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ABSTRACT

This course syllabus is part of the competency-based elementary teacher education program that was developed by the University of Toledo. It contains the ten learning modules which comprise the second course in the sequential elementary education program: a) Instructional Simulations and Academic Games; b) Preparation of Locally Produced Instructional Media; c) Strategies for Changing Behavior; d) Teaching Mathematics in the Elementary School; e) Mathematics in the Elementary School: Using Manipulative Objects; f) Mathematics in the Elementary School; g) Children's Literature: Folk Literature; h) Children's Literature: Realism and Fantasy; i) Language Arts: Diagnosing Reading Strengths; and j) Problem Solving: Problems and Process. Each module contains a list of the prerequisite modules, underlying rationale for the module, general and performance objectives of the module, learning activities and materials, and assessment instruments and procedures. (See related documents: SP 007 693, 007 702, 007 703, 007 704, and 007 705.) (HMD)

Elementary Education

312:328

Modules 1-9 & 11

THE UNIVERSITY OF TOLEDO

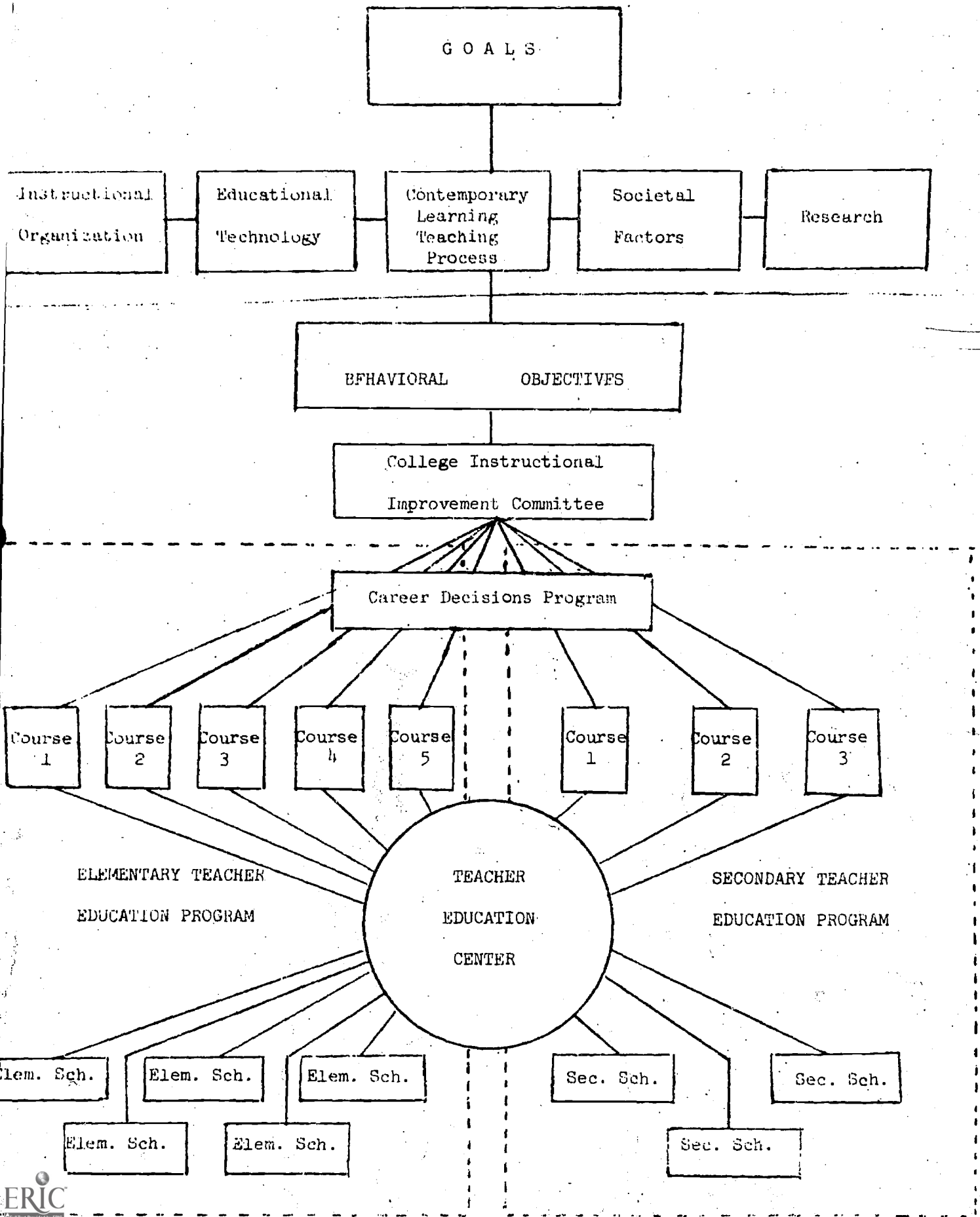
312:328

1. Instructional Simulations and Academic Games
2. Preparation of Locally Produced Instructional Media
3. Strategies for Changing Behavior
4. Teaching Mathematics in the Elementary School
5. Mathematics in Elementary School: Using Manupulative Objects
6. Mathematics in the Elementary School
7. Children's Literature: Folk Literature
8. Children's Literature: Realism and Fantasy
9. Language Arts: Diagnosing Reading Strengths
10. Language Arts: Creative Experiences in Language Arts
11. Problem Solving

Included in this notebook are the revised CBTE Modules. New materials as well as handouts which should not be considered prior to their exposure in class, will be distributed by the instructors at the appropriate time. Your reactions to these materials are earnestly solicited and formal assessment devices will be administered periodically to get that feedback. The University of Toledo has developed a model for teacher education and with your assistance we will be able to perfect it.

The University of Toledo CBTE program involves complete attention to all groups involved with teacher preparation and the continued improvement of teachers. For additional information related to the rationale and the other phases of the program (secondary and in-service) the reader is referred to the following four Educational Comment booklets; "Contexts for Teacher Education" 1969; "The Ohio Model and The Multi-Unit School 1971, Field-Based Teacher Education: Emerging Relationships" 1972 "Teacher Education for an Urban Setting, and Partners for Educational Reform and Renewal: Competency-Based Teacher Education, Individually Guided Education, and Multi-Unit School by Dickson, Saxe, et.al. The latter is published by McCutchan Publishing Corp. and the booklets by the University of Toledo College of Education. The diagram on the following page, illustrates the interrelationship between the goals of program, the structure of the curriculum and the laboratory (the schools).

A MODEL OF A COMPETENCY BASED TEACHER EDUCATION PROGRAM



University of Toledo

312:328

Module 01: Instructional Simulation and Academic Games

Fall 1973 Revision/Elsie

312:328

Module One

I. Department/Context: Educational Media & Technology/ Educational Technology

II. Subject/Topic: Technology in Education

III. Title: Instructional Simulation and Academic Games

IV. Prerequisites: 312:324

V. Objectives:

A. General Objectives

1. To develop an understanding of and familiarity with the use of instructional simulations and academic games in education.

2. To develop an awareness of effective utilization practices for simulations and games in instruction.

B. Performance Objectives

1. Given a list of alternative instructional objectives to indicate, in writing, which are more or less appropriate for the use of instructional simulations or academic games in terms of affective strategy/media match, with less than 15% error.

a. Given a list of descriptive examples, to label each as a non-academic simulation or game, a simulation, academic game, or simulation game such that 8 out of 10 instances are correct.

b. Given a list of terms pertaining to simulations and games and their definitions, to match the term and its definition with 90% accuracy.

c. Given various defining characteristics related to specific simulations and games, to match the characteristic with the simulation or game which best represents it, with less than 15% error.

d. Given various alternatives, to select those which are representative of the advantages of simulations and games, with 90% accuracy.

e. Given various alternatives, to select those which are representative of the limitations of simulations and games, with 90% accuracy.

2. Given various utilization practices for instructional media, to indicate which are more or less appropriate for the effective use of simulations and games, with less than 15% error.

   a. Given a list of various criteria for the selection of simulations and games, to indicate which are more or less appropriate, with less than 15% error.

   b. Given a list of various preparatory practices for simulation games, to indicate which are more or less appropriate for success of the medium, with less than 15% error.

   c. Given a list of positive and negative practices for conducting game play, to indicate which are useful for success, with less than 15% error.

VI. Treatment:

1. Take pretest for module 6. If successful proceed to the next module. Should your score fall below minimal acceptable competency, enter into the instructional sequence for this module.

2. In large group mode, participate in Puzzles exercise.

3. Read: Games Students Play by Clarence Stoll

4. Read: It's Not How You Play the Game. . . It's Whether you Talk About it Afterwards by Clarence Stoll.

5. Read: A Primer on Games by R. Fransecky and J. Trojanski.

6. Read: Discriminating Among Terminology: Simulations and Games.

7. Do exercise: Sample Simulations and Games for the Elementary School.

8. Read: Simulations and Games as an Instructional Medium.

9. Group discussion: Simulations and Games in the Schools

10. Optional: Listen to audio tape - "Simulation and Gaming in Curriculum Development." Available in UH 206.

11. Take post-test for Module 6. If successful proceed to next module. If competency is not met consult the criterion-objectives-means match and recycle the appropriate instructional means and/or consult an advisor as to where the descrepency might exist.

Answers to Classification Exercise

1.	Powerhorn	-	simulation game
2.	Block 'n Score	-	game
3.	Import	-	probably a simulation unless further information were obtained that students were using role playing in the game.
4.	Explorers I	-	simulation
5.	Explorers II	-	probably simulation
6.	The Blue Wodjet Co.	-	simulation game
7.	City Council	-	simulation game
8.	Homesteaders	-	simulation game
9.	Roaring Camp	-	probably a simulation
10.	Panatina	-	simulation game

Scoring:

none wrong	-	expert
one wrong	-	very good
two wrong	-	review "Discriminating Among Terminology"
three or more	-	Review appropriate reading material; consult an advisor as to the cause of your mistakes.

SIMULATIONS AND GAMES

AS AN INSTRUCTIONAL MEDIUM

How often have te ers wished for some "magical means" to interest students and help the a their understanding of a unit? Although no single approach can continuously motivate students, now technology is rapidly providing a diversity of techniques for bridging the gap between theory and practice. One technique, simulation and games, places the student in a position where he is able to experience situations of interaction which are created from a theoretical framework.

Simulations and games have a number of common characteristics.

1. A conflict of interest is presented so as to provide some degree of competition among players and/or teams.

2. The student assumes an active role in contrast with the passive traditional learning experiences found in a school.

3. The student has some alternatives from which to choose and typically has some control over events.

4. The individual helps to make decisions; often the decisions are made by a group and the individual must function as a team member.

5. Immediate feedback is part of the process; the consequences of decisions are quickly understood by students.

6. Although some simulations are designed to take as long as the real activity it is replicating, most compress a lengthy period of reality into a short period of time.

7. Simulations and games are simplifications of the real world which they abstract.

While an increasing number of schools are beginning to use simulations and games, there is nothing new about using this technique as a medium of instruction. War games are as old as gladiators and jousting knights, who used simulations to develop alternative tactics and strategies. Beginning in 1871, with the development of a wind tunnel to study aerodynamics, simulation has been used for scientific analysis and research. In 1956, the American Management Association introduced the first widely known business game, the Carnegie Management Game. Since that time hundreds of business games have been developed. In the 1960's the field of education became interested in and the prime developer of simulations. Probably the most vigorous and technically advanced work in developing simulations for teaching has been directed by James Coleman at Johns Hopkins University.

After experimenting with prepared simulations, teachers may wish to design their own. The Foreign Policy Association has set down six guidelines for designing one's own simulation(s).

1. One must identify the objectives to be achieved by the game.

2. The designer must construct a simplified model that will best serve the objectives.

3. Identify the roles of individuals and groups who will be participants.

4. Set the conditions for the players, being certain to set up specific guidelines regarding voting procedures, resources, personnel, etc.

