modern designs. In both the older schools and in the newer school, the main emphasis in the classroom is on providing (1) open space for student movement, (2) flexibility in the use of furniture, (3) easy access to equipment and materials, and (4) an acoustically and visually desirable environment for learning.

Individually Guided Education (IGE), developed by the Wisconsin Research and Development Center for Individualized Learning, is another major individualized effort. IGE is an alternative form of schooling that functions within the established patterns of American education. IGE schools are funded, as are other schools, within a particular district or state. IGE places more emphasis on diagnostic and prescribed learning and self-directed learning than on independent study and personalized learning. In contrasting Individually Guided Instruction and Individual Prescribed Instruction, IGE leaves instructional decisions in the hands of the teachers; IGE materials are more prescriptive. Schools with the following characteristics should find IGE compatible.²⁵

1. Willingness to exchange the traditional age graded structure for the multi-unit school organization.
2. Commitment to a comprehensive staff development program.
3. Resources to hire instructional and clerical aides and to invest in materials and consultative help.
4. A desire for accountability.

IGE is a comprehensive system of seven interrelated components that form the system at the elementary and middle school levels. The seven components of an IGE system are:²⁶

1. A unique multi-unit organization-administrative arrangement.
2. Instructional programming for the individual student.

²⁵Jan Jeter, Approaches to Individualized Education, Virginia: ASC, 1980, p. 28.

²⁶Herbert Klausmeiser, Individually Guided Education in Elementary and Middle Schools: A Handbook for Implementors of College Instructors, California: Addison-Wesley, 1977, p. 17.

3. Evaluation of student learning tied to instructional programming.
4. Compatible curriculum material with instructional programming.
5. A program of home-school-community relations.
6. Facilitative environments in the school district and state.
7. Continuing research and development to keep IGE attuned to changing societal conditions.

The multiunit organization consists of three groups: the instruction and research unit (I & R unit), the Instructional Improvement Committee (IIC), and the Systemwide Program Committee (SPC).

The non-graded I & R Unit replaces both the age-graded, self-contained classroom and the departmentalized form of organization for instruction. An I & R Unit includes a unit leader, staff teachers, and 100 to 150 students. Only one person, the unit leader, is responsible to the principal for the management of instruction within each I & R Unit. The main function of the cooperative instructional team of each I & R Unit is to plan, carry out, and evaluate instructional programs for each student in the unit. To plan and implement staff developed activities; and to plan and carry out research and development activities.

The IIC is the organizational unit at the school building level. The principal and unit leaders comprise the committee. The four main for which the IIC takes primary initiative are²⁷ (1) formulating the general educational objectives for the entire school building,

²⁷Klausmeiser, p. 19.

(2) interpreting and implementing systemwide and statewide policies that affect the educational program of the building, (3) coordinating the activities of the I & R Units, (4) arranging for the use of time, facilities, and resources that are not managed independently by the units. Each unit leader ensures that the teachers' points are properly incorporated in policies and decisions of the IIC.

The SPC is the district level organization. This committee is chaired by the school superintendent and includes representatives of central office, principals, unit leaders, teachers and parents. Five decision making and facilitative responsibilities for which the SPC take primary initiative are:²⁸

1. Identifying the functions to be performed in each IGE school.
2. Provide for recruitment of personnel for each IGE school and their inservice.
3. Providing physical resources and instructional materials.
4. Planning an effective program of home-school-community relations.
5. Providing for the transition of students from the IGE elementary school to middle school.

Where the structure has been implemented properly, substantial gains are found in organizational effectiveness, individual efficiency and group morale of teachers.

Instructional programming was conceptualized to facilitate each student's development in the cognitive, psychmotor, and effective

²⁸Klausmeiser, p. 20.

domain. The Instructional Improvement Committee formulates the educational objectives for the student population of the school building. The various I & R staff then assess the students, identifying instructional objectives for each student, and plan personal attention from a team of teachers. Each student will be aided in developing a positive regard for self along with self control, personal responsibility and social responsibility. Learning stations, grouping and regrouping of students and independent study are the primary instructional modes used in implementing instructional programming.

The third component of IGE is a model of evaluation. The model involves five steps directly related to instructional programming: (1) formulate instructional objectives and set related criteria of attainment, (2) measure, (3) relate measurement to criteria, (4) judge, and (5) act on judgement. The model is applied to all domains, cognitive, affective, and psychomotor. Also, the model required evaluative information to be gathered and used to plan and carry out instruction for individual students.

