A COMPARISON OF SELF-PACING VERSUS INSTRUCTOR-PACING AS THEY AFFECT THE ACHIEVEMENT AND ATTITUDES OF PRESERVICE READING TEACHERS

> Thesis for the Degree of Ph. D. MICHIGAN STATE UNIVERSITY LAURA R. ROEHLER 1972



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ABSTRACT

A COMPARISON OF SELF-PACING VERSUS INSTRUCTOR-PACING AS THEY AFFECT THE ACHIEVEMENT AND ATTITUDES OF PRE-SERVICE READING TEACHERS

By

Laura Roehler

<u>Purpose</u>.--The purpose of this study was to determine experimentally whether self-paced learners or instructor-paced learners demonstrated greater achievement and attitude in an undergraduate reading methods course. In addition, those students who indicated a preference for a method of pacing and were selected for that method were compared with those who were in a method not preferred. This study was designed to provide insight regarding the feasibility of providing self-pacing in an undergraduate reading methods course.

<u>Procedures</u>.--The study was conducted in Michigan State University's undergraduate reading methods course, Education 325A, in Winter Quarter, 1972. Two hundred and sixty-five students were assigned to either a self-paced method or an instructor-paced method of instruction. Both methods of instruction included students who preferred that method of pacing and students who did not prefer that method of pacing.

Method of instruction and content were controlled for all groups and statistical techniques were used to establish validity and reliability for measuring instruments.

Data collected included a pre and post measure of achievement, post measures of attitude, unobtrusive measures of attitude, and student-evaluation of the course.

A multivariate analysis of covariance was used to test for significant differences between self-paced and instructor-paced learners in attitude and achievement. The independent variables were scheduled class time and method of pacing. The dependent variables were a post achievement measure, an attitude toward the course measure, an attitude toward reading instruction measure, and unobtrusive attitude measure.

Two statistical measures were used to test for significant differences in achievement and attitude between learners in a preferred method of pacing and learners in methods of pacing not preferred. Since two different units (students for the self-paced sections and classes for the instructor-paced sections) were used, a multivariate analysis of covariance was used to test for differences between the self-pacers and a multivariate repeated measures of analysis of variance was used to test for differences between the instructor-paced sections. The dependent variables were a post achievement measure, an attitude toward the course measure, an attitude toward reading instruction measure, and unobtrusive attitude measures.

Additional statistical measures included a multivariate analysis of covariance testing only method of pacing, an analysis of variance using gain scores in achievement testing differences between self-pacers and instructor-pacers, and two chi squares of independence testing the relationship of pre-choice of instruction, post-choice of instruction, and actual method of instruction.

Results of the first multivariate analysis of covariance showed significance levels of .489 and .842 which was not significant at the .05 level, indicating no differences between self-paced or instructor-paced learners in either achievement or attitude. Results of the second multivariate analysis of covariance showed a significance level of .826 which was not significant at the .05 level, indicating no significant differences in attitude and achievement between learners in preferred methods of instruction and learners in methods of instruction not preferred. The multivariate repeated measures of analysis of variance showed a significance level of .2199 for achievement and .4600 for attitude indicating no differences in achievement and attitude between instructorpaced learners in preferred methods of instruction and learners in methods of instruction not preferred. The additional statistical measures supported the above findings.

Examination of the univariate findings of the unobtrusive attitude measures yielded interesting, though nonsignificant, data indicating that instructor-paced learners show a more positive attitude than self-paced learners. The chi squares of independence support this finding. Further study is needed to clarify this finding before significant conclusions can be drawn.

<u>Conclusions</u>.--It was concluded that students who self-paced in an undergraduate reading methods course did not differ significantly in achievement and attitude, regardless of whether they were in a method of pacing they preferred or one they did not prefer. A COMPARISON OF SELF-PACING VERSUS INSTRUCTOR-PACING AS THEY AFFECT THE ACHIEVEMENT AND ATTITUDES OF PRESERVICE READING TEACHERS

> By Laura R.^{((c), (c), 5} Roehler

A THESIS

Submitted to Michigan State University in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

Department of Elementary and Special Education



DEDICATED TO:

Danise,

Chris,

Kathy, and

Byrch

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CHAPTER I

INTRODUCTION

Many teacher educators are currently urging the adoption of performance-based programs for pre-service training of teachers.¹ Many of these programs have, as an underlying principle, the concept of individualization through self-pacing. For instance, of the nine models which were developed in response to the U.S. Office of

¹S. C. T. Clarke, "Designs for Programs of Teacher Education"; Barak Rosenshine and Norma Furst, "Research on Teacher Performance Criteria"; and Richard L. Turner, "Conceptual Foundations of Research in Teacher Education"; in Research in Teacher Education: A Symposium, ed. by B. Othaniel Smith (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1971), chapters 7, 3, and 2. Harry A. Kersey, Jr., "Florida Atlantic University's Center of Discovery: A New Dimension in Teacher Education," Journal of Teacher Education, XXI, No. 2 (Summer, 1970), pp. 224-32. Ralph H. Thompson, "Where Teacher Education Programs Fail," Journal of Teacher Education, XXI, No. 2 (Summer, 1970), pp. 264-69. Wendell C. Allen, Lillian V. Cady, and William H. Drummond, "Performance Criteria for Educational Personnel Development: A State Approach to Standards, " Journal of Teacher Education, XX, No. 2 (Summer, 1969), pp. 133-35. Keith Acheson and James L. Oliver, "Educational Laboratories and Teacher Education," Journal of Teacher Educa-tion, XXI, No. 3 (Fall, 1970), pp. 325-34. Jack M. Ott, Barbara S. Thomson, and Howard O. Merriman, "Prescription for Pedagogy: A Teacher Education Program," Journal of Teacher Education, XXI, No. 3 (Fall, 1970), pp. 352-56.