5. Develop specific goals for the participants.

6. Set the limits and overall rules that will govern permissible behavior. Also, time limits must be determined for the various stages of play.

Psychologically, simulation is based on the premise that learners seek to solve problems in which they are intimately involved. Thus, simulation gets away from the standard system of extrinsic rewards and moves the learner into the realm of intrinsic reinforcement.

Simulation may utilize all the materials and techniques of educational technology; TV, radio, tapes, slides, films, and other source activities. Therefore, it can place the student in a more realistic environment than any other process of learning, except the actual experience. The student must think, select courses of action, and suffer consequences of economic loss, loss of prestige, censure, or other forms of castigation that are evident in a real culture.

With the increasing availability and use of simulations and games, an evaluation of their effectiveness and limitations is needed so that their contributions to the learning process can be seen in proper perspective. First, let us examine the positive contributions of simulations and games.

1. Unquestionably their impressive effectiveness in stimulating student interest and motivation is the greatest strength of simulations and games.

2. Simulations and games are versatile in that they can involve simultaneously both fast and slow learners.

3. Simulations and games relieve the teacher of the necessity to act as judge and jury in evaluating student performance.

4. Simulations and games provide the student with immediate feedback in regard to his performance.

5. Simulations and games develop the skills of bargaining, negotiation, and compromise.

6. Simulations and games develop the student's sense of being able to understand and affect the world around him.

7. Simulations and games give the student a feeling for a wider reality.

8. Simulations and games help to develop empathy and the affective learning domain.

9. Simulations and games are more self-disciplining than most other forms of learning.

10. Simulations and games help students become aware of the amount of information they must assimilate and the amount of planning necessary to make decisions in certain real life situations.

11. Simulations and games give students an increased sense of interdepence in the environment.

12. Simulations and games make possible a situation where the learner can discover the consequences of his actions without danger to himself.

13. Simulations and games aid in the learning of facts, principles, and concepts.

14. Simulations and games help to make learning an active process.

15. Simulations and games develop critical thinking in the players.

There is by no means unanimous support of simulations and games despite apparent evidence indicating problems and criticisms of simulations and games?

1. There is disagreement over the amount of learning that actually takes place.

2. A second problem concerns what degree a student will generalize behavior learned in a simulation. to the real world.

3. Another difficulty with simulations and games may be that student emphasis is on winning rather than learning.

4. An additional problem concerns the degree to which simulations and games reflect reality.

5. Still another problem centers upon simulation and game administration in the classroom.

6. A final problem concerns the high cost of developing simulations and games.

University of Toledo

Course 312:328

Module 02: Preparation of Locally Produced Instructional Media.

Fall 1973 Revision/Gentry

312:328

Module Two

I. Department/Context: Educational Media & Technology/ Educational Technology

II. Subject/Topic: Instructional Media & Mediated Instruction/ Production of Instructional Materials

III. Title: Preparation of Locally Produced Instructional Media

IV. Prerequisite: 312:324

V. Overview: Student design and production of mounted visuals, overhead transparencies, lettered visuals, spirit duplicated materials, and use of Ektagraphic copy camera.

VI. Rationale: In the classroom the chalkboard no longer serves as the primary mode for illustrating or amplifying ideas. Instructional tapes, records, films, overhead transparencies, filmstrips, slides, and many other specialized devices and materials are used singly and in concert to facilitate learning. Although a wide range of commercially produced media is available, instructional media prepared by teachers frequently offers the most practical approach to mediating specific learning situations. Teachers are often frustrated, however, in their efforts to meet a learners needs because they may not have acquired the necessary skills to produce these media. For these reasons, this module offers its content and experiences to the pre-service teacher.

VII. Objectives:

A. General Objectives

1. To develop understanding and skill in the preparation of instructional media and duplication procedures.

B. Specific Objectives

1. Given lettering stencils and pens, and appropriate materials, to produce an instructional message that is legible, centered, has uniform size and spacing of letters, without error.

2. Given appropriate equipment and materials, to produce multiple spirit duplications that have at least one illustration, and contains some form of lettered or printed copy (meeting criteria in a, above). The illustration should be recognizable, clear of extraneous marks, not skewed, and be produced in at least five clear copies, without error.

3. Given appropriate equipment and materials, to produce a heat process spirit master that contains at least one illustration and some form of lettered or printed copy. The original must be clear black and white, and the spirit copy must be legible, and centered, with at least 5 copies, without error.

4. Given appropriate materials and equipment, to mount a magazine picture, selected for an instructional purpose, with rubber cement using a permanent mounting. There should be no traces of rubber cement, wrinkles or bubbles, and have even margins, without error.

5. Given appropriate materials and equipment, to mount a magazine picture, selected for an instructional purpose, with dry-mounting tissue whose completed form will not show tissue residue, which will have even margins, be free from folds and air pockets, and have even adhesion, without error.

6. Given appropriate materials and equipment, to laminate the dry-mounted picture (in e, above) so that the picture shows no bubbles or creases, and the lamination material does not exceed the outer edge of the cardboard, without error.

7. Given appropriate equipment and materials, to illustrate and letter, by hand, an instructional overhead transparency whose illustration is recognizable, clear of extraneous marks, and whose letters are at least 3/8" high, legible, evenly spaced, and does not exceed six words, without error.

8. Given appropriate equipment and materials, to produce a heat process overhead transparency that contains at least one illustration and some form of lettering or printed copy, whose original is clear black and white, without extraneous marks, and whose copy is legible and centered, without error.

9. Given appropriate equipment and materials, to produce an overhead transparency with at least one overlay, using any or all production techniques for producing transparencies where the overlay(s) is in register, lays flat, and is firmly hinged to the transparency frame, without error. (Objectives g and h, above, may be combined to meet this objective).

10. Given appropriate equipment and materials, to produce a heat process color-lift overhead transparency that is free from clay residue and wrinkles, that has a sharply defined image and color(s), and no blank spots, without error.

11. Given appropriate material and equipment, to adhere an illustration to a cloth-mounting material that is without wrinkles or creases, and where the clothbacking does not exceed the outer margins of the picture, nor do the outer margins of the picture exceed the cloth backing, without error.

VIII. Instructional Activities

1. Sign up for four (4) hours in the Media Production Laboratory (U-Hall 200E).

2. Pick up packet of production materials from U-Hall 200E.

3. Purchase or borrow at least one felt marking pen (e.g., Magic Marker, El Marko, Marksalot).

4. Bring in 5 color magazine pictures that range in size between 4" x 5" and 8" by 10".

5. Choose either of the following procedures:

   a. Testing-out procedure: Produce the materials specified by the 11 stated objectives.

   b. Self-instructional Procedure: For each Objective:

      1) Read the directions included in this packet, and/or
      2) View the appropriate 8mm film loop
      3) Produce the specified instructional material, to meet a behavioral objective that you choose or write.

6. Have produced material evaluated by instructor or graduate assistant, using the criterion checklist.

7. Continue procedure until all materials have been produced and evaluated as acceptable by stated criteria.

310 - 328

Checklist
Module 02: Preparation of Locally Produced Instructional Media

Name _____ Term _____
Last, First

_____ Advisor _____
Evaluator

Objective	Criteria	NC	AC	MC
a. lettering with stencil & pens	1) Legible 2) centered 3) uniform size 4) appropriate spacing of letters 5) agree with student objective			
b. spirit duplication containing illustration & lettered copy	1) lettered copy meet criteria in "a", & illustration meet following criterion. 2) recognizable 3) clear of extraneous marks 4) not skewed 5) at least 5 clear copies 6) agree with student objective			
c. heat process spirit master of illustration & lettered copy	1) clear black and white original 2) legible copy 3) centered copy 4) at least 5 copies 5) agree with student objective			
d. mount magazine picture with rubber cement on permanent mounting	1) no residue of rubber cement 2) no wrinkles 3) no bubbles 4) has even margins 5) agree with student objective			
e. mount magazine picture with dry-mount tissue	1) not show tissue residue 2) has even margins 3) no wrinkles 4) no air pockets 5) smooth and even adhesion 6) agrees with student objective			

Objective	Criteria	NC	AC	MC
f. Laminate a dry-mounted picture	1) no air pockets 2) no wrinkles 3) lamination material does not exceed the outer edge of the cardboard 4) agrees with student objective			
g. to hand illustrate an overhead transparency	1) illustration is recognizable 2) illustration clear of extraneous marks 3) letters are at least 1/4" high 4) letters are legible 5) letters are evenly spaced 6) letters do not exceed six words 7) agrees with student objective			
h. Heat process overhead transparency containing both illustration & lettering	1) original is clear black & white 2) original without extraneous marks 3) copy is legible 4) copy is centered 5) agrees with student objective			
i. overhead transparency with overlay	1) overlay is in register 2) overlay lays flat 3) firmly hinged 4) agrees with student objective			
j. Color-lift transparency	1) no clay residue 2) no wrinkles 3) no air pockets 4) image sharply defined 5) color(s) sharply defined 6) no blank spots 7) agree with student objective			
k. cloth-back a picture	1) no creases 2) no wrinkles 3) cloth-backing does not exceed edge of picture 4) picture does not exceed cloth edge 5) agrees with student objective			

University of Toledo

Course 312:328

Module 03: Strategies for Changing Behavior

Fall 1973 Revision/Cohen and Cooke

Module Three

I. Department/Context: Contemporary Learning Teaching Process

II. Subject/Topic: Contingency Management

III. Title: Strategies for Changing Behavior

IV. Prerequisites: 312:324 Modles 2 and 3 counting and recording behavior.

V. Overview: This module is designed to help you acquire skills in changing the social and academic behavior of any one child and/or a group of children in a classroom. In previous modules skills were developed in specifying problems in behavioral terms and keeping accurate records of the problem frequency. In the current module the student will learn to apply strategies for increasing an infrequent behavior such as handing in assigned homework; decreasing a too frequent behavior such as hitting classmates; and building new behaviors such as teaching a child to support inferences with evidence.

VI. Behavioral Objectives:

A. General Objectives

1. You should understand that accurate records of behavior must be kept before, during, and after the application of any behavior change strategy in order to assess the effect of that strategy.

2. You should understand that one can pinpoint problems of social behavior by using frequency and/or time samples and of academic behavior by administration of formal or informal pretests.

3. You should learn that effective classroom rules are essential to maximizing learning and that class meetings for norm setting allow both students and teachers to establish rules and positive consequences for rule following.

4. You should realize that there are numerous strategies for changing behavior and once the behaviors are identified and reasons for selecting those behaviors are legitimate, then one decide the direction in which the behavior should change.

5. You will learn that there are numerous strategies for increasing a desirable behavior. Some of these strategies involve positive reinforcement ("consumables, manipulables, visual and auditory stimuli, social stimuli, and tokens" (Meacham and Wiesen, p. 46); Premack principle and contingency contracting; stimulus change; restructuring rules, etc.

6. You will become cognizant of the different techniques to be used for reducing an undesirable behavior such as ignoring attention getting and using time-out and response-cost punishment. Whenever you employ a strategy for reducing an undesirable behavior you should concurrently apply principles for increasing the incompatible behaviors.

7. You will learn that in building new behavior you can use cuing, prompting, shaping successive approximations, fading out cues, modeling, simulation and behavior rehearsal.

8. You will discover that in order to maintain changed behavior you should pair praise with other reinforcers and switch from continuous to intermittant administration of reinforcers. Also one should attempt to identify the long range objectives and make the short range objectives become closer and closer approximations of the long range goals.

9. You will probably learn that one doesn't always select the best strategy for changing behavior for the first time and that you should not get discouraged but rather should try some other strategies. Your data will help you evaluate the success of your efforts.

B. Specific Objectives:

TPO 1. Given a simulated classroom situation, the student will specify one student behavior to be increased and one to be decreased. He will specify how and when he would chart and record that behavior. For the behavior to be increased, the student must describe at least three different techniques that could be used to increase that behavior. For the behavior to be decreased, the student must describe at least two different techniques to be used in reducing or eliminating the target behavior. The descriptions must be in sufficient detail such that a stranger reading them would follow the exact procedures outlined without question of ambiguity.