Curricular material for IGE incorporates four main attributes. First, the content incorporated in the material should be accurate and reliable. Second, the content should be learnable by the particular students for whom it is prepared. Third, the material and related activities should be teachable. And fourth, the materials should be suitable in terms of cost, attractiveness, and the amount of inservice teacher education required. The success of IGE is in part dependent on the compatibility of curricular material and instructional programming.

The home-school-community relations program operates at the district level, local school level, and instructional level. The

purpose of home-school-community relations is the analysis and solution of educational problems, for involvement in school activities, and conflict resolutions through open communication. The sixth component of IGE consists of human and material resources, both intraorganizational and extraorganizational. Intraorganizational focuses on providing the physical and material resources needed for learning and instruction. Extraorganizational are represented by state IGE networks composed of members of the state agency, intermediate education agencies, local education agencies, and teacher education institutions. This system of supportive and facilitative environments is required to maintain and strengthen the IGE program.

The final component of IGE, a program of continuing research and development, ensures the continuous improvement of IGE. This prevents the overall program from becoming sterile, unresponsive to the changing nature of society, and incapable of adapting to the needs of individual students.

The achievement of primary-age children after three years in IGE schools was compared with the achievement of students in non-IGE schools. In reading, the percentile rank was 59. In the non-IGE schools it was 48. In mathematics, the percentile ranks were 46 for IGE schools and 36 for non-IGE schools. The scores reflect growth as a result of the IGE schools.

The Learning Research and Development Center at the University of Pittsburgh is the creator of Individually Prescribed Instruction (IPI). The IPI Program is a highly structured system for grades K-6. The curricular areas include mathematics, reading and spelling. Students work at their own pace on individually prescribed learning

activities. The level at which the student works, the specific objectives pursued, and the nature of the study are determined largely by a series of criterion-referenced test. An overview of how the system diagnoses learning needs and prescribes learning activities follows.²⁹

1. A series of placement tests is given to each student at the beginning of the school year. The results indicate the level of mastery in each content area and pinpoint the specific unit on which the student begins.

2. For each unit of study, a pretest is administered covering the unit objectives. This is to determine which objective or skills have already been mastered, typically at an 85% level.

3. The teacher evaluates the pretest results and writes learning prescriptions for achieving the objectives yet to be assigned to an individual tutor, text materials, audio-visual material or group work.

4. The student obtains instructional materials independently and works on each non-mastered objective in the unit, one at a time. At specific intervals in the sequence of instruction, the student completes a curriculum test, which measures the student's mastery of the objective. If the student demonstrates mastery of the objective, he/she moves on to the next unit.

5. When the student has demonstrated satisfactory achievement on all objectives in a unit, a posttest covering the unit as a whole is administered. The posttest is an alternative form of the pretest and measures performance on all objectives of the unit.

²⁹Jeter, p. 28.

6. If the posttest indicates that mastery is not attained on some of the objectives, instruction is repeated. If mastery is demonstrated, the student moves on to the next unit. This may be in the same content area but at a higher level, or in a different content area at the level indicated by the placement test.

The curricula as mentioned earlier consists of mathematics, reading and spelling. The mathematics curriculum includes 13 specific areas: numeration, place value, addition, subtraction, multiplication, division, combination of processes, money, time, system of measurement, geometry, fractions and special topics. A total of 434 specific objectives has been established as part of the mathematics continuum.

The reading curriculum has been developed by sequencing the specific reading skills that need to be mastered. The skills are worked into units and levels of work much the same as in the mathematics continuum. The beginning reading program is built around the first 14 programmed text by Sullivan Associates. This material is supplemented by center-prepared records and special work sheets. A second phase of the reading program is the independent reading, in which students select their reading materials from the school's library. During the independent phase of the reading program, students are also working on prescribed skills materials.

Other curricula areas that have been developed are elementary science, social studies and handwriting. Basically, the structured-curricula model involves the following elements:

1. Sequences of instructional objectives to define the curriculum.
2. Instructional materials to teach each objective.

3. An evaluating procedure for placing each pupil at the appropriate point in the curriculum.
4. A plan for developing individualized programs of study.
5. A procedure for evaluating and monitoring individual progress.