Education's concern for competency-based teacher education programs,² eight specified self-pacing as a basic element of individualization. In the Florida State University model,³ which is built around a three-phase concept designed to provide for a broad academic competence and skill base for beginning teaching and inservice teaching, progression through the course of study is individualized, not group-paced. The Northwest Regional Educational Laboratory model⁴ is a scientific application of the systems approach with a heavy emphasis of humanism, relevance, and individual learning rates. The Syracuse University model⁵ is a generalized five-year model which is largely individualized and self-paced. The Teachers College, Columbia University model⁶ provides for the students to set their own pace in learning. The University of Georgia model⁷ has some 2,000 proficiency modules, all of which are self-paced. The State Universities of Ohio

²Joel L. Burdain and Kaliopee Lanzillotte, eds., <u>A Reader's Guide to the Comprehensive Models for Pre-</u> <u>paring Elementary Teachers (Washington, D.C.: ERIC Clear-</u> inghouse on Teacher Education, and the American Association of Colleges for Teacher Education, December, 1969).

> ³<u>Ibid.</u>, pp. 3-50. ⁴<u>Ibid.</u>, pp. 51-84. ⁵<u>Ibid.</u>, pp. 85-104. ⁶<u>Ibid.</u>, pp. 105-58. ⁷<u>Ibid.</u>, pp. 159-96.

Stanley Elam, Performance-Based Teacher Education--What is the State of the Art? American Association of Colleges for Teacher Education, December, 1971.

model⁸ emphasizes team teaching as the ideal school organization and is self-paced. The University of Massachusetts model,⁹ which focuses on both human relations and behavioral skills, allows the teacher trainees to set their own pace. The University of Pittsburgh model¹⁰ uses individualized, self-paced instruction to develop teachers who will be prepared to facilitate the individualization of instruction within any school. While the ninth program, the Michigan State University model,¹¹ did not explicitly include self-pacing as an integral part of the entire model, it is implied in its general philosophy and is specified in two of its components. For instance, the Reading section of Professional Use of Knowledge provides flexibility for " . . . permitting the teacher trainees to proceed at their own speed during the comprehension (self inventory lab) and clinical stages . . . "12 and the Language Arts section of Professional Use of Knowledge states, "The usual instructional resources are supplemented by adequate assistance to permit small group interaction and

> ⁸<u>Ibid.</u>, pp. 197-210. ⁹<u>Ibid.</u>, pp. 211-33. ¹⁰Ibid., pp. 233-76.

¹¹W. R. Houston, <u>Behavioral Science Elementary</u> <u>Teacher Education Program</u>, Final Report, Vol. II, Project No. 8-9, October, 1968.

¹²Ibid., pp. vi-16.

means for either by-passing certain experience modules or recycling in order to account for individual differences in trainee readiness, rate, and capacity."¹³

In summary, the nine teacher education model programs includes self-pacing as an element in performancebased teacher education programs. The American Association of Colleges for Teacher Education has stated that an implied characteristic of performance-based courses is the "modularization [which] increases possibilities for selfpacing."¹⁴ It is further explained that "much greater program flexibility permitting students to progress at their own rate . . ."¹⁵ is visible within teacher education institutions. Such concern indicates an underlying belief that pacing is an important component of individualization.

The Problem

Statement of the Problem

This study attempts to determine whether students who self-pace in a pre-service reading methods course show better achievement in terms of course objectives

> ¹³<u>Ibid.</u>, pp. vi-108. ¹⁴Elem, <u>op</u>. <u>cit</u>., p. 9. ¹⁵<u>Ibid.</u>, p. 11.

and show more positive attitudes toward the course and toward reading instruction than those who instructor-pace.

Background to the Problem

While self-pacing is included as an integral part of recently-developed methods courses, little research is available to indicate that self-pacing is more effective than the more traditional instructor-pacing. A thorough review of the professional literature reveals no studies of the effectiveness of self-pacing in method courses generally, in reading methods courses particularly, or in the whole spectrum of university courses. The only research relative to self-pacing is that associated with studies in programmed learning, computer-assisted instruction, and auto-tutorial programs. While the enthusiasm for using self-pacing in methods courses is apparently based on an extrapolation of the research in these areas, even these data appear fragmentary and unclear. While some studies indicate self-pacing to be effective, others show it to be ineffective or not significantly more effective than instructor-pacing.

The largest body of related research that includes some element of self-pacing is in programmed learning. The conflicting nature of these data can be illustrated by examining sample studies. For example, Hulteen

and Crist¹⁶ compared the achievement of fourteen eighth grade students who progressed individually through a programmed vocabulary text with fourteen other eighth grade students proceeding in groups. The results, including achievement and attitude, favored the students who paced Sawiris.¹⁷ in a study with 124 boys and girls themselves. at the secondary level, found opposite results. Pairs of students showed higher achievement in geometry and had a better attitude than self-pacing students did while groups of eight students achieved equally with self-pacing students and showed the same level of attitude. In a similar study, Frye,¹⁸ using forty-four secondary students in an algebra class, found that if heterogeneous grouping is used, individualized pacing yields a more efficient result than does group-pacing. If homogeneous grouping is used, no significant differences were found. However, Carpenter

¹⁶Curtis Hulteen and Robert Crist, "The Group Use of Programmed Instructional Materials," <u>Programmed Learn-</u> <u>ing and Educational Technology</u>, VI, No. I (January, 1968), pp. 4-11.