MC = No more than 1 error of either omission or commission.
AC = No more than 2 errors of either omission or commission.

TPO 2. In a role playing situation of three minutes duration, the student will be able to engage in a conversation with another student without giving eye contact, body orientation, or vocal responses to either of two persons attempting to interrupt the conversation.

MC = Perfect ignoring; zero eye contacts, body orientations or vocal responses.
AC = No more than 1 attending response (eye contact, body orientation, or vocal response).

TPO 3. The student will be able to conduct a class meeting with three or more children so that at least two and no more than five rules are generated by the children. The rules should be stated behaviorally. The student must present a copy of the chart on which the rules are written. In addition, an audio tape of the class meeting must be presented which includes the specification of the class rules. One followup session in which the rules are reviewed by the children and teacher should also be included on the tape.

MC = All criteria within which the objective must be met.

TPO 4. Given at least one child in a classroom setting the student will be able to:

1. Pinpoint one social behavior to be changed.
2. Take at least four different samples of behavior. Each must be for at least 20 minutes and no more than two on the same day.
3. Select at least one positive consequence and implement it consistently to produce a five fold change in the pinpointed behavior.
4. Sustain the changed behavior for at least four consecutive samples of that behavior with no more than two twenty minute samples per day.
5. Chart the pinpointed behavior, after removing the consequences, for at least four consecutive samples with no more than two twenty minute samples per day in order to evaluate the result of the procedure.

MC only = no errors of omission or commission

TPO 5. Given a group of at least 5 children, the student will be able to:

1. Select at least one math or language arts concept to be taught and write a rationale for the selection.
2. For each concept specify at least one behavioral objective above the knowledge level of Bloom's taxonomy. The objective must describe the audience, behavior, conditions, and degree of proficiency needed for mastery.
3. Develop and administer a pretest which samples the behavior required on the objective. The pretest must be capable of producing results which can be scored reliably (at least an agreement index of 80%) with an independent observer.
4. After administering and scoring the pretest will design and implement a teaching strategy which includes positive verbal reinforcement such that each child "on-task" receives on the average at least one praise statement per two minutes of instruction. An audio tape of 30 minutes instructions must be presented to the facilitator for evaluation and should contain no verbal reprimands of any of the children.
5. All children must be able to master the objective on the posttest at the end of instruction and on a delayed parallel posttest given one week after instruction.
6. The student must write a report including the above data and submit it along with the audiotape of all instruction to the facilitator.
7. MC = no errors of omission or commission. AC = no errors of omission or comission and at least 80% of the children master all the objectives.

BEHAVIOR MANAGEMENT MODULE PROFILE

behavi

OBJECTIVE	TREATMENTS	RECYCLE
#1. Increasing and decreasing behaviors	a. Read Meacham and Wiesen, Chapt. 1-9 b. Read problems handout and do activities c. Attend class sessions on increasing and decreasing behaviors d. Read 3 SALT case studies	Laboratory Program Readings in Mink Book Mager's film Filmstrip, Contingency Management: a Positive approach to Motivation
#2. Ignoring Behavior	a. Attend class sessions on decreasing behavior b. View video tape on ignoring c. Role playing ignoring	Role playing
#3. Class Meeting	a. Attend class session on class meeting b. Read handout on class meeting c. View video tape on class meeting	Video tape on class meeting
#4. Social Behavior Change	a. Read Meacham and Wiesen, Chapt. 1-9 b. Fill out Behavior Management Project Forms for planning Before and During implementation. Facilitator assesses before project is continued. c. Fill out Behavior Management Forms on completed project. Make a transparency for completed study.	Same as Objective #1.
#5. Academic Behavior Change	a. See Language Arts/and/or Math modules	

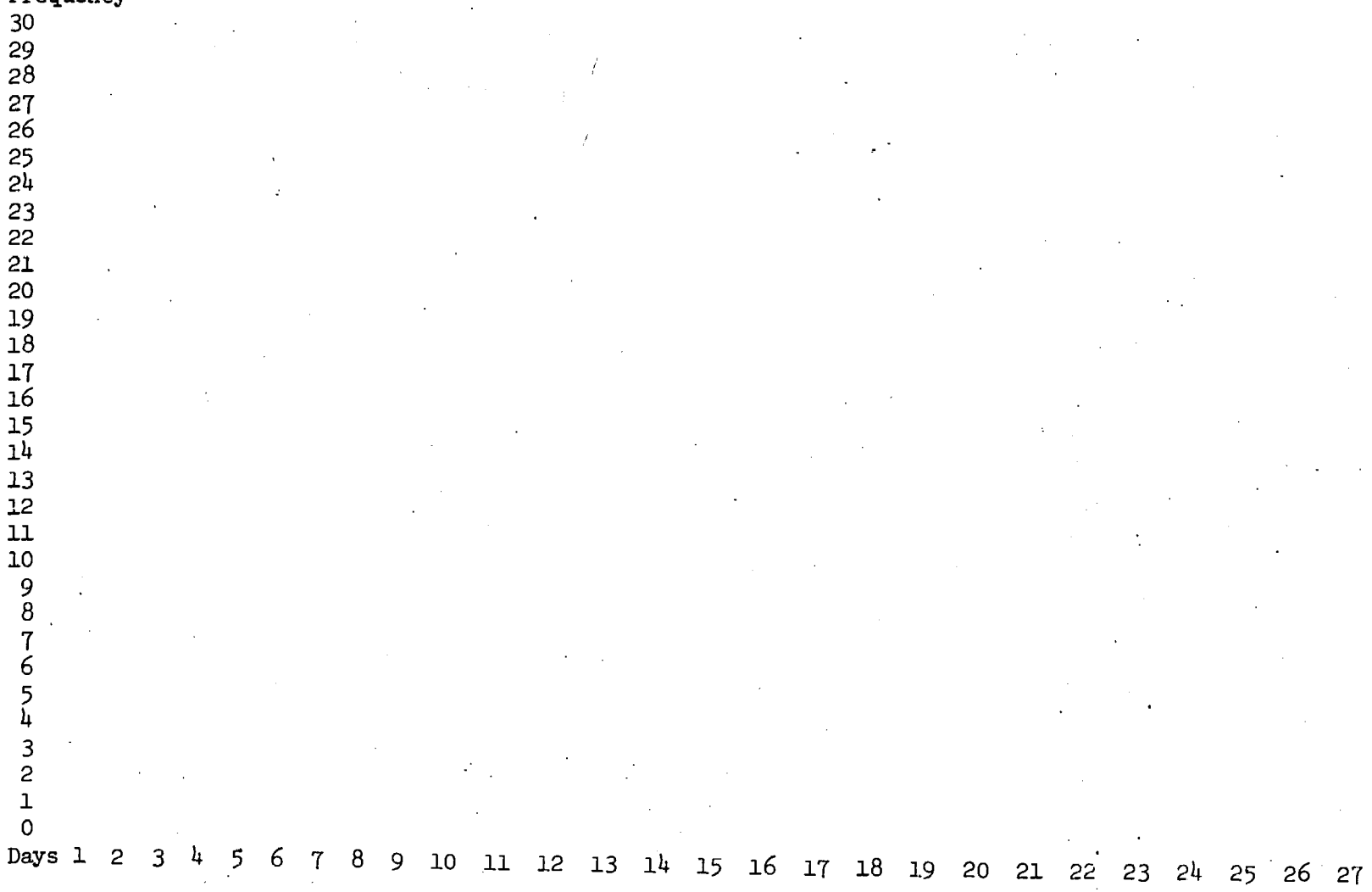
BEHAVIOR MANAGEMENT PROJECT FORM

Purpose: (check one)
____ Planning
____ Description

Name of Subject _____

Name of Manager _____

BEFORE	DURING	AFTER
(pinpoint and record base) Describe the pinpointed behavior and time recorded	(consequate and record change) Describe altered environment and/or reinforcement	(remove consequate; record and evaluate)



University of Toledo

Course 312:328

Module 04: Teaching Mathematics
in the Elementary School.

Fall 1973 Revision/Gibney

I. Department/Context: **Instructional Organization**

III. Subject/Topic: **Mathematics**

III. Title: **Teaching Mathematics in the Elementary School**

IV. **Prerequisites:** 312:324

V. Objectives

A. Given different teaching situations the student will develop strategies for teaching new concepts and maintaining skills in elementary school mathematics.

B. The student will develop a plan for implementing each of the strategies in Objective A. Included in the plan should be:
a) objectives stated in behavioral terms which meet criteria in the behavioral objectives module.
b) a list of required materials, as outlined in modules on mathematical materials.
c) an outline of instructional procedures as specified in evaluation procedures.

C. 1. The student will develop and teach a sequence of lessons in which a new concept is developed and reinforced.

2. The student will develop and teach a sequence of lessons in which the objective is the maintaining of a mathematic skill.

These strategies should include such activities as application, games and projects.

D. Specific Objectives.

1. Given an individual lesson, state objectives in behavioral terms.

2. a) Given an objective, outline an inductive sequence of experiences to carry out the objective.

b) Given an objective, outline a deductive sequence to carry out the objective.

3. Given a concept, provide for the discovery of a pattern to help develop the concept. A student will describe a way of developing the concept: (1) where the emphasis is on teacher explanation and (2) where the emphasis is on active pupil participation.

4. The student can introduce a lesson in such a way as to elicit active participation on the part of students by using an assortment of appropriate techniques in questioning, inquiry and motivation.

5. Given a particular classroom situation, the student will use mathematical language that is both accurate and appropriate.

6. Given an algorithm for one of the four basic operations, the student can construct a flow chart of prerequisite skills and concepts.

7. Given a basic operation, the student can perform several algorithms for that operation.

8. Given two or more approaches to teaching a mathematics concept, select one and justify this choice for an individual student.

9. Given a particular grade level, the student will list the major concepts which are generally taught at that level.

VI. Treatment

A. The students will observe in classrooms or on video tape examples of methods of introducing new concepts.

B. The students will read some of the suggested readings which discuss the introduction of new concepts.

C. The students will be assigned some of the suggested activities.

D. The students will prepare a lesson plan to develop a new concept.

E. The student will take part in small group sessions dealing with skill maintainence and concept teaching.

F. The student will examine several currently used textbook series and their teachers' guides paying particular attention to placement of topics and to strategies used in teaching these topics.

VII. Readings

A. Required

1. F. E. Grossnickle, et. al. pp. 141-188
   Ch. 8. Patterns for Teaching the Basic Facts in Addition and Subtraction.
2. F. E. Grossnickle, et. al. pp. 189-237
   Ch. 10. Patterns for Teaching the Basic Facts in Multiplication and Division
   Ch. 11. Multiplication and Division of Whole Numbers
3. F. E. Grossnickle, et. al. pp. 259-283
   Ch. 18. Addition and Subtraction of Rational Numbers
4. F. E. Grossnickle, et. al. pp. 284-308
   Ch. 14. Multiplication and Division of Rational Numbers
5. Shmuel M. Avital and Sara J. Shettleworth, Objectives for Mathematics Learning--Some Ideas for the Teacher, Bulletin of the Ontario Institute for Studies in Education, No. 4. (Toronto: The Ontario Institute for studies in Education 1968), pp. 1-43.

   Three distinct levels of mathematical thinking are identified and examples of behavioral objectives and test items for each level are presented.

B. Suggested (Sources are on reserve in Carver Curriculum and Materials Center)

1. Frank S. Deck. "Are You Giving Proper Emphasis to Concept Development in Arithmetic?" Mathematics in Elementary Education, ed. M. J. Vigilante (Toronto: The Macmillan Company, 1969) pp. 182-185.
   The concepts involved in understanding the division of common fractions are discussed.