In this curriculum a type of spiral progression is employed so that the student will move through many of the same topics at successively higher levels. The organization is such: A, B, C, D, E, and so on, that C topic should be studied prior to the same topic at level D.

Two types of measures are demanded for evaluation. The first of these is what may be called curriculum-embedded tests which are an integral part of the instructional sequence. A curriculum-embedded test (CET) is a measure of performance on one particular objective in the sequence. The second type of evaluation used to monitor individual progress is the posttest.

Teachers spend much of their time in administering tests, diagnosing learning needs, writing learning prescriptions, analyzing student progress, and providing individual guidance to the students. The IPI program falls into the Individually Diagnosed and Prescribed Learning category. Schools with the following characteristics should find IPI in harmony with their individualization goals: (1) emphasis on student cognitive development, (2) predisposition to retain an age-graded organization structure, (3) a desire for accountability, and (4) resources for instructional materials for each subject and for one paraprofessional per classroom.

CHAPTER VI

SUMMARY

Perhaps the major contribution of psychologists to the educational debate has been the identification of the wide range of individual differences among learners. The differences span ability, pace of learning, learning style, choice of subject matter, level of motivation and linguistic skills. Thirty students of the same age in the same class demonstrate these differences acutely, yet we continue in many schools to try to teach them as a group.

Education has traditionally been a restricted commodity--restricted to particular social classes, to particular geographical areas within countries and to a particular age group. All sorts of visible and invisible selection mechanisms have been used to perpetuate these restrictions and legitimize them. Individualized instruction's greatest promise is perhaps its ability to help break down these restrictions. Individualization has a democratizing influence.

Continuing education throughout life, vital in today's world, cannot in the future be achieved solely by recourse to traditional means. The adult working in full-time employment must be able to pursue home-based studies as well as the more conventional institution-based updating courses. Individualized instruction may find its strongest role in the area of adult education; it has the ability to take education outward to where people are through educational technology.

In a trend that reflects our contemporary times, education is shifting from a position of concern with the group norm toward concern for the individual, including needs, capabilities and personal

preferences. This trend is readily perceptible but it is not equally clear just what form individualization should take. As a natural consequence, there has been a proliferation of approaches to individualization, from teacher made learning packages to highly structured commercial programs. The one-page learning model, Learning Activity Package and the Duluth Contract are types that individual teachers can construct and use along with other instructional material. If a district wanted to individualize its entire system, there are the commercial programs. Project Plan, Individual Prescribed Instruction and Individual Guided Instruction are available for that specific purpose. Supplemented with technology, individualized instruction can present instruction on demand and education can focus on the individual's needs and characteristics. Today it is essential that educators understand how young people of the present era are profoundly different from previous generations of adolescents.

The job of the schools of the past was to transmit information. The job of the schools today is to develop skills for the management of information. Individualized instruction is one strategy that can be used to develop those skills and help students manage information.

There are other advantages for the student and teacher. Some of the more important ones follow.

1. Individualized instruction permits the student to proceed at his/her own pace.
2. It enables the student to study in greater depth.
3. There is a one-to-one relationship between student and subject.
4. Teachers are able to meet the instructional needs of the

students.

5. It allows the teacher to spend more time with those students who need the most help.

6. It provides the teacher with a diagnostic device.

Study guides, although not true forms of individualized instruction, can be utilized to enhance learning. Research has shown their effectiveness when comprehension is a problem. It also has been found that the use of study guides reduces errors in testing. Not only can study guides be effective as a single variable, but also within a learning packet.

Educators and educational systems that adopt the concept of individualized instruction can effect change from a traditional environment to one of innovation. Students can be provided a wide variety of realistic learning experiences and education does not become the victim of neglect. Teachers should examine and utilize these means of alternative instruction and, where financially possible, districts should adopt all or a portion of the individualized instruction concept.

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Appendix I
Learning Model

Subject:

Concept:

Purpose:

Objective:

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

Pretest: If you think you can do the above objectives, obtain a pretest from your teacher. The following activities are suggested to you as a way to achieve the objectives:

Learning Activities: (May be selected by you or assigned by your teacher)

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

Pretest: After completing the learning activities, ask your teacher for the pretest.

Quest Suggestions: Since you passed the pretest, you need not do the learning activities. You may wish to go to the next learning package or study an activity of your own choosing such as:

Appendix 2

FORMAT FOR A LEARNING ACTIVITY PACKAGE

Suggesting a format to follow in developing a LAP while using only a few statements will necessitate the formats being very sketchy.