¹⁷M. Y. Sawiris, "An Experimental Study of Individual and Group Learning Using a Linear Geometry Program," <u>Programmed Learning and Educational Technology</u>, III, No. 3 (October, 1966), pp. 146-53.

¹⁸C. H. Frye, "Group Versus Individual Pacing in Programmed Instruction," <u>Audio-Visual Communication Review</u>, II (July-August, 1963), pp. 14-19.

and Greenhill¹⁹ found no significant differences in selfpaced students, paired students, and groups of students during a series of six experiments involving English grammar and algebra at the secondary and university level.

Moore²⁰ agreed with Carpenter and Greenhill and found no significant differences between the achievement of self-paced and instructor-paced primary, secondary, and college students using teaching machines and selfpaced booklets. In a series of experiments involving primary level children, Allen and Richardson²¹ concurred with Moore in their findings. There were no significant differences in achievement in post-tests immediately following instruction or on post-tests given fourteen days later.

The areas of computer-assisted instruction and auto-tutorial programs are no more helpful in determining the effectiveness of self-pacing. While the only comparative studies conducted in these areas both seem to favor self-pacing, neither focuses exclusively on this element.

¹⁹C. R. Carpenter and L. P. Greenhill, <u>Comparative</u> <u>Research on Methods and Media for Presenting Programmed</u> <u>Courses in English and Math</u> (University Park, Pa.: University Division of Instructional Service, Pennsylvania State University, 1963).

²⁰D. L. Moore, "Group Teaching by Programmed Instruction," <u>Programmed Learning and Educational Tech-</u> nology, IV (1967), pp. 37-46.

²¹J. I. Allan and R. H. Richardson, "Programmed Learning--A Multimedia Approach," <u>Programmed Learning</u>, IV, No. 3 (July, 1967), pp. 191-95.

Emery's study²² of auto-tutorial programs in college math, for instance, focuses on conventional laboratories versus auto-tutorial laboratories with an analogy being drawn between auto-tutorial labs and self-paced learning. Similarly, Grubb and Selfridge's computer assisted study²³ in college psychology focuses on conventional lectures versus computer learning with the latter being equated with selfpacing. All other studies on auto-tutorial and computer assisted instruction makes it impossible to judge the validity of their results.

Significance of the Study

The conflicting and fragmentary research on selfpacing provides little support for the movement toward self-pacing in model teacher education programs. This study is intended to provide such data regarding the effect of self-pacing on the achievement and attitudes of preservice teachers in a reading methods course. Using these data, instructors will be able to make more objective decisions regarding the utility of self-pacing in undergraduate methods courses. Further, it is hoped that the

²²Harriet Emery, "Mathematics for Prospective Elementary Teachers in Community College: A Comparison of Audio-Tutorial and Conventional Teaching Materials and Modes" (unpublished doctoral dissertation, Michigan State University, East Lansing, Michigan, 1970).

²³R. E. Grubb and L. D. Selfridge, "Computer Tutoring in Statistics," <u>Computers and Automation</u>, No. 3 (1964), pp. 20-26.

study will provide insights for further research regarding how to make self-pacing components more effective.

The Population of the Study

The population of the study is 266 students enrolled in Michigan State University's pre-service reading methods course (Education 325A, Methods of Teaching Reading) during Winter, 1972. This is a course developed from the Behavioral Science Elementary Teacher Education Program model of Michigan State University. One of its major characteristics is the division of the course into two tracks, the Basic Track and the Advanced Track. The Basic Track emphasizes the performance-based aspect of the Behavioral Science Elementary Teacher Education Program model, focusing on the mastery of specified behavioral objectives. The Advanced Track offers individual students options as a means for providing flexibility and individual choice.

This study is limited to the Basic Track. Incorporated into the Basic Track are the following principles of learning:

- The course is based on explicit behavioral objectives which are made public in advance.
- 2. The required information is presented in manageable steps called modules which are directed toward eliciting a response or sets of responses to these simulated teaching situations.

- Relevant student activities emphasizing responses to simulated problems of reading instruction are utilized in conjunction with each module.
- Student responses are immediately confirmed or corrected.
- 5. The teacher receives immediate evaluation of the effectiveness of the presentation and provides further clarification, elaboration, or corrective instruction accordingly.

The heart of the Basic Track is the behavioral objectives specifying the desired performances. A consumable textbook helps develop these objectives by presenting, in modules, simulated problems which students solve by applying the principles of reading instruction. Students may go to class and respond to the semi-programmed study guide activities at the instructor's pace or they may complete the activities at their own pace.

The procedure can be illustrated with a typical module. The single objective is:

 Given two pupils reading graded oral reading paragraphs, the student identifies the instructional, independent, and frustration reading level of each pupil.

Either by attending class if he was selected for instructor-pacing or by listening to a previously prepared

tape-recording if he were selected for self-pacing, the student receives information regarding the need for diagnosis, the types of diagnosis, the characteristics of informal assessment, the criteria for determining the various levels, and examples of oral reading performances. He listens to the oral reading of the two pupils' performances on the paragraphs, analyzing these performances, and categorizing the reading level of each. The instructor provides guidance and feedback both during and following the activity. Students check their responses, asking questions to clarify any misunderstanding as they do so. Those pacing themselves follow the same procedure, except that they turn off the tape-recording as they respond and turn it back on again to receive the correct answers. Clarifying questions are answered during individual conferences scheduled during the instructor's office hours. Terminal behavior is assessed by giving a similar task at a later date. Failure to perform successfully at this time results in re-cycling for additional instruction and completion of alternate assessment forms until such time as mastery is demonstrated.