2. William H. Hausdoerffer, "Introducing Our Number System in the Primary Grades," Readings in the Teaching of Elementary Mathematics, ed. Fred L. Pigge (Washington: NCTM, 1969), pp. 52-54.
   This article discusses some of the fundamental approaches used to help children understand the place value principle of our number system.

3. Boyd D. Holtan, "Strategies and Teaching Elementary Mathematics," Mathematics in Elementary Education, ed. N. J. Vigilante (Toronto: The Macmillan Company, 1969), pp. 189-193.
   Four concept strategy types are illustrated in the teaching of two arithmetic concepts.

4. Thomas C. O'Brien, "Two Approaches to the Algorism for Multiplication of Fractional Numbers," Readings in the Teaching of Elementary Mathematics, ed. Fred L. Pigge (Washington: NCTM, 1969), pp. 134-37.
   A comparison of two geometric approaches to the algorism for multiplication of fractional numbers.

5. Cambridge Conference Report "Curriculum for Elementary School (K-6)," Problems in the Teaching of Elementary School Mathematics, ed. Klaas Kramer (Boston: Allyn and Bacon, Inc., 1970), pp. 8-19.
   Proposed outline of elementary school mathematics curriculum for the 1990's.

6. Robert B. Davis, "Discovery in the Teaching of Mathematics," Mathematics in Elementary Education, ed. Nichols J. Vigilante (Toronto: The Macmillan Company, 1969), pp. 203-216.
   Dr. Davis gives examples of what he considers discovery experiences for children, describes what he means by discovery, and lists the objectives of the Madison Project.

7. Edwina Deans, "University of Illinois Arithmetic Project," Problems in the Teaching of Elementary School Mathematics, Klaas Kramer (Boston: Allyn and Bacon, Inc., 1970), pp. 135-157.
   A report on the University of Illinois Arithmetic Project.

8. Edwina Deans, "Why the Increased Emphasis on Mathematics Today," Problems in the Teaching of Elementary School Mathematics, ed. Klaas Kramer (Boston: Allyn and Bacon, Inc., 1970), pp. 4-8.
   The reasons for change in elementary school mathematics are discussed.

9. E. Glenadine Gibb, "Basic Objectives of the Program," Mathematics in Elementary Education, Nicholas J. Vigilante (Toronto: The Macmillan Company, 1969, pp. 50-54.
Dr. Gibb discusses what she believes are the five objectives for a good mathematics program in the school.
1) An understanding of mathematical ideas.
2) The ability to solve problems.
3) Techniques and skills in computation.
4) An atmosphere for creative thinking.
5) A differentiated program for individual differences.

10. Jeremy Kilpatrick, "Cognitive Theory and the SMSG Program," Problems in the Teaching of Elementary School Mathematics, ed. Klass Kramer. (Boston: Allyn and Bacon, Inc., 1970.) pp. 124-130.
A report on the activities of SMSG.

11. Patricia Pine, "Madison Project Troupers Spread Teaching Ideas," Problems in the Teaching of Elementary School Mathematics, ed. Klaas Kramer (Boston: Allyn and Bacon, Inc., 1970), pp. 130-135.
A report on the Madison Project.

12. Marshall H. Stone, "Goals for School Mathematics," The Mathematics Teacher, April 1965, 58: 353-360. Also in Problem in the Teachingof Elementary School Mathematics, ed. Klaas Kramer (Boston: Allyn and Bacon, Inc., 1970), pp. 19-33.
A review of the report of the Cambridge Conference on School Mathematics.

13. Frances Flournoy. "Relating Arithmetic to Everyday Life," Mathematics in Elementary Education, ed. N. J. Vigilante (Toronto: The Macmillan Company, 1969), pp. 98-103.
A number of suggestions are given for procedures which may be used in guiding children in exploring the mathematical aspects of everyday life and in applying the mathematical skills they are learning.

VIII. Post-Test Part A - To be turned in prior to 6th week of the quarter.
Part B - Available in testing laboratory

1. Examine the presentation of division with fractions in several textbooks. To what extent is exploration and discovery provided for in each? Describe procedures that you find which give the pupil an opportunity to explore and discover how to divide with fractions. Give specific references.

2. Look through a mathematics textbook for a grade level of your choice. Identify examples of mathematical concepts or processes that are taught with a situation interesting and significant to the pupil.

3. Choose a topic such as introducing adding fraction numbers with the same demoninator or multiplying two numbers represented by two place numerals. List the subject matter readiness prerequisite to learning each topic.

4. Read several of the suggested readings, then write short answers to the following questions:
   a) What general changes are taking place in the mathematics curriculum?
   b) What are common characteristics of the experimental mathematics programs of the last decade?
   c) How can experimentation help determine the grade placement of mathematics topics?

5. Look through some recent issues of The Arithmetic Teacher. Summarize in a short paper significant ideas which are concerned with change in the elementary school mathematics curriculum, reasons for this change, and any evidence that change are making significant improvements in the program.

6. Here are some of the topics covered in studying multiplication. Consult a current textbook series and find the order in which they are introduced. Place the letters in the proper order. Some topics may be introduced almost simultaneously. Identify source and page for each reference.
   a) Multiplication by 10: 10 x 8, 10 x 32
   b) Factors expressed by three-place and one-place numerals, with regrouping once: 2 x 364
   c) Both factors expressed by two-place numerals, with no regrouping: 43 x 21
   d) Factors expressed by three-place and one-place numerals, with no regrouping: 2 x 134
   e) Facts through 5's and their reverses: 2 x 8, 8 x 2
   f) Both factors expressed by two-place numerals with regrouping: 57 x 38
   g) Facts through 9's: 8 x 6, 9 x 7
   h) Three-place factors with no regrouping: 323 x 122
   i) Checking by interchanging the factors
   j) Multiplication with dollars and cents: 3 x $2.47
   k) Multiplication by 100 and 1000: 100 x 16, 100 x 39

   Do you find much if any difference in grade placement of b and d? of c and f? Do you find multiplication exercises such as j where dollar signs are used?

7. Marks, Purdy and Kinney present a flow chart which is useful as a framework for planning classroom activities. Below are listed the five steps of the flow chart for learning the subtraction of numbers represented by two-place numerals, with decomposition. Supply the required information for each step.*

   a) Preparation. Check and review the background skills and concepts that are prerequisite for study of the new topic. One example of such a skill or concept is given. Describe others. Place-value property: 27 - 2 tens and 7 ones.

b) Selection. Pupils improvise solutions for problems from significant situations in the environment. Each must require the new process. One example of such a problem is given. Describe others. We have 83 cents in our treasury. We plan to spend 59 cents for refreshments. How much will we have left?

c) Abstraction and organization. Experiences to discover why and how the process works. One example is given. Fill in others. Represent the sum 32 for 32 - 16 in the pocket chart, with bundles of tens and ones. See that 6 ones cannot be taken from 2 ones so that 1 ten from the tens pocket, show as 10 ones, giving 12 ones in the one pocket. Now take away 6 ones, leaving 6 ones. Take 1 ten from the remaining 2 tens, leaving 1 ten and 6 ones. Interpret as 16.

d) Fixing skills. One example of an appropriate experience is given. Suggest and describe others. Relay race. Several different subtraction examples are written on the blackboard in front of each row of seats. At the signal "Go", the first child in each row goes to the board and works the first example, then returns and gives the chalk to the next child. The first row to have all examples right wins.

e) Application. One appropriate experience is given. Suggest others. Work problems in the textbooks.

University of Toledo

Course 312:328

Module 05: Mathematics in the Elementary School - Using Manipulative Materials

Fall 1973 Revision/Dilley

312:328

Module Five

I. Department/Context: Elementary Education/Instructional Organization

II. Topic: Necessary Training for Instruction

III. Title: Mathematics - Using Manipulative Objects

IV. Prerequisites: Inquiry Modules
Learning Theory and Piaget

V. Overview: Modern learning theories suggest that children should learn abstract concepts by first manipulating physical objects.

VI. Objectives:

TPO 1. Given one of these concepts selected at random: basic addition, basic subtraction, basic multiplication, and place value, the student will describe in writing an activity for elementary school students in which Cuisenaire Rods are used to introduce that concept. The activity must utilize the unique features of the Cuisenaire Rods and involve the defining characteristics of the concept.

TPO 2. The student will describe in writing an activity for elementary school students in which a geoboard is used for one of the following selected at random.

1. Introduce the concept of angle.
2. Introduce the concept of segment.
3. Introduce the concept of area.
4. Introduce the concept of perimeter.
5. Allow students to discover a generalization.

In all cases the unique features of the geoboard must be utilized. The discovery lesson must have the following two characteristics.

1. The generalization to be discovered is not told to the students.
2. Knowledge of the generalization is not a prerequisite for the activity.

TPO 3. Given one of the following concepts selected at random: place value, addition algorithm, subtraction algorithm, multiplication algorithm, or division algorithm, the student will describe in writing an activity for elementary school students in

which the chip trading materials are used to introduce that concept. The activity must utilize the unique features of the materials and involve the defining characteristics of the concept.

TPO 4. Given one of the following concepts selected at random: place value, addition algorithm, subtraction algorithm, multiplication algorithm, or division algorithm, the student will describe in writing an activity for elementary school students in which place value blocks are used to introduce that concept. The activity must utilize the unique features of the place value blocks and involve the defining characteristics of the concept.

Activities

For TPO's 1 and 2: Sets of Cuisenaire Rods and geoboards are on closed reserve at Carver Curriculum Materials Center. Students will be supplied with self-instructional booklets and work through the activities described in them.

For TPO 3: The Chip Trading Activities kit in on closed reserve in CCMC. Students will work through self-selected activities described in the activity books of the kit.

For TPO 4: The instructors will demonstrate activities for place value blocks during regular class periods.

University of Toledo

Course 312:328

Module 06: Individualizing Mathematics in the Elementary School

Fall 1973 Revision/Sherk

312:328

Module Six

I. Department/Context: Elementary Education, Instructional Organization

II. Subject/Topic: Mathematics

III. Title: Individualizing Mathematics in the Elementary School

IV. Prerequisites: Modules 4 and 5

V. Overview: This module is designed to help you acquire the skills to be able to organize and develop curriculum materials to carry out a program of individualized mathematics instruction in an elementary school.

VI. Specific Objectives:

1. The student will be able to:

A. Describe the Instructional Programming Model for IGE in writing indicating the correct sequence of steps with 80 percent accuracy. (Model attached)

B. Illustrate each step of the Instructional Programming Model with examples from the Wisconsin Developing Mathematical Processes (DMP) program or from a comparable individualized mathematics program with 90 percent accuracy.

Activities

a. Study pp. 17-19, 25-27, and 53-65 in Klausmeier, et al. (green book).

b. Read article, Instructional Programming for the Individual Pupil in the Multiunit Elementary School, The Elementary School Journal, November, 1971, pp. 88-101.

c. Read article, The Implications of Individualized Programs for the Organization of School Staffs, James Walters, April, 1972. (Attached)

2. The student will be able to:

A. Indicate in writing points relative to the rationale role, procedures, and implementation of pre and post assessment of IGE Mathematics with 80 percent accuracy.

Activities

a. Study pp. 53-65 in Klausmeier et al., (green book).

b. Review filmstrip/tape "Performance Testing and Observation," IDEA set (orange filmstrip cannister).

c. Read the Assessment Manual from the Wisconsin DMP program.

d. Read article, Before You Individualize Your Elementary Math..... H. Clifford Clark (attached)

e. Develop a 10-20 item cognitive measuring instrument for one or two concepts/processes/skills in a mathematics area of his choice.

f. Read pp. 24-60 in "Test Construction" by Wood and/or pp 21-40 in "Evaluation in the Elementary School" by Hedges.

g. Review an elementary students testing booklet M1-M5 from the Wisconsin DMP program and trace the assessment procedure within a topic.

3. The student will be able to:

A. Prepare a critique of selected Wisconsin and IDEA filmstrips/tapes relevant to their use with a unit or school staff during the first year and subsequent years of implementing the DMP program.