Rationale (Primary Idea)

This includes a number of introductory statements relating to the purpose and reasons for the topic that is being developed in the LAP. A clearly defined rationale for the selection of the particular concept or major theme is made in this section. For example, why should you know geography? This LAP is very important and will help you to understand certain geographical terms, maps, and map reading and the location of major areas.

Secondary Idea #1

For example, knowing the meaning of geographical terms makes understanding geography easier.

- I. Objectives - stated behaviorally
- II. Pre-test - Some of the students may know all or most of the materials or concepts to be mastered in the LAP. These students should be given an opportunity to take an exemption test. A pre-determined score, indicating mastery, is established. If the student's score is equal to or better than the established score, the student should be allowed to skip that part. This test must relate specifically to the behavioral objectives that have been established for this section.
- III. Activities - This is a series of learning activities designed to help prepare each student to meet the behavioral objectives. These activities should be varied to allow for a variety of learning styles.
- IV. Depth Options - Want to learn more? Improve your grade? This section should suggest activities that would provide an opportunity to pursue related or in-depth studies of the topic being developed in the LAP. Ideally, they should be student initiated and could well differ for each student.

- V. Student Self-Assessment Test - At appropriate times, the student needs to be able to make a self-assessment which will provide feedback to the student. This will give the learner and the teacher an opportunity to assess the progress that is being made toward the behavioral goals as established in the objectives.
- VI. Post-test - This test is given to provide the teacher with information.

RATIONALE EXAMPLES

Choice A: Some Reasons for Studying Logic

1. Since logic is regarded as a science instead of an art, its study will give you an understanding of the nature of the principles of deductive reasoning.
2. It should assist you in improving your powers of reasoning so that you will be able to recognize the difference between good and bad evidence for belief or conclusion.
3. It should enable you to become aware of the differences between persuasion through various psychological means, as opposed to rational conviction through evidence and logical reasoning. This should put you on guard against propaganda, and enable you to evaluate and resist sensational advertising.
4. It should enable you to develop a criteria attitude toward the assumptions of many of your own and others' arguments in such fields as politics and social sciences.
5. It should familiarize you with a vocabulary of logical terminology that exists throughout our literature, not only in science and mathematics.

Choice B:

In our present technological culture, some of the main accomplishments of man are the products of his industries. The products are materials which have been manipulated to meet the specifications he has set.

When we manipulate a material, there are basically three things which can be done; fastening, parting, and forming the material.

Usually we use a combination of the three to accomplish our end goals, the products. However, we must understand each of the three independently before we can deal with the whole of manipulation of material.

The purpose of the package is to introduce you to the area of fastening and some of the basic skills and terms associated with the area.

You will find the information and skills covered by this package of value to you in other packages within your sequence as well as the everyday application in your use of materials and products.

Choice C:

The study of science would have progressed very little without the development of measuring instruments and techniques. In fact, we may safely say that the progress of science has been directly related to the progress made in the field of measurement.

In this LAP you will learn the basic principles and use of several representative measuring instruments. You will make measurements of mass, length, and time with varying degrees of precision. It is interesting to note that many quantities such as area, volume, temperature, and pressure, which we normally think of as being measured directly, can be derived from one or more of these basic measurable quantities.

How do you compare with the examples given?

Rating: _____ Good _____ Not so Good

If you rated yourself "not so good" see corrective options below.

If you rated yourself "good" turn to next page and proceed with Objective #2.

Corrective Options:

___ 1. I will rewrite my rationale below:

Have the teacher evaluate your rationale.

___ 2. I will contact the teacher immediately for additional help in understanding what a rationale REALLY is.

Assignment #3: On a 3" x 5" card or space provided below write a rationale for a specific concept, phrase, or primary idea in your subject matter area.

Rationale:

Evaluate your rationale--

Have the instructor evaluate your rationale--

Objective #2:

Using the rationale of the concept, phrase or primary idea, write measurable student objectives by which the student will be able to demonstrate competence to your satisfaction. Make a selection of one or more of the "Assignment 1" choices to help you meet Objective #2.

ASSIGNMENT 1 Choose one or more of the following:

Text Media: Choice A. Preparing Instructional Objectives
by Robert F. Mager, Fearon Publishers,
Palo Alto, California, 1962.