Definition of Terms

<u>Performance-based course</u>.--A course of study in which behavioral objectives specify both the competencies to be acquired and demonstrated by the learners and the criteria for evaluation.

<u>Self-paced method of achieving competency</u>.--A method whereby the student decides for himself <u>when</u> to listen to, read, and respond to the content material and when he is ready to be assessed on that material.

Instructor-paced method of achieving competency.--A method whereby the instructor decides when the learner will listen to, read, and respond to the content material and when the learner will be assessed on the material.

Instructor-judged achievement.--A measure of an instructor's perception of an individual's ability to teach reading as derived from tests and assignments.

Basic track.--The portion of Education 325A: Methods of Teaching Reading which emphasizes the foundation skills involved in teaching reading, as determined by the coordinator of the course, Dr. Gerald Duffy.

<u>Packet</u>.--A performance-based consumable textbook of modules which specify application type questions in a simulated teaching situation and the means of selfevaluation of progress.

Assumptions of the Study

The following assumptions underlie this study:

- The content of Education 325A: Methods of Teaching Reading as defined by Gerald Duffy and George Sherman is necessary for minimum preparation for teaching reading in the elementary schools.
- The behavioral objectives for Education 325A: Methods of Teaching Reading written by the staff reflect the content of Education 325A: Methods of Teaching Reading.
- 3. Measurement of achievement of course content and attitude toward the course itself and reading instruction are necessary for the training of pre-service teachers.

Hypotheses

The following hypotheses are tested in this study:

Hypothesis 1

Learners who are self-paced in the Basic Track of Education 325A: Methods of Teaching Reading will demonstrate higher achievement of course content than those who are instructor-paced.

Hypothesis 2

Learners who are self-paced in the Basic Track of Education 325A: Methods of Teaching Reading will demonstrate a more positive attitude toward reading instruction and toward the course.

Hypothesis 3

Learners who chose either the instructor-paced or self-paced routes for achieving mastery and were selected for the route of their choice will demonstrate higher achievement on course content than those who were not selected for the route of their choice.

Hypothesis 4

Learners who chose either the instructor-paced or self-paced routes for achieving mastery and were selected for the route of their choice will demonstrate a more positive attitude toward reading instruction and toward the course than those who were not selected for the route of their choice.

Design of the Study

Collection of the Data

The data for the study was collected from the 266 students enrolled in Education 325A: Methods of Teaching Reading. All students were given the opportunity to express a preference for either the instructorpaced or self-paced route. The names of eighteen students enrolled in the four sections of the first scheduled class time were drawn randomly regardless of their preference. The names of nineteen students enrolled in the other four sections at the second scheduled class time were then selected at random regardless of their preference. The remaining 229 students were randomly assigned to instructor-pacing within their scheduled class time. All students, regardless of their group, were given a pre-test in achievement at the first class session and a post-test at the last class session. An attitude questionnaire toward the teaching of reading and the course itself was also administered at the end of the course, while unobtrusive measures of attitude were conducted during the course of the term.

Achievement Measure

This instrument, developed by the staff of Education 325A: Methods of Teaching Reading under the direction of Dr. Gerald Duffy, measures a learner's achievement regarding course objectives. There are two forms of this test and each form includes 50 multiple-choice items (see Appendix A for these tests). Each item carries a value of one and tests information in an application situation. Items were selected on the basis of their index of difficulty and discrimination as determined from analysis of tests administered in previous terms.

Attitude Measures

The questionnaire developed by the researcher is based on similar instruments used in other studies (see Appendix B for this questionnaire). Martin was the chairman of a committee evaluating the undergraduate method

courses at Michigan State University.²⁴ An attitude measure was developed by this committee. Johnston and Fiel²⁵ developed an attitude questionnaire as part of an evaluation in a physiology preparation laboratory. Hapkiewicz²⁶ and Yelon²⁷ designed attitude measures for evaluation of their educational psychology courses.

The unobtrusive instruments were developed by the researcher and indicate to some degree attitude toward reading instruction. The first indicator involved a file of additional materials about different aspects of reading instruction which were not included in the Basic Track. Some of the choices were: Evaluating Basal Texts; Sentence Completion Questionnaire; Sharing a Book; Teach a Reading Game; Primary Activities; Middle Grade Activities; Word Recognition Test; Kinesthetic Method of Teaching Sight

²⁶Walter Hapkiewicz, "Course Evaluation-Educational Psychology 411," an evaluation measurement (East Lansing, Mich.: Department of Educational Psychology, Michigan State University, Fall, 1971).

²⁷Steven Yelon, "Student Reactionaire," an evaluation measurement, Educational Development Program (East Lansing, Mich.: Michigan State University, 1971).

²⁴Clessen Martin, Chairman, Evaluation of the Elementary Methods Courses, Handout, Department of Elementary and Special Education, Michigan State University, May, 1969.

²⁵Raymond F. Johnson and Nicholas J. Fiel, <u>Structured Learning and Training Environments: A Prepara-</u> <u>tion Laboratory for Advanced Mammalian Physiology Project</u>, Report No. 203, Educational Development Program (East Lansing, Mich.: Michigan State University, March, 1967).