B. Indicate the materials available to a staff for implementing the DMP program or a comparable program and how the materials are related to the Instructional Programming Model for IGE

C. Indicate which materials will have to be organized and/or developed by a staff to implement the DMP or other selected program.

Materials

a. Work through a DMP Sampler; will be purchased at book store or distributed to students.

b. Study and read the Coordinators Manual for the DMP program; appropriate sections of the manual will be distributed to students.

4. The student will be able to:

A. Indicate grouping patterns (learning modes) appropriate to the mathematics content and the characteristics of the elementary pupils involved in the individualized mathematics program.

Materials

a. Read Chapter 3 in "IDEA: Learning Program Handbook."

b. View filmstrip/tape "Grouping Patterns," Wisconsin R & D Center, and/or "Learning Modes," IDEA.

5. The student will be able to:

A. Indicate the roles and responsibilities of the members of the differentiated staff: principal, unit leader, staff teacher, parent aide, student aide, intern, student teacher, participants, and observers.

B. Develop a differentiated staffing pattern for the mathematics instruction in an elementary school using the IGE-MES pattern as a guide and Developing Mathematical Processes (DMP) or a similar mathematics program as the specific content.

Activities

a. Read Chapter 3 in Klausmeier, et al. (green book).

b. Read "Unit Operations and Roles" and "Principal's Handbook," IDEA, for detailed role descriptions of the Unit Leader and Principal.

c. Read Implementation Guide, IDEA, 1970.

6. The student will be able to:

A. Select one commercial learning program or kit in Mathematics and: (1) rate each print or audiovisual material as "high," "medium," or "low" in terms of its usefulness in an individualized mathematics program in an elementary school, and (2) devise a plan for use of the commercial kit or program in an individualized mathematics learning program in a school which would include (1) a brief explanation of the roles and characteristics of the staff and students, (2) assignment of staff and students for instruction and (3) allocation of space for instruction.

Materials

a. Read chapters 2 and 3 in Klausmeier, et al. (green book) with emphasis on the schematic ; diagram on page 21.

b. View the filmstrip/tape "Organized for Learning," (IDEA)

c. Use of materials in the College of Education Mathematics Laboratory.

Required Materials

Klausmeier, Quilling, Sorenson, Way and Glasrud, 1971. "Individually Guided Education and the Multiunit Elementary School: Guidelines for implementation," Wisconsin R & D Center, University of Wisconsin, $2.00. IGE Implementation Guide, IDEA, Dayton, Ohio, $3.00. IDEA Unit Operations and Roles, IDEA, Dayton, Ohio, $3.00.

Evaluation

You will have completed this module when you present in writing the ucts called for in the objectives.

The Implications of Individualized Programs for the Organization of School Staffs

by

James E. Walter

Wisconsin Research and Development Center for Cognitive Learning

A Paper Prepared For and Presented at the 1972
Conference of the National Council of Teachers of Mathematics

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Introduction

A brief review of some of the professional literature with regard to the varieties of programs for individualizing instruction and with regard to the varieties of staff utilization models leads one to the conclusion that very little effort has been given to considering seriously the implications of instruction for the organization of a school system or school building, or vice-versa. Various individualized programs have been superimposed on the traditional organization, and staff utilization models have been dropped onto traditional instructional programs. The predictable stress and strain resulting from a lack of fit between instructional programs and organizational structure has led to some very commendable and noble efforts to reduce the strain. Another result, also predictable, is that many of these innovations have been dropped because, as you have heard many people say, "they don't work."

There are many reasons for this situation. I shall mention only three which I presently consider to be major. One is that the "state-of-the-science" in organizational theory has not advanced sufficiently enough to give clear direction. The second is that the findings of a number of studies about organizations can be explained from completely different theoretical perspectives. Third, much of the research and theory with regard to organizations is related to industrial and business organizations, medical organizations, and a few governmental agencies; precious little has been done in public elementary and secondary schools. Consequently, curriculum developers and developers of new organizational patterns have not had the requisite theoretical or empirical underpinnings for generating the appropriate fit. Moreover, if the developers responsible for conceptualizing new instructional programs have not accounted for organizational concerns because they do not have the requisite knowledge, neither can professional educators be expected to have the conceptual skills

necessary for designing, under the press of the operating situation, the appropriate fit.

It is true that there has been a substantial amount of research in school settings on leadership, small group behavior, and communication processes. It is also true that these are highly related to organization. Research in these areas, however, is primarily from psychological and social-psychological perspectives. The earlier comments about the "state-of-the-science" are offered with regard to a sociological or structural perspective. While the psychological and social-psychological points of view are important to organizational health and success, a structural perspective is also needed. Individuals and small groups spend a goodly portion of their time in organizational settings and while the psychological perspective explains individual behavior, the social-psychological point of view explains small group processes, a sociological perspective is needed to explain organizational characteristics. There is some evidence that structural facts are better predictors of the behaviors of individuals and small groups in organizations than psychological or social-psychological facts. The balance of my presentation will be from a structural point of view. Moreover, the ideas I will be discussing do not have a direct empirical basis. They are rather some initial formulations which, if events transpire satisfactorily, will provide the basis for pursuing a line of research and development.

The Sociological View

As indicated earlier, the perspective of my presentation is social-structural one, as contrasted with a psychological or social-psychological one. Charles Perrow has given an excellent definition of this particular viewpoint:

> Briefly, the structural viewpoint considers the roles people play, rather than the nature of the personalities in these roles. It deals with the structures in which roles are performed--the relationship of groups to each other; . . . the degree of centralization or decentralization; . . . the values, expectations, and goals of the organization and of groups within the organization.

In other words, the structural viewpoint is concerned with the patterned relationship of roles (not people), and subunits of the organization. This perspective also views organizations as open systems; that is, it is concerned with the influence of the environment, personnel recruitment, the role of technology, and other input dimensions.

A general systems view has been alluded to, but needs further clarification. The systems view suggests that organizations have inputs which flow through a structure (or throughput) as they are transformed and which in turn affect the structure and finally result in outputs. On the input side are such things as money, personnel, technology, pressure groups, materials, and in the case of schools, clients. The structure of the organization is described by such concepts as complexity (the number of specialties), centralization of decision-making, formalization (codified job descriptions and enforcement of regulations), and stratification (status and reward systems). On the output side are such things as the finished product (in the case of schools, the educated child), operational and publicly stated goals of the organization, job satisfaction, production, efficiency, and adaptiveness.

In the balance of this presentation, I'll be devoting attention to concerns related to the technology utilized by the school, its relationship to certain structural aspects, and the consequences for adaptiveness.

The Technology of Education

By technology I am not referring exclusively to such things as movie or slide projectors, television equipment, computers, or other arrangements of hardware or software. These are only one aspect of technology. I am referring to the means by which the task or work of the organization is carried out. Charles Perrow has defined technology and I have paraphrased it in order to make it applicable to education:

> With regard to education, technology refers to the learner and teacher activities, the materials and media, and the assessment tools and procedures which the professional educator may specify for guiding a particular child's educational experiences.

In other words, by technology we are referring to all of the things teachers do and use when they are performing what is commonly called teaching or creating a learning environment. The focus of these activities is the children.

One can conceive of a number of stages which a school staff may go through in the process of planning and implementing a learning environment.

The first stage is a perceptual one. That is, as teachers look at their students they tend to perceive them in certain ways. These perceptions are generally very gross. For example, given the information or knowledge that the students come from an inner city or rural environment characterized by poverty, the teachers may perceive the students as being discipline problems, academically slow learners, and probably not highly motivated for academic achievement. Another perception of the same population of students is that each student is in some important ways different from all the other students. Some are more advanced academically than others and some are less advanced. Some are more serious discipline problems than others; some are less. These

perceptions tend to be articulated in generalizations and are based on past experiences including professional training. As a result, the teachers begin to develop certain kinds of expectations for these students.

The second stage is an analytical one. Following the initial perceptions, teachers must conduct some kind of analysis preparatory to planning. Analysis can, of course, be conducted at several levels. At the most superficial level, analysis may not be much more than the initial perceptions. At the least superficial level analysis is a careful development of a comprehensive portrait of each child. There are, of course, many intermediate levels of analysis, each of which is characterized by the extent to which exceptions among the children are identified. For example, at one intermediate level students may be identified as fast, average, and slow. At another level the students may be identified in terms of the skills or concepts they know or don't know. There may also be a wide range of information utilized in the analysis stage. One kind of information is the initial perceptions which, as we have said earlier, may be generalizations poorly articulated and not very systematically organized. Another kind of information is standardized test results. Other kinds of information are the past experiences with the child, work samples, diagnostic tests, and performances of the child on worksheets and in exercise books. Another very important kind of information is derived from the best judgements of the teachers with regard to the student's level of motivation, style of learning and other similar characteristics. The more systematically these kinds of information are gathered and used consciously, the more likely will teachers be able to make important distinctions between children. The important result of this analysis stage is the number of exceptions among students which the teachers may identify. As the analysis proceeds through several levels, the conclusions or decisions become more provisional since the data is less

firm and intuition and best judgement are given more weight.

Parenthetically, it should be noted that perception and analysis are to some degree interdependent. That is, perceptions tend to determine the level of analysis undertaken by the teachers and the results of the analysis tend to change perceptions.

The third stage is a planning one. Once the analysis has been completed, planning is undertaken to specify an appropriate instructional program for the students. The more exceptions that are identified, the more programs are required. The fewer the exceptions, the fewer the programs. The fewer the programs the more the number of children in any given program. Thus the programs are standardized and the instructional procedures routinized. If on the other hand there are more programs, there will be fewer children in each program. Thus, since programs are designed for exceptions, programs are not standardized and activities are non-routine.

For example, let us assume that children in a given school are perceived as being either fast, average, or slow in terms of their ability to progress academically. On the basis of that perception the analysis consists of administering a standardized achievement test to all the students. The range of scores is then simply divided into thirds, and the students are grouped accordingly. The planning of an instructional program in such a setting is relatively simple. What is required is three programs with related sets of materials. Since most often the program is incorporated in the materials, the basic task is to identify appropriate materials. The materials can then be used for a number of years with many children. In this kind of a setting the procedures are relatively standardized and routine.

In another example let us assume that children are perceived as being in some important ways as distinctive from one another. On the basis of that

perception the analysis consists of a wide variety of information of the types discussed earlier. Academic achievement is determined in terms of skills and concepts which the children know or do not know. Work samples, systematic observations, knowledge of past performances, and best judgements about level of motivation, style of learning, and other characteristics are considered systematically and consciously in the analysis. As a consequence, many exceptions are identified among the students and many programs will have to be planned. The conclusions reached about any one child are provisional and, therefore, the programs cannot be standardized. Moreover, while it is logical to assume that once analysis has been completed the treatment or instructional program automatically follows, I should like to suggest that such might be the case in standardized and routine settings but not in non-routine settings. Where the analysis results in many exceptions and is provisional and the treatment subject to change, a search process to identify appropriate materials, activities, and so on must follow analysis. In other words analysis serves only to narrow the range of appropriate alternatives. Instructional programing based on these perceptions and analysis is thus a non-routine effort.

While it may seem that I have digressed from a discussion of technology, I have spent some time discussing these stages to provide the bases for suggesting that instructional technology in its broadest sense can be conceptualized along a continuum. At one end of the continuum are routine technologies and at the other end are non-routine technologies.

My own inclination is to view traditional age-graded instructional program as being based on a routine view of learning and instruction and to view some, not all, individualized programs as based on a non-routine view. A better distinction, however, is not whether programs are labeled individualized or traditional, but rather the implicit assumptions which are the bases for the

programs. Are children perceived as exceptions from one another, or are exceptions only in terms of very gross characteristics? As they analyze or assess the children in order to make instructional decisions, is the final portrait of the child based primarily on the information derived from standardized tests, check-up quizzes, and a few work samples or does it consciously and systematically include some guesswork and some provisional conclusions about the child?