Choice B. Read pages 7-0 covering behavioral objectives in the information section of this lap.

Audio Visual Media: Choice C. "Educational Objectives" filmstrip presentation in conjunction with audio tape and response sheet produced by Vimet Associates.

At the conclusion of this program you will be able to:

- a. Distinguish between behaviorally and non-behaviorally stated instructional objectives.
- b. Convert non-behavioral objectives to form specifying student post-instruction behavior.

Choice D. "Appropriate Practice" filmstrip presentation in conjunction with audio tape and response sheet produced by Vimcet Associates.

- a. At the end of the program you will be able to distinguish between written examples of pupil activities according to whether they are equivalent practice, analogous practice, prerequisite tasks, or irrelevant to a given objective.
- b. Given instructional objectives or writing your own objectives you will be able to write out learning activities which are equivalent practice, analogous practice, and prerequisite tasks for the objectives.

Choice E. "Selecting Appropriate Educational Objectives" filmstrip presentation in conjunction with audio tape and response sheet produced by Vimcet Associates.

ASSIGNMENT @

The objectives for this program are:

- a. You will be able to distinguish correctly between written objectives representing the cognitive, affective, and psychomotor domain of student behavior.
- b. Having properly identified cognitive objectives, you will be able to classify them as 1) the lowest or 2) higher than the lowest level of the cognitive domain.
- c. Given a relatively unstructured task of writing objectives for a single concept, phrase or primary idea, you will tend to write cognitive objectives at a higher level than would be the case prior to viewing the program.

Write Measureable Student Objectives:

Compare your objectives with the examples.

Rate your objectives: _____ Good _____ Not so Good

If you rated yourself "good" turn to next page in this LAP and proceed with objective #3.

If you rated yourself "not so good" read Preparing Instructional Objectives by Mager and take the self test on 54-60. Evaluate your own test.

Objective #3:

Using your completed objectives, develop a performance test covering all your objectives. Make a selection of one or more of the "Assignment 1 choices" to help you meet objective #3.

ASSIGNMENT 1

Choose one or more of the following:

Text Media:

Choice A. Preparing Instructional Objectives
by Robert F. Mager, Fearon Publishers,
Palo Alto, California, 1967.

Choice B. Developing Attitude Toward Learning
by Robert F. Mager, Fearon Publishers,
Palo Alto, California, 1968.

Choice C. Developing Vocational Instruction
by Robert F. Mager & Kenneth M. Beach,
Fearon Publishers, Palo Alto,
California, 1967.

Choice D. Read Page 9 covering self-test in
the information section of this lap.

Audio-Visual Media:

Choice E. "Evaluation" filmstrip presentation
in conjunction with audio tape and
response sheet produced by Vimcet
Associates. The specific objectives
of this program are:

- a. You will be able to design both
formal and informal preassessment
procedures when given an objective
- b. You will be able to construct a
test item which measures a given
objective.
- c. Given some test data, you will be
able to make defensible inferences
from the information.

Choice F. "Modern Measurement Methods" filmstrip
presentation in conjunction with
audio tape and response sheets
produced by Vimcet Associates.

After the conclusion of this program
you will be able to:

- a. Describe the principle purpose
of 1) criteria - referenced testing
and 2) norm - referenced testing.

- b. Identify whether selected measurement operations are most appropriate for criterion-referenced or norm-referenced.
- c. Properly classify descriptions of measurement devices as either criterion-referenced or norm-referenced.
- d. Distinguish between measurement situations which require criterion-referenced or norm-referenced measures.
- e. Describe the basic procedure, as presented in the program, for constituting tests by item sampling.

Choice G. "Establishing Performance Standards" filmstrip presentation in conjunction with audio tape and response sheets produced by Vimcet Associates. At the conclusion of this program, you will be able to perform the following behaviors:

- a. When given a statement of an objective, to identify the portion of it, if any, which describes a student's performance standard (a level of achievement which enables instructors to identify those students who have satisfactorily achieved the objective.)
- b. When given an objective, to identify the portion of it, if any, which specifies the class performance standard (achievement levels used to judge the adequacy of instruction).
- c. When provided with an objective, to construct performance standards of the two types listed above using both quantitative and qualitative standards.