Words; Ideas for Vocabulary Development; Denotative and Connotative Meaning; Vague and Precise Words; Giving a Placement Test; and Helping Children Explore the Author's Craft. A complete listing of the choices is found in Appendix C. Choices were categorized into the nine major divisions of the Basic Track. A value of one point was given to any student who chose to take any of the materials. A value of two points was given to any student who completed any of the optional assignments that were attached to the material.

The second unobtrusive measure involved a variety of one-hour workshops which were offered in a schedule of four choices every week at two separate time periods for an eight-week span. Some topics treated during the workshops sessions included: How a Basal Reading Series is Built; Building Your Own Informal Reading Inventory; Interpreting Intelligent Tests; Listening, Language, and Reading Instruction; Reading Instruction in the Open Classroom; Principles of Remedial Reading Instruction; Teacher-Made Materials, Teaching Beginning Reading with ITA; A Test Maker Talks About Readiness, Performance Contracting, Demonstration of a Comprehension Instructional Episode, Building Study Guides, Reading Activities for the Able Reader; and Application of Critical Thinking Skills to Reading Matter. A complete listing of these workshops is available in Appendix D. A value of one

point was given to any student who chose to attend any of the workshops. A value of two points was given to any student who chose to extend the content of any workshop through a written assignment or self-prepared teaching materials.

The third unobtrusive measure involved conferences between the students and the instructor. A value of one point was given to any student who initiated a discussion about any aspect of reading instruction not directly a part of a required conference. A value of two points was given to any student who initiated a conference to discuss any aspect of reading instruction not directly included in the basic track.

Organization of the Remainder of the Study

Chapter II will include a background of the problem and a review of research related to the problem. The procedures and method of collection and treatment will be described in detail in Chapter III. In Chapter IV, there is a description and interpretation of the data collected. Conclusions, results, and recommendations will be found in Chapter V.

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

The review of the literature is divided into two The first focuses on innovative teacher education areas. programs because the experiment was conducted in a competency-based reading methods course which grew out of Michigan State University's model teacher education pro-The second focuses on research in pacing (as defined gram. in Chapter I of this paper) and focuses almost exclusively upon programmed instruction since research dealing with students moving at their own rate has been conducted for the most part either in programmed materials or in studies comparing programmed materials with traditional materials. A thorough review of the literature reveals only one experimental study on pacing which was not in the area of programmed instruction and no additional experimental studies involving other types of pacing.

Innovative Teacher Education Programs

Background to the Current Situation

In the past decade, teacher education has become a target for much criticism. Typical of these criticisms is the one stated by Fred T. Wilhelms in the report on San Francisco State College Teacher Education Project:

Teacher education, which exists to influence the behavior of teachers . . . should itself be a model in applying what is known about learning and teaching, conceived in terms of the permanent modification of behavior. In actual fact it has not generally been regarded by its students as offering a particularly good learning situation; all too often they have assessed it as dull, banal, wordy, and repetitiously theoretical, and out of touch with reality. Furthermore, and this is more truly important--it has not been notably effective in generating the very behavior patterns which constitute its central purpose.¹

Ott, Thomson, and Merriman add to the concern with their criticism of the screening of incoming students by the colleges of education. They stated that "Few procedures in teacher education have as much potential and yet are more abused."² Robbins feels that educators need to ask themselves what can be done in teacher education to narrow the gap that has developed between educational

¹Fred T. Wilhelms, "The San Francisco State College Teacher Education Project," <u>The Journal of Teacher</u> <u>Education</u>, XII (June, 1961), pp. 209-15.

²Jack M. Ott, Barbara S. Thomson, and Howard O. Merriman, "Prescription for Pedagogy: A Teacher Education Program," Journal of Teacher Education, XXI, No. 3 (Fall, 1970), p. 352.
practices in the preparation of teachers and educational practices in the schools where they will teach.³ The element of time is added to the list of criticisms by Monroe and Talmage, who said, "What is astonishing is the time it has taken for all concerned (faculty, teachers, teacher candidates, school children, parents, and concerned community members) to demand a change."⁴

In response to the growing concern across the nation, many teacher-training institutions have developed new designs to adequately prepare teachers. In the early 1960's, the Cardozo Peace Corp Project⁵ was designed specifically to prepare liberal arts graduates as teachers for inner city schools. The uniqueness of this project is that the leadership came from the public school. The participants taught partial loads for a full year and during the summer and school year attended a series of Howard University seminars specifically designed to reveal inner city uniqueness. An independent evaluator found the

³Glaydon D. Robbins, "The Impact of Current Educational Change Upon Teacher Education," <u>Journal of</u> <u>Teacher Education</u>, XXII, No. 2 (Summer, 1969), pp. 182-87.

⁴George E. Monroe and Harriet Talmage, "Cooperative Program in Urban Teacher Education," <u>Journal of</u> <u>Teacher Education</u>, XXI, No. 4 (Winter, 1970), p. 469.

⁵Larry Cuban, "The Cardozo Peace Corp Project: Experiment in Urban Education," <u>Social Education</u>, XXVIII (1964), pp. 446-49.

project to be successful for preparing teachers to teach in inner city schools.

Another program designed to eliminate part of the problems of teacher education was Northwestern University's tutorial and clinical approach.⁶ Their theme was an alluniversity commitment to the preparation of teachers. Students received professional instruction individually or in groups of ten. Clinical work started in the freshman year and continued throughout the university program of preparation. Students worked jointly with clinical professors (master teachers in local schools) and tutorial professors (instructors in the university).