In the context of these rather rough criteria any instructional program which limits decision-making input primarily to written responses by children and places children in certain groups or tracks on a more or less permanent basis is derived from a perception of teaching as a relatively routine matter. Such programs would include age-graded basal series, textbooks, or programmed instructional materials. A non-routine perception, on the other hand, results in programs which involve children in a much different fashion. Based on an assessment of the children in terms of what they know, their motivational level, some provisional conclusions about their learning style and a host of other characteristics, children may be involved in independent study, adult-child tutoring, small ad-hoc groups, peer-tutoring settings, and several other kinds of arrangements with an excellent supply of a variety of instructional materials and media. The key concern, of course, is the manner in which analysis or assessment is carried out.

Not being an expert on instructional programs, I have undoubtedly over-simplified the situation. None the less, I believe that the notion of a continuum (routine to non-routine) holds, and that this particular perspective provides a framework for discussing organizational structures.

Technology and Structure

I have already alluded to the notion that there is a relationship between

an organization's technology and the organization's structure. There are many ways of describing those phenomenon which are generally called organizational structure, and, of course, there are many dimensions of structure. For the purposes of this presentation, I shall refer only to a few of these dimensions.

One dimension of concern is centralization, or the extent to which decision making is centralized or decentralized. Highly related to centralization are control of the work effort (i.e. mechanisms to assure predictability of performance) and coordination (i.e. the mechanisms which assure that things are accomplished).

In settings where the work to be done is perceived as routine, decision making is centralized; control is relatively tight; and coordination tends to be programmed. In school settings these characteristics are noted in the situations where policy and policy-implementation decisions are made by the principal and/or someone in Central office, and where staff members have little if any influence in the decision. Furthermore, in these settings the decisions left to teachers are prescribed within certain bounds. That is, certain limits are set on the discretion teachers have with regard to the decisions they are allowed to make. Control and coordination are most easily handled through the textbook or syllabus which is provided the teachers.

Not all individualized programs are non-routine. Those individualized programs which make heavy use of programmed instruction are clearly based on an assumption that learning is relatively routine. Programmed materials account for the child's pace or rate of learning, and instructional decisions are highly centralized, not in positions or roles in the organization, but in the program. Control and coordination are also achieved in the way the materials are programmed.

Where the work to be done is perceived as non-routine, the situation changes.

Because teachers are dealing with uncertainty, they will need freedom, discretion, influence, and authority in order to take corrective action should the instructional program for a child be inadequate. In this situation decision-making becomes decentralized and control will be much less tight. Coordination of activities will be handled through meetings among those carrying out the programs. This kind of coordination arises out of a higher interdependency among the teachers.

Another aspect of structure is complexity. Hage defines complexity in terms of the specialization in an organization. The more non-routine the technology, the more likely one is to find more specialties in the organization and the more cooperation among teachers to carry out the various tasks required to carry out the instruction. The reason for greater specialization is that the organization needs to deal more effectively with the uncertainty presented by the nature of the situation. The organizational response to this situation can be in one of three ways. One way is to bring in more specialists. To the extent that schools have therapists (speech and hearing, for example), psychologists, guidance personnel, even teacher aides, they are reflecting a more non-routine perception. This response can be carried to the point where there is a very highly differentiated staff. The consequence of a highly differentiated staff is to break the organization's work into several discrete tasks in an attempt to reduce uncertainty and thus routinize the technology. Another response is to give the staff more training so as to increase their ability to deal with uncertainty. The third and most common response is some combination of the previous two. That is, more specialists are brought into the building particularly in the form of paraprofessionals and at the same time a more extensive staff development program is carried out. This staff development effort will not necessarily be provided to all teachers, but only to a few for a particular specialty the building needs. Other teachers will acquire other specialties.

These increases in specializations will likely result in team efforts to carry out the work. Since no one teacher will have all the specialties needed to perform the tasks, and since no one teacher will have the time to perform all the tasks identified in a non-routine technology, a team kind of organization will result so that all the specialties can be utilized more fully, and all the tasks can be carried out.

In the context of these notions one can see why the fit between the conventional school organization and the age-graded approach to instructional materials has been a comfortable one. The basic assumption has been that a child of a certain age automatically has certain characteristics and the programs contained in graded textbooks and syllabi were designed on the basis of these assumed characteristics. With the advent of standardized tests to provide better assessment information about children, educators were able then to create homogeneous groups. The realities of the organizational structure, however, place some limits on the extent to which children could be "grouped" or "tracked." Because of these limits a common response was to have a fast group, an average group, and a slow group. With regard to instructional programs, only the materials changed very much; grade level designations were left off many textbook series and text series in three levels of difficulty were made available in the classrooms. Even so, educators realized that individualization had not been achieved. The next response was non-graded programs of various kinds which, however, amounted to either subdividing the content of instructional programs into more discrete components such as twelve steps for the first three primary grades or into highly programmed materials. Non-graded programs still assumed that the child could be assessed at a relatively superficial level and that once assessed the child's instructional program could be easily prescribed; a rather routine view in my opinion. With these attempts : individualization the fit between the instructional program and the organiza-

tional structure became more strained. The question arose about what to do with the child who did not progress through the program fast enough to be promoted at the end of the year or the child who completed the program before the end of the year. The fast child could be given enrichment activities, but the slow child really presented a problem. He couldn't be kept back too long because of socialization problems. Programmed materials wherein children interacted mainly with printed materials were not satisfactory, not only because of the problems related to students who completed the materials more rapidly than the rest or more slowly than the rest, but also because they were simply too dull and boring when used for extended periods of time.

There is no evidence that would indicate whether the strain between the organization and the instructional program is due to incorrect perceptions about the nature of learning or inappropriate organizational structures. They are both involved and interrelated. In a simplistic fashion I have already alluded to what I consider an incorrect perception about creating learning environments. Organizationally, the problem lies in the general practice of centralizing decision-making and giving very little discretion to those who must work directly with the children. Control and coordination are either programmed into the instructional materials or in policies over which the teachers have very little influence. In short, if school district administrators and teachers see teaching and creating learning environments as involving a non-routine technology, they will have to change the organizational structure so that those who work with the children have more discretion, more control over their tasks, greater influence in policy formulation, and more latitude in coordinating their efforts. Because of the uncertainty involved in their decision-making, and the specialties required to provide appropriate instructional programs, I believe a team or collegial kind of organization is required.

Structure and Adaptiveness

A school which perceives its tasks as requiring a non-routine technology and has organized its structure accordingly will be, I suggest, more adaptive.

Why should a school be adaptive? One reason is that the environment of the school is constantly changing and it is necessary for the school to adapt to new social conditions. Another reason is that new knowledge about learning and instruction is constantly being generated and such knowledge presumably can contribute to improved learning by children. A school must be adaptive to assimilate this new knowledge. A third, and perhaps more important, reason is that any attempt to individualize learning requires that instructional programs be adapted for each child or at least for small groups of children who are as nearly alike in a number of dimensions as it is possible for them to be. Moreover, if one develops individualized programs from the perception that learning and instruction are non-routine, instructional programming decisions are essentially provisional ones subject to change should the program prove to be inadequate. In such an uncertain situation adaptiveness is essential in order to institute corrective action on the spot. Without such adaptiveness some of the value of individualization is lost.

Given the non-routine technology as we have described it, in a decentralized decision-making team as we have described it, one would expect that adaptiveness would increase for the very simple reason that more opinions, more influences, a wider variety of inputs from a wider range of perspectives are being entered into the decision-making setting. Not only do these conditions tend to prevail, but also there are a wider variety of specialties that can more flexibly be applied to the situation. In this kind of dynamic setting some of the findings from small group research are applicable; that is, where there is generally open discussion, ideas tend to generate other ideas and

these in turn are modified and improved upon. In highly centralized decision-making situations, idea generation tends to be limited.

The Evidence

Although minimal, there is some support for these formulations. For the past several years the Wisconsin Research and Development Center for Cognitive Learning at the University of Wisconsin has been focusing its efforts on conducting research, development, and implementation of a system of Individually Guided Education. At the present, efforts are concentrated at the elementary school level although plans are being prepared to extend the system to secondary levels.

Without going into all the details, it suffices to point out that Individually Guided Education is a comprehensive, systematic approach to creating an alternative educational system. One of the basic elements of IGE is the model for instructional programming which provides the basis for the development of curriculum materials. Another important component is the organization called the Multiunit Elementary School. These components, the instructional programming model, curriculum materials, the Multiunit school, and other components, are assumed to be interrelated and interdependent. Although it has never been explicitly or, for that matter, implicitly stated that IGE was based on the assumption that creating learning environments is essentially a non-routine technology, I, from my organizational perspective, characterize it as such.

Given the non-routine nature of IGE, what impact has been made on the organization? Roland Pellegrin of the Center for the Advanced Study of Educational Administration at the University of Oregon collected an extensive amount of data on the organizational characteristics of the Multiunit school. With regard to decision-making, or centralization as I have used it in this presentation, Pellegrin found that in the conventionally organized control

schools the teacher and the principal have limits set on their discretionary authority. These limits are set by the district curriculum committee and by central office subject matter specialists. In the Multiunit school, however, he found that the evidence is overwhelming that decision-making has shifted to the unit (or team) faculty. The faculty has emerged as dominant in the decision-making.

In other words, where the technology is non-routine because the children are seen as non-uniform and the search process involves a high degree of experimentation and uncertainty, discretion will be higher for those who are closest to the children. Coordination is handled through the unit (team) meetings which meet regularly on school time, and teachers indicated a high amount of interdependancy; that is, they need each other to get their own work done properly.

With regard to complexity, or the use of specialties in the organization, Pellegrin found that Multiunit teachers were more likely to specialize not only in conventional ways such as by teaching ability groups or subject matter, but also and more importantly he reports, new and often novel kinds of specializations are beginning to emerge in the units. In other words, not only were teachers assuming responsibilities for leadership in reading instruction, for example, but the teachers in the unit have been known to take the responsibilities for one teacher while that teacher did some library research to find new teaching materials or methods which could be communicated back to the unit. Such a procedure provides new input to the unit and gives that teacher a new specialty and leadership in the specialty.

With regard to adaptiveness Pellegrin did not collect any data. Therefore there is no empirical evidence that Multiunit schools are more adaptive because of these structural changes. Self report data and observational information would indicate that Multiunit schools are somewhat more adaptive.

Finally, one of the Center's curriculum products, the Wisconsin Design for Reading Skill Development, was field tested in a number of conventionally organized schools. Since the reading program is based on the principles of IGE, we were interested to see what impact the implementation of the Design had on the organization of the school. To varying degrees, conventionally organized, self-contained age-graded schools tended to change their structure and become more like Multiunit schools.

Summary

In an overly simplistic fashion, I have attempted to paint in broad strokes how an organizational theorist attempts to relate the impact of instructional programs on the organizational structure of schools. Starting from the perception that the process of creating learning environments requires a non-routine technology characterized by uncertainty and provisional decision-making, the notion that a decentralized, more complex, structure is required was postulated. This structure was, in turn, hypothesized to result in increased adaptiveness of the organization. Adaptiveness is important for a variety of reasons but primarily because adaptiveness is essential for maintaining individualized programs.

References

1. Jerald Hage, "An Axiomatic Theory of Organizations," Administrative Science Quarterly, 10: 289-320, 1965.

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5. Charles Perrow, "A Framework for the Comparative Analysis of Organizations," American Sociological Review, 32: 194-208, 1967.

6. Charles Perrow, Organizational Analysis: A Sociological View, Belmont, California: Wadsworth Publishing Company, Inc., 1970.