Choice H. "Perceived Purpose" filmstrip presentation in conjunction with audio tape and response sheets produced by Vimcet Associates.

The objectives for this program are:

- a. When developing a Learning Activity Package, you will include a greater number of "perceived purpose-type" activities after viewing the program than you included before exposure to the program.
- b. Given written descriptions of teachers engaging in various activities, you will be able to distinguish between various teachers who are not promoting perceived purpose and, if so, which of the four techniques is being used.

Choice I. "Defining Content for Objectives" filmstrip presentation in conjunction with audio tape and response sheets produced by Vimcet Associates.

At the conclusion of this program you will be able to:

- a. Describe the desirable relationships an objective should have to test items.
- b. Discriminate between objectives which possess content generality and those which do not.
- c. Convert objectives which are equivalent to test items to those which possess content generality.

Choice J. "Analyzing Learning Outcomes" filmstrip presentation in conjunction with audio tape and response sheets produced by Vimcet Associates.

After the conclusion of this program, you will be able to:

- a. Describe the strategy recommended in the program for deciding on an instructional sequence.
- b. Formulate relevant entry and en-route behaviors for given or formulated instructional objectives.
- c. Generate more entry and en-route behaviors than you were able to prior to completing the program.

ASSIGNMENT 2 Develop a performance test covering the objectives you wrote on a separate sheet of paper. Compare each test question with your objective and code the question to the objective it relates to. Evaluate yourself. At this time, if you find that you have written a question that is not covered by an objective, re-evaluate your objectives.

After successful completion of objective #3, proceed with objective #4.

Objective #4

Using the flow diagram technique, you will develop the system a student can take to go through your developed lap. Make a selection of one or more of the "assignment 1 choices" to help you meet objective 4.

ASSIGNMENT 1 Choose one or more of the following:

Text Media: Choice A. Developing Vocational Instruction
by Mager & Beach, Jr., Fearon
Publishers.

Choice B. Read page 27 showing a flow chart in the information section of this package.

Audio-Visual Media: Choice C. "Systematic Instructional Decision Making" filmstrip presentation in conjunction with audio tape and response sheet. Vimcet series Palo Alto, California.

At the conclusion of this program you will be able to:

- a. List which instructional activities to include in teaching sequence.
- b. Evaluate whether the instructional sequence is effective.

ASSIGNMENT 2 Select one of your previous series of objectives that you wrote and make a flow chart to see how a student could proceed through this series of objectives.
Have the instructor evaluate your flow chart.

Objective #5

Using your completed objectives, list in writing a minimum of three activities, utilizing a different media and/or mode for each objective.

Make a selection of one or more of the "assignment 1 choices" to help you meet objective 5.

ASSIGNMENT 1

Choose one or more of the following:

Text Media:

Choice A. Proceed to your resource center and look up books available in the card index file pertaining to activities and/or mode for the specific concept, phase, or primary idea you have developed. Write these into the package you are developing.

Choice B. List and preview three available slides, filmstrips, single concept loop films or motion pictures directly related to the specific concept, phase or primary idea you have developed. Write these into the package you are developing as an activity.

ASSIGNMENT 2
Optional

*Develop a visual presentation using either slides, overhead transparencies, or single concept loop films having an audio track available with the presentation. This must be directly related to the idea you have developed.

*Resource-LAP on Preparing Slides & Audio Tape - by Kenneth T. Smith, ES'70 Coordinator.

Appendix 3

Duluth ContractContent Classification

Creative writing—using familiar words in unfamiliar ways.

Purpose

In school when you are assigned to write something, do you sometimes feel that you don't know how to make what you have to say sound interesting? Many people seem to have trouble making words come alive. There is no answer to this problem, of course. There are some simple things you can do to get more life into what you write. The purpose of this contract is to give you practice in using ordinary words in unusual ways, and to do so in a manner that will be fun for you and any of your classmates.

Performance Objective

Given the task of describing an object, person, or event, the student will be able to do so using words ordinarily reserved for a different kind of object, person or event. For example, describing an inanimate object as though it were animate.

Evaluate

In not more than fifty words, using any form of prose or poetry, do one of the following:

1. describe a clock as a villain
2. describe a truck convoy as animals at night
3. describe a woman as a bird or insect
4. describe the sun as an orchestra leader
5. describe the moon as a trapeze performer
6. describe a group of mountains as a family
7. describe the wind as an artist