The University of Wisconsin also developed a program stressing clinical work.⁷ It is basically a fiveyear program. The intern assumes a full-time teaching position for one semester as a member of a teaching team which might vary from two to six people. The graduates of this program do as well as traditional program graduates and liked the value of team planning and team criticism.

⁶William Hazard, "The Tutorial and Clinical Approach to Teacher Education" (Evanston, Ill.: Northwestern University Press, 1966).

⁷Dean W. O'Brien, <u>Continued Effort Toward Better</u> <u>Schools</u> (Madison, Wisc.: University of Wisconsin Press, 1966).

The USOE Teacher Education Models

"Perhaps the major <u>tour-de-force</u> was the United States Office of Education funding of model teacher education programs."⁸ Nine models were finally funded in the program phase and, as Clarke has stated, "These . . . model teacher education programs, which run to over two million words, were a major contribution to the area."⁹ Using these models as a focal point, the following section illustrates the scope and direction of current teacher education programs.

The Florida State University model¹⁰ assumes that the future can be predicted and programs should be developed which coincide with these predictions. The goals of this model propose to develop teachers who will (1) formulate behavioral objectives, (2) select and organize content consistent with its logic and with the psychological demands of the pupils, (3) use learning strategies appropriate for the objectives, (4) evaluate learning reflecting behavioral

⁸S. C. T. Clarke, "Designs for Programs of Teacher Education," in <u>Research in Teacher Education</u>, ed. by B. Othanel Smith (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1971), p. 120.

⁹<u>Ibid.</u>, p. 120.

¹⁰J. W. Sowards, <u>A Model for the Preparation of</u> <u>Elementary School Teachers</u>, FS5.258:58018 (Washington, D.C.: USOE Bureau of Research, Government Printing Office, 1968).

change, and (5) be professional leaders. In the program, formal, general education would occupy most of the first two years with academic competence becoming more important during the last years. Progression through the course of study is individualized, not group-paced. Emphasis is placed on the improvement of professional training and on the screening and selection of candidates. The candidates are gradually introduced to the facets of teaching, culminating with a two year in-service phase. The program is managed by a computerized management control system. Regarding reading methods, this program briefly lists nineteen "general and enabling objectives"¹¹ but does not specify course content, structure, or format.

The University of Massachusetts model program¹² is interested in producing the fully human teacher; a person who meets the criteria of human understanding, is capable of rigorous thinking, is in control of his own behavior, and is constantly growing. Microteaching is the prominent feature of this program and is used as the vehicle for instructional skill development. Students set their own pace to meet the specified requirements of the program. This model also incorporates the idea of a career ladder and

¹²D. W. Allen and J. M. Cooper, <u>Model Elementary</u> <u>Teacher Education Program</u>, FS5.258:58022 (Washington, D.C.: USOE Bureau of Research, Government Printing Office, 1968).

¹¹Ibid., p. 59.

has a hierarchy of performance criteria: content knowledge, behavioral skills, and human relation skills. Self selection of learning experience provides for graduated and integrated "conceptualized-practice." The only reference made to reading methods is randomly selected examples of content provided for illustrative purposes.

The University of Georgia model¹³ emphasizes the need for a career development sequence for teachers and provides for differentiated teaching personnel: aides, teaching assistants, teachers with one area of competence, and specialists. The goals stress self-paced performance specifications as the core of the model. Screening and selection of candidates to fit the four categories of teaching personnel play an important role together with a career development ladder which logically follows the pattern of teaching personnel. Analysis focusing on what must be done by teachers to cause learning in elementary school children is highlighted. Reference to reading is limited to a listing of performance specifications which "describe a particular competency . . . that a teacher should possess."¹⁴

¹³C. E. Johnson, G. F. Shearron, and A. J. Stauffer, <u>Georgia Educational Model Specifications for the</u> <u>Preparation of Elementary Teachers</u>, FS5.258019 (Washington, D.C.: USOE Bureau of Research, Government Printing Office, 1968).

¹⁴<u>Ibid.</u>, pp. III-1.

The Syracuse University model¹⁵ emphasizes the need for an open system to nurture the future pluralistic and changing teacher education program. The focus is on the following: there is no consensus regarding a "best" program of teacher education; teachers of the future will need to adapt to change; teacher educators must adapt and be self-renewing; teacher education programs must respect individual differences in teacher candidates; and teacher education programs necessitate cooperation among their elements. The goal of this model is to provide a program designed to develop and implement an elementary teacher education program which is largely individualized and selfpaced for the generalist elementary school teacher. Cooperative relationships between universities, school systems, and other educational institutions is stressed. This model focuses on formative evaluation as opposed to inservice teacher evaluation. A unique feature of this program is the emphasis on the affective domain, which includes the need to develop individuals to become increasingly perceptive, to have a positive concept of themselves as teachers, to come to terms with themselves in respect to their motives for becoming teachers, and to develop a system of professional values consistent with their

¹⁵J. Hough, <u>Specifications for a Comprehensive</u> <u>Undergraduate and Inservice Teacher Education Program</u> <u>for Elementary Teachers, FS5.258:58016 (Washington, D.C.:</u> <u>USOE Bureau of Research, Government Printing Office,</u> 1968).

personal integrity and the demands of the education profession. While this program contains reference to reading methods, the primary goal is one of process rather than specific knowledges and skills in teaching reading.

The Universities of Ohio model¹⁶ assumes that teachers will be organized in teams and that teacher education can be vastly improved by applying existing knowledge which has been revealed through research. This program has the goal of designing a comprehensive self-paced plan which insures the development of specifications for all components of elementary teacher education programs. This model stresses self-correcting evaluation which discourages rigidity in program development. It continues by giving the generalized steps for evaluation. These conditions may be applied to four types of educational decisions: planning, structuring, implementing, and recycling. Reference to reading methods focuses on competencies needed to teach reading within a framework of a team teaching situation.

The Teacher's College, Columbia University model¹⁷ assumes that beginning teachers should be interactive

¹⁶G. E. Dickson, <u>Educational Specifications for a</u> <u>Comprehensive Elementary Teacher Education Program</u>, <u>OE-58023 (Washington, D.C.: USOE Bureau of Research,</u> Government Printing Office, 1968).

¹⁷B. R. Joyce, <u>The Teacher Innovator: A Program</u> to Prepare Teachers, FS5.258:58021 (Washington, D.C.: USOE Bureau of Research, Government Printing Office, 1968).

teachers, institution builders, innovators, and scholars. The purpose is to illustrate a process for creating teacher education programs and to provide an example of a program designed to promote innovation and the scientific study of teaching. For the teacher candidates, the basic teaching strategy is a democratic inquiry group of at least twelve students who set their own pace in learning. These miniature democracies are assisted by the university faculty, whose major role is to help the students educate themselves. Feedback teams are organized within each group, and each group is represented on a steering committee. A highlight of the program is the nine teaching strategies based on theory and research. These strategies are:

- an inductive teaching strategy developed from the work of Hilda Taba;
- (2) a strategy for inducing the student to attain concepts derived from work by Jerome Bruner and his associates;
- (3) an inquiry training model developed from the work of Richard Schuman who developed a training program to help children build scientific theories;
- (4) a cooperative inquiry model derived from the position of Herbert Thelen on the democratic process as it is applied to teaching;

- (5) a nondirective model developed from the work of the psychologist Carl Rogers on ways of helping students to teach themselves;
- (6) a differentiated training model derived from the work by David E. Hunt, which provides means of adjusting the strategies according to personality characteristics of the students;
- (7) a teaching strategy derived from the analysis
 of process;
- (8) a programmed model developed from the research on operant conditioning conducted by B. F. Skinner and his followers;
- (9) a model developed from the work of Abraham Maslow dealing with the development of an integrated personality.

No specific reference is made to reading methods in this program, except for illustrative examples provided in the Appendices.

The University of Pittsburgh model¹⁸ is an example of self-paced individualized instruction. It assumes that individualized instruction is the goal of American schools. The program attempts to build a training model for individualized instruction which will prepare teachers to

¹⁸H. C. Southworth, <u>A Model for Teacher Training</u> for the Individualization of Instruction, FS5.258:58017 (Washington, D.C.: USOE Bureau of Research, Government Printing Office, 1968).

use individualized instruction within elementary schools. Nine teacher competencies for individualized instruction are listed and amplified. These competencies are: (1) specifying learning goals; (2) assessing pupil achievement of learning goals; (3) diagnosing learner characteristics; (4) planning long-term and short-term learning programs with pupils; (5) guiding pupils in their learning tasks; (6) directing off-task pupil behavior; (7) evaluating the learner; (8) employing team work with colleagues; and (9) enhancing development. The techniques for individualizing instruction focus on a personalized and human interaction between teacher and learner, such as strong identity figures, active participation in learning, and other conditions. No specific reference is made to reading methods in this program.

The Northwest Regional Educational Laboratory model¹⁹ assumes the evolution of a functional science and technology of education. Instructional analyst, instructional designer engineer, and instructional manager are the anticipated three major classes of educational specialists. Individualization is one of the ten propositions in the conceptual framework that underlies this model. It states that individualization should include,

¹⁹H. D. Schalock, <u>A Competency Based</u>, Field <u>Centered</u>, Systems Approach to Elementary Teacher Education, FS5.258:58020 (Washington, D.C.: USOE Bureau of Research, Government Printing Office, 1968).

among others, the point of entry into the program, pacing, sequencing, and information processing preferences. Time is not an important element because the criteria is based on performance. At the heart of this program is the student's self-paced progression through a series of simulated teaching situations prior to entry into ongoing classroom situations. This model also stresses differentiated staffing for the elementary schools. This model does not describe the specific content for any methods course, including reading. Such specifications is left to the prerogative of the adopting institution.

The last model is Michigan State University's model.²⁰ This model assumes that the content and modes of inquiry of the behavioral sciences are sufficiently developed to provide an adequate base for the preparation of teachers. The goals are: (1) to prepare a new kind of school teacher for the nation's schools; (2) to systematically introduce research and clinical experience into the decision-making process; and (3) to develop a new kind of laboratory and clinical base for teacher education. This model is another example of the relationship between general education and academic disciplines. The procedure has been summarized by Le Baron:

²⁰W. R. Houston, <u>Behavioral Science Elementary</u> <u>Teacher Education Program</u>, FS5.258:58024 (Washington, D.C.: USOE Bureau of Research, Government Printing Office).

An extensive and flexible management system is necessary since this program was planned and will be implemented by faculty members from seven colleges plus representatives from the public school, preschool agencies, and students. An Educational Policies Council, including the deans of the seven cooperating colleges, will assume overall institutional responsibility for general administration of the program. A Project Advisory Committee, with members appointed by the deans and representing the seven colleges, will form a liaison agency between the Educational Policies Council and the administrative staff of the program.²¹

This model has the most completely developed performance modules; over 2,700 are included. A unique feature is the Interpersonal Process Recall, a technique designed for analyzing teacher candidates' performance. Some aspects of the program include video-tape, a split-image replay, and an interrogator. This program contains a detailed description of 240 reading modules, which were designed to be a complete course.

A tenth model, University of Wisconsin,²² was added during the feasibility phase. This model has: (1) an input component to deal with screening, selection, and orientation; (2) an operations component concerned with pre-service teaching-learning operations; (3) an output component for clinical experiences and a relationship with public schools, and (4) a feedback component

²¹W. Le Baron, <u>Analytical Summaries of Specifica-</u> tions for Model Teacher Education Programs (Washington, D.C.: USOE Bureau of Research, Government Printing Office, 1969), p. 184.

²²M. Vere DeVault, <u>Wisconsin Elementary Teacher</u> <u>Education Project</u>, Volume II (Madison, Wisc.: School of <u>Education</u>, University of Wisconsin, 1969).

to promote continual service. This program stresses cooperation with the schools at the pre-service and inservice stages and contains modules which use various media, clinical, and laboratory experiences. Key features of this program are the reliance on modern technology for information storage and retrieval and an emphasis on continuing in-service education at the university level to insure the effective and total use of this technology. Regarding reading methods, this program specifies a series of behavioral objectives modeled after the stages of development specified in Bloom's Cognitive Taxonomy.

Other Model Programs

Graham discusses the continued improvement of teacher education programs:

Until recently, the shape and magnitude of coming change in Teacher Education was unclear. But now a metamorphic change seems predictable. The nine designs commissioned by the USOE Bureau of Research contain common elements, most of which (perhaps all) seem destined for adoption. Teacher competencies will be defined in terms of specific behaviors which will be learned as a teacher-to-be progresses at his own rate through a series of instructional modules. Clinical skills will be taught in simulation laboratories as well as through an internship.²³

He continues by adding that the nine models serve to indicate the structure which is looked for in a Teacher Corps proposal.

²³Richard A. Graham, "Educational Change and the Teacher Corp," <u>Phi Delta Kappan</u>, LI, No. 6 (February, 1970), p. 208.

One of the specific Teacher Corps proposals, the Sixth Cycle Teacher Corps Proposal, revised May 30, 1971,²⁴ states that a goal of this program is to develop competency-based teacher training programs which will lend themselves to increased educational achievement for school children from low-income families.

Other programs for urban areas are the Berkley Urban Task Force, Syracuse University's program for undergraduate reading education, and Temple University's program for inner city schools. The Berkley program is a West Oakland-McAymond Project designed to improve the general socio-economic environment in West Oakland and introduce a new and more relevant design for secondary curriculum. The basic vehicle for accomplishing this goal is field experiences focusing on all aspects of the community and urban teaching.²⁵

Syracuse University has developed an undergraduate reading methods course which is conducted in a public school. Of the three hours per week spent in inner city schools, one hour is for tutoring, one hour is for

²⁴Sixth Cycle Teacher Corp Proposal, revised May 30, 1971, Lansing School District, Lansing Model Cities, College of Education, Michigan State University, and Center for Urban Affairs, Michigan State University.

²⁵Alvin H. Thompson, "Berkley's Urban Task Force: A Teacher Education Project to Prepare Secondary Community-Oriented Teachers for the Inner City," Journal of Teacher Education, XXI (Summer, 1970), pp. 233-39.

observing, and one hour is for discussion. One other additional hour, designed to develop basic concepts and topics, completes the class requirements. A positive relationship between the school and the university has developed.²⁶

The teacher-training program at Temple University conducts method classes (reading, math, science, and social studies) in public schools for two mornings a week. Half of this time is spent in teaching to individuals or small groups and the other half is spent in lectures and discussions. Positive outgrowths of this program are a closer relationship between public schools and the university and the immediate application of principles.²⁷

The Trainers of Teachers of Teachers project (TTT) at City College of the City University of New York²⁸ has adopted an open classroom model as a vehicle for pre-service teacher training. The focus is to individualize learning. As a result of TTT, City College is rethinking the direction of its teacher education program and is moving toward the preparation of teachers who are facilitators of learning

²⁶Leonard S. Braam and Marvin E. Oliver, "Undergraduate Reading Education," <u>The Reading Teacher</u>, XXIII (February, 1970), pp. 426-28.

²⁷Florence Shankman, "Innovations in Teacher-Training for Inner City Schools," <u>The Reading Teacher</u>, XXIV (May, 1971), pp. 744-47.

²⁸Vivan O. Windley, "A New Look at Teacher Education," Urban Review, V (March, 1972), pp. 3-11.

rather than dispensers of knowledge. Self-pacing is seen to be an integral part of this program.

The State Board of Education of the State of Washington has adopted new teacher education standards. Some of these standards follow:

- preparation for teaching should continue throughout the careers of education personnel;
- (2) preparation for teaching should be individualized;
- (3) preparation for teaching should be based on performance.

Finally, a study by Robbins attempted to determine the opinion of educators, including 200 Minnesota superintendents, 23 members of the faculty of Moorhead State College, and 200 deans of schools of education in selected colleges and universities accredited by NCATE in fortyeight states, regarding educational change. The conclusions are: (1) basic changes are occurring in elementary and secondary education; (2) basic changes will continue to occur in elementary and secondary education; (3) changes in elementary and secondary education have implications for teacher education; (4) traditional teacher education is not adequate; (5) minor modifications are not enough; (6) teacher educators should practice the innovative teaching-learning procedures now found in elementary