A MODEL FOR ORGANIZING THE CURRICULUM FOR INDIVIDUALIZED LEARNING PROGRAMS

I. Identify general components
   - A. Select curriculum area
   - B. Identify characteristics of target population
   - C. Set general objectives for selected curriculum area

II. Identify concepts/processes/skills to be included in the curriculum
   - A. Select concepts/processes/skills
   - B. Critique concepts/processes/skills
   - C. Finalize concepts/processes/skills to be included

III. Prepare assessment materials
   - A. Select, adapt and/or write specific objectives for each concept or group of concepts
   - B. Select, adapt and/or write items appropriate to the objectives
   - C. Critique tests
   - D. Tryout tests
   - E. Analyze test data
   - F. Revise tests

IV. Identify instructional groups and materials
   - A. Utilize assessment scores along with student's preferred learning style and mode to group students for instruction
   - B. Identify instructional materials appropriate to the general and specific learning objectives and preferred learning style and mode of students
   - C. Develop a resource file for teacher/student use.

V. Implement the individualized curriculum program and identify a plan for its ongoing evaluation and modification

Figure 1

Sorenson/72
University of Wisconsin-Eau Claire

BEFORE YOU INDIVIDUALIZE YOUR ELEMENTARY MATH . . .

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So you're going to individualize your elementary math program! This is a popular notion being considered by many teachers today. Individualization of instruction is a rapidly growing trend in elementary school mathematics. It is viewed by some as a panecea to the problems of teaching arithmetic.

Not every program that sets out to be individualized is a success. In fact many classroom instructors attempting to individualize mathematics are experiencing frustration and failure. Some teachers have tried to individualize mathematics by simply turning each child "loose" in his regular text to work at his own pace. With slight variations, this approach continues to be a popular practice in the name of individualization. Such shallow thinking is responsible for many of the failures teachers are experiencing today.

A few days ago I visited a classroom where such a program was in operation. The class consisted of approximately thirty sixth-grade students, each working at his own rate in a sixth-grade textbook. Answers had been duplicated and were available for periodic checking by the students. At the end of each unit in the text an individual test was administered to determine if a student were ready to proceed to the next section of the textbook. Needless to say, several problems were apparent. Neither the teacher nor the students were satisfied with this program.

The purpose of this writing is to discuss these problems and to make suggestions for individualizing instruction in elementary school mathematics. Five basic areas of consideration will be discussed with suggestions for you to consider before you individualize your elementary math program. If your plan includes techniques which compare favorably with the following five check points, your chances for success will be greatly improved.

I. PREPARE INSTRUCTIONAL OBJECTIVES

Preparing instructional objectives is one of the most important steps in planning to individualize instruction. It is here that a teacher must decide what a student is expected to learn. Mager stated that a teacher will function in a fog of his own making until he knows just what he wants his students to be able to do at the end of instruction.[1]

Two major functions of instructional objectives are to (1) guide the teacher in designing and planning instructional activities, and (2) facilitate evaluation procedures after instruction.

Instructional objectives for elementary school mathematics might be categorized by topic, such as addition or multiplication, and sequenced according to level of difficulty. By clearly defining the instructional goals for each mathematical topic the teacher is better able to select appropriate content, materials, and methodology. As instruction proceeds, a student's performance is evaluated according to the selected objectives. In this way a

a teacher will know if goals are reached.

II. DETERMINE THE INSTRUCTIONAL NEEDS OF EACH STUDENT

No program can be individualized without careful pre-assessment procedures to determine what instruction is needed. Based on the specific objectives stated for each mathematical topic, the following questions must be answered before a student begins instruction.

1. How much of what is to be learned is already known?
2. Does the student have the necessary capabilities for the instruction to follow?
3. What prerequisite skills must be mastered before beginning the the instruction?
4. What skills may be omitted?
5. What specific instructional activities should be prescribed for each student?

Answers to the above questions may be obtained through the use of placement and diagnostic tests as well as informal methods. Let us consider each of the following:

1. PLACEMENT TESTS: A placement test covers an entire topic of arithmetic, e.g., addition. It enables a teacher to establish an achievement level in each topic of arithmetic for each child. (A battery of such tests were developed under the direction of Dr. Richard Cox in connection with an individualized math program undertaken at the Oakleaf School in the Baldwin-Whitehall School District near Pittsburg.) Several other commercial achievement tests are available.

2. DIAGNOSTIC TESTS: After the level of achievement is established through placement tests as listed above, it is necessary to determine the specific operations and skills a student cannot perform. A diagnostic test identifies specific weaknesses in performance. It should be administered at the first level in which the placement test indicated lack of competence. Performance on the diagnostic test forms the basis for the instructional assignments to follow.

3. INFORMAL METHODS: Teacher observation of a child's daily work offers an excellent source of information about a student's performance in arithmetic. Interviews with previous teachers, anecdotal records, permanent record folders, etc., can also assist in making an assessment of the student's progress and needs. These sources are especially helpful at the beginning of the year before formal testing can be accomplished.

The sixth grade class mentioned earlier had not been carefully pretested, nor had any attempt been made to pinpoint specific weaknesses in arithmetic performance. In short, the teacher knew very little about the ability or deficiencies of these students. It was therefore impossible for her to know the instructional needs of each child.

III. USE APPROPRIATE INSTRUCTIONAL MATERIALS

Appropriate instructional materials must be used after determining a student's needs. It is no secret that there exists a wide span of ability

and achievement in a class at a given grade level. A study reported in the Sixty-first Yearbook of the NSSE indicated that students in the seventh grade varied in mental ability from grades two to eleven and in achievement from grades four to eleven.[2] An individualized program must use materials geared to meet these ranges in both ability and achievement.

In the case of our teacher discussed above, each student was studying from the same edition of a sixth-grade text. While the students were on different pages, this difference was insignificant in relation to the actual range of needs. Some students were capable of working only at a primary grade level. Meeting the individual needs of a class is not accomplished by being a few pages apart in the same text. Materials must be used which are appropriate to the instructional needs of each student. Nothing short of this will do if genuine individualization is to be achieved.

This brings up one of the biggest problems involved in individualizing instruction. The problem is finding appropriate instructional materials. Certainly basal arithmetic textbooks as published by most major companies leave much to be desired when using them as individualized texts. In the first place, these texts were not written for such a purpose. The dominating philosophy of the past decade has been "discovery" through interaction with other students and the teacher. Most basal arithmetic texts reflect this philosophy by being filled with page after page of rationale requiring teacher guidance and discussion to gain its full value. The idea that these books can be used effectively as self-directive programmed texts is questionable. Too often, the slow student becomes bogged down with difficult reading. A fast student may skip the reading pages, being accountable only for problems listed in the answer book. Thus, much of what the authors had in mind for developing mathematical ideas through discussion and discovery is omitted. Added to these problems is the fact that basal arithmetic texts are clearly identified by grade level code, a concept supposedly non-existent in a continuous progress program.

The need for specially designed individualized materials is acute if this instructional pattern is to succeed in elementary school mathematics. Several attempts are being made to modify existing materials. Some schools are cutting up the texts and placing them in folders. Others are re-writing the teacher's manual to include pre-tests, post-tests, and enrichment materials. Experimental programs are attempting to develop new individually prescribed materials. In spite of these efforts, it is a difficult task for a teacher to find a thoroughly satisfactory set of materials for this type of program. Hopefully, this will change in the near future.

IV PROVIDE FOR GROUP INSTRUCTION ON MAJOR CONCEPTS

Too often programs of individualized instruction are programs void of significant instruction. In the classroom discussed above the teacher was asked when she taught. "As they need help they come to my desk," was her reply. The idea that the typical classroom teacher can furnish every child all of his math instruction on an individual basis at the moment of need is not feasible. Most children need more than one minute of instruction per day, a possible limit in a solely one-to-one approach. In addition, much can be gained when children have an opportunity to interact with each other in discussing, explaining, and sharing mathematical ideas.

Teachers should provide small group instruction on major concepts of common need. Economy of time dictates that certain basic concepts are best taught in groups. To do otherwise would be to give instruction so diluted by pressure of time that it would be diminished in value.

The overall grouping pattern used by a school may help reduce the range of achievement in a particular class and enhance small group instruction. A truly non-graded school seeks to identify and instruct small groups of students functioning at approximately the same level. INDIVIDUALIZED INSTRUCTION CERTAINLY DOES NOT PRECLUDE GROUP INSTRUCTION WHENEVER POSSIBLE.

In any event, see to it that your individualized math program has provision for adequate teacher instruction. This has been a major shortcoming of many individualized programs. After all, children deserve and need more than a correspondence course in arithmetic.

V. USE A PLAN OF CONTINUOUS EVALUATION AND REMEDIATION

Learning mathematics is greatly facilitated when the learner can check the correctness of his responses immediately after they have been made. Much is lost if the reinforcement is delayed too long. A good program of individualized instruction must reflect this assumption by providing continuous evaluation and remediation.

The sixth graders previously discussed completed several pages before checking their answers. To them, checking was a tedious necessity imposed by the teacher. It was not an active part of the learning process. In one case a student completed a whole unit of multiplication using the operation of addition. The printed instruction, "Find the product," had little meaning to him. It was not until several days later that his mistake was discovered.

Specifically, here are some guidelines in evaluation for your consideration.

1. The major purpose of evaluation should be to improve the learning process.
2. The system should provide continuous feedback of errors enabling a student to immediately identify his mistakes and correct them.
3. A student must be willing to recognize when he needs help and must be able to obtain it without delay.
4. The system should have built-in check points whereby a teacher can frequently assess the progress and needs of each child. (Included is an effective record keeping system.)
5. Through effective evaluation, instruction continues to be offered at an appropriate level for each student.
6. Students, teachers, and parents must consider evaluation as an integral part of the learning process.

One cannot deny that individualizing instruction in elementary school mathematics is a significant trend with potential value. Tailoring instruction to fit the needs of a learner must as a necessity be an oprimum goal in education. Let us remember, however, that this goal is not to be achieved without careful consideration of the problems discussed above. The five check points discussed in this writing should prove helpful in planning such a program.

Footnotes:

1. Robert F. Mager, Preparing Objectives For Programmed Instruction. San Francisco: Fearon Publishers, 1962, p. 3.

2. "Individualizing Instruction," The Sixty-first Yearbook of the National Society for the Study of Education. Chicago: University of Chicago Press, 1962, pp. 165-168.

Article printed from School Science and Mathematics, November, 1971, pp. 676-680.

University of Toledo

Course 312:328

Module 07: Children's Literature:
Folk Literature

Fall 1973 Revision/Moir

312:328

Module Seven

I. Department/Context: Instructional Organization

II. Subject/Topic: Necessary Training for Instruction

III. Title: Children's Literature: Folk Literature

IV. Prerequisites: 312:324

V. Overview/Rationale:

Traditional, or folk literature represents that body of literature that evolved over many generations from the oral tradition. Folk literature may be viewed as "the accumulated wisdom and art of simple everyday folk in the broadest sense of the work, (folk literature) includes susperstitutions, . . .songs, old tales, verses, fables, myths, legends, and epics. (Folk Literature) is sometimes called the 'mirror of a people.' It reveals their characteristic efforts to explain and deal with the strange phenomena of nature; to understand and interpret the ways of human beings with each other; and to give expression to deep universal emotions -- joy, grief, fear, jealousy, wonder, triumph." (Arbuthnot, Children and Books: p. 138)

Perhaps because of the directness of the literary form of the folk tale; perhaps because of the appeal of magic and/or unusual imaginary characters and events in the stories; or perhaps because there is a universal appeal to the basic humanity of all cultures evident in the stories, folk literature has always held a special place in children's earliest literary experiences and are often best remembered by adults. In any event, during your reading in this section you may find or rediscover the enjoyment felt by young children as they read or hear examples from the large body of works that make up this area of children's literature.

Because folk literature was created, modified, and enjoyed by "simple everyday folk," it is not surprising that the tales should reflect the basic human conditions of that group of people. The modern audience, therefore, can learn--directly or by inference--much about that culture: how they made their livings, cared for the family group, ordered their society, governed themselves, worshipped, or explained their natural surroundings. This is true for the young child as well as for the anthropologist. Your reading and thinking during this phase of the module should focus on discovering how a particular group of people responds to the common human condition in a culturally unique fashion. In short, folk literature provides a way of "knowing" other cultures--a way different from texts and encyclopedias.

VI. Objectives:

1. The student should be able to discriminate examples of folk literature from other types of literature for children.

2. After reading three anthologies of folk tales from a country or culture he selects, the student will identify in writing from the stories at least fifteen characteristics of that culture or country, citing sources within the stories which identify or suggest each characteristic.

VII. Treatment:

1. Read one of the following sources:

   a. Huck and Kuhn, Children's Literature in the Elementary School, pp. 156-202.
   b. Carlson, ed., Folklore and Folktales Around the World, pp. 3-21.
   c. Smith, The Unrelectant Years, pp. 45-63.
   d. Arbuthnot, Children and Books, pp. 138-183.

Each of these chapters provides the reader with a broad overview of the areas of folk literature, the types of tales, and collections and anthologies available for use with children.

2. Read Nelson: A Comparative Anthology of Children's Literature, pp. 181-206.

This brief section includes nine "Cinderella stories" from different cultures throughout the world. As you read each of these stories, note the ways in which each culture is reflected in (a) form, (b) language, (c) family relationships, (d) social organization, (e) religious outlook, (f) value system, and/or (g) customs.

3. Attend at least one seminar on folk liaterature for children. Bring with you questions, ideas, and notes based upon your reading.

VIII. Post-test

After you have completed the readings and have attended the scheduled seminar(s), ask your instructor for the post-test materials.

University of Toledo

Course 312:328

Module 08: Children's Literature:
Realism and Fantasy

Fall 1973 Revision/Moir

312:328

Module Eight

I. Department/Context: Instructional Organization

II. Subject/Topic: Necessary Training for Instruction

III. Title: Children's Literature: Fantasy and Realistic Fiction

IV. Prerequisites: Module 7

V. Overview/Rationale:

This module will focus on contemporary books classified as either fantasy or realistic fiction.

Fantasy deals with those books in which reality is suspended. "The special quality of fantasy is that it concerns things that cannot really happen or that it is about people or creatures who do not really exist, yet within the framework of each book there is a self-contained logic, a wholeness of conception that has its own reality." (Arbuthnot and Sutherland, Children and Books, p. 210) The fanciful books which you will read will bring you in contact with imaginary worlds peopled by ordinary beings who seek answers to universal questions. In other instances, these worlds will be peopled by animals who talk and react as humans do. You'll also have the opportunity to explore the world of science fiction.

Those books classified as realistic fiction may be historical or contemporary. Historical fiction recreates people, places, and problems of the past. "The way characters speak and dress must be right for the historical period in which they live; background information about social customs, prevalent ideas, and concurrent events should be accurate both for the sake of informing the child correctly and for the versimilitude they give the story. It is in the small details of everyday living that the past is made understandable." (Arbuthnot and Sutherland, Children and Books, p. 494)

Contemporary realistic fiction deals with the problems faced by all children today - drugs, sex, divorce, war, death, etc. Some, of course, are more realistic than others. Many of these books will force you to think about the world in which our young people are growing up.

Your primary responsibility is to familiarize yourself with many of these books. Plan to do a great deal of reading! Many suggestions have been included on your reading list. Take time, too, to think about how you would use these books effectively with students.

VI. Objectives

1. From a given list of books, the student will be able to catagorize those which are (1) contemporary realistic fiction, (2) historical fiction, and (3) fantasy with 90% accuracy.

2. The student will be able to compare and contrast a minimum of three specified books in relation to their development of at least one of the following literary elements: (1) theme, (2) plot development, (3) characterization, (4) setting, and (5) style. The student will be evaluated on the basis of specified criteria.

3. The student will be able to evaluate a selected book on the basis of criteria suggested in Lillian Smith, Arbuthnot and Suthe rland, and Huck and Kuhn.

VII. Treatment

1. Read one of the following selections:
   (a) Arbuthnot and Sutherland, Children and Books, pp. 210 - 265, 420 - 478, 494 - 525.

   (b) Huck and Kuhn, Children's Literature in the Elementary School, pp. 215 - 263, 295 - 322, 338 - 376.

   (c) Smith, Lillian, The Unreluctant Years, pp. 130 -177.

These professional texts will suggest criteria for the evaluation of fantasy and realistic fiction which may be applied to the books you are reading.

2. Read at least 20 books from the suggested list. Be prepared to discuss these in light of the suggested criteria and in relation to the literary elements outlined in Objective 2.

3. Plan to attend at least four scheduled seminars on realistic and fanciful fiction. You should bring: (1) A list of the books you have read, (2) Examples of the criteria you plan to apply.

MUCH READING IS INVOLVED! PLAN TO BEGIN IMMEDIATELY!

VIII. Post-Test

You may pick up a copy of the post-test from your instructor after you have completed the reading.

University of Toledo

Course 312:328

Module 09: Language Arts:
Diagnosing Reading
Strengths

Fall 1973 Revision/Moir

312:328

Module Nine

I. Department/Context: **Instructional Organization**

II. Subject: **Necessary Training for Instruction**

III. Title: Diagnosing Reading Strengths

IV. Prerequisites: Completion of Children's Literature Modules (or to be completed concurrently)

V. Rationale/Overview

A. Reading is a language process. Since children have mastered the phonological language system at a level approaching 100% competency by the time they enter school; since they have control of nearly 90% of the grammatical constructions by the time they enter school; since they have a speaking vocabulary in excess of 4000-5000 words by the time they enter school (some experts reckon the child's listening vocabulary at in excess of 20,000 words), then we can begin reading instruction from a position of strength and build upon what children already know. This is in opposition to the traditional view that children know nothing about reading. This suggests that we can do away with such chores as "teaching children their sounds." This suggests that we can avoid the rote and repetition of look-say methods that must bore first grade teachers to death.

B. Reading is a meaning-gathering process. The purpose of reading, as any intelligent adult would tell you in a minute, is that there is something worth reading, that there is some meaning in what they are reading that they very much want to gain. Yet we deny children this same right because "they have to learn sounds before they can learn words; and they have to learn words before they can read sentences." Further, we do not value their choices of what to read, and insist they read what some editor in Chicago or some author in Portland, Maine says they should read, and when and in what order. To capstone this indignity,

we insist that children read every word, pronounced the "right" way, on the assumption that unless they do, they won't comprehend it. As adult readers, we know better. One has only to examine his own reading behavior to know that it is sufficient to read only some of what is in print to get the meaning of what is read (it is also more efficient).

C. Reading is an inquiry-process. The written language, appearing linearly as it does in print, provides cues or data for the student to form hypotheses (or guesses) about the meaning from the phonological and sytactic structures as he scans the page. The same inquiry behavior takes place as we listen and process oral language. The proclivity of children to do this--a skill derived from their pre-school language learning experiences--is another strength upon which we can build. To get at this, the language that children read should be whole language, not words in isolation, or, worse yet, blends or phonemes (such practices are commonly referred to as the "hiss and spit" methods).

D. Reading is not an exact process. It is an approximating act. It is a predicting or guessing act. Oral reading procedures have done more to cripple developing readers than nearly any other phase of reading instruction. Oral reading does provide a useful "window" to look through to make inferences about the individual's ability tc use language cues to gain meaning. It is, therefore, on this view of the usefulness of oral reading, that effective diagnosis can take place to identify:

1. what reading strategies the reader is able to use successfully; and
2. what reading strategies the reader needs in order to become a more proficient reader.

Skillful diagnosis is the result of much experience with diagnostic procedures and many children. It also is the result of a clear understanding of what the reading process is, and what instructional alternatives are available to assist the child's efforts to become more proficient at the reading act. Implicit in the process of diagnosis are the student's ability to (1) listen accurately; (2) record accurately the reading behavior of the child; (3) analyze the data consistent with the student's understanding of the reading process; (4) evaluate the data; and (5) prescribe appropriate instruction based on the evaluation. Too often teachers have been guilty--knowingly or unknowingly--of teaching what children already know, or what children are not prepared to learn because they do not have prerequisite concepts or skills. The purpose, therefore, of diagnosis is to determine, for each child, his starting point along the continuum of reading development.

VI. Behavioral Objectives:

A. The student will demonstrate a knowledge of the definition and scope of the reading act by administrating a reading diagnostic instrument and analyzing the data collected with 60% accuracy.

B. The student will designate a teaching strategy in reading which is consistent with the data collected in (A) above and will defend the selection in terms of diagnostic findings.

VII. Pretest: None for pre-service teachers

VIII. Treatment:

A. The instructor will demonstrate the use and administration of a diagnostic instrument.

B. The student will listen to an audio or video tape of a child reading orally and identify specific strengths and weaknesses using a diagnostic instrument.

C. The instructor will discuss the following teaching strategies to be employed in light of diagnostic findings:

Language-experience
Word attack
Comprehension
Independent read-Self-selection

IX. Materials:

A. Goodman and Burke, Reading Miscue Inventory Manual: Procedure for Diagnosis and Evaluation (New York: MacMillan), 1972.

B. Goodman and Burke, "Do They Read What They Speak?" Grade Teacher, March, 1969.

X. Post-test:

The student will (1) administer a diagnostic instrument to an individual child; (2) analyze data; (3) evaluate strengths and weaknesses; and (4) prescribe an appropriate teaching strategy and materials for this child.

XI. Criteria:

For (1) above, complete the diagnostic testing.

For (2) above, analyze the data with 60% accuracy.

For (3) and (4), instructor judgment of consistency between data and recommendations.

The University of Toledo

Elementary Education 312-328-00

Module 11

1. Department/Context: Educational Psychology/Problem Solving
2. Subject/Topic: Problem Solving/Strategies, Simulation, and Solutions
3. Title: Problem Solving: Problems and Process
4. Prerequisites: None
5. Introduction and Rationale:

Problem solving efforts by people can be hampered by a variety of factors. Some of these factors can be identified as rigidity, inflexibility, and impulsivity. Further, failures result from the inability to specify and clarify the problem or to organize information in efficient and productive ways. The purposes of this training module are to provide experiential opportunities to demonstrate the effects of these factors and to illustrate the need for the organization of information.

The criteria of acceptable attainment of effective mastery of this module are the uncued responses during discussion by students after the experience which specifically reflect the terms, rigidity, inflexibility, impulsivity, problem identification, and information organization and 80% mastery of a criterion test.

6. Pre-Test: No pre-test required.
7. Objectives:

A. General Objectives:

1) The student will develop an understanding of the process of problem solving.

2) The student will develop an understanding of the applications of the problem solving process for solving problems in education.

B. Behavioral Objectives:

1) Given a set of descriptive experiences or an opportunity to experience real or simulated problems, the student will be able to analyze the experiences and list the effects of rigidity, inflexibility, impulsivity, failure to identify the problem, and failure to organize information as possible barriers in problem solving efforts.

2) Given a set of information, the student will be able to demonstrate a successful strategy of problem solving by organizing the information to solve the problem.

3) The student will be able to list at least five steps in the problem solving process in an appropriate sequence.

C. Exploratory Objectives:

1) The student will work cooperatively with other interns to provide acceptable solutions to several given problems.

2) The student will work independently to solve a set of given simple problems.

8. Treatment:

A. In a large group mode of instruction, participate in the solution of a simulated educational problem. (Fixed grading system announced by the administration of the University.)

B. Experience simple problem solving problems employing group and individual efforts in the process of reaching solution. (2-4, 9 dot, equilateral problem, OTTFF, and Logic-Perceptual test)

C. Individual versus small group efforts in problem solving. (NASA, Zebra, Baseball, and Medical problem)

D. Zero sum games and application of problem solving process in the context of education.

E. Group discussion of problem solving experiences.

F. Take post-test for Module 11.

9. Materials:

1. Chalkboard for 2-4, OTTFF, and equilateral problems.

2. Paper and pencil for 9 dot problem and Logic Perceptual Test.

3. Information cards for zebra, baseball, or patient problems.

4. NASA problem materials.

10. Remediation:

Repeat experiences with different problems for those concepts not demonstrated on the post-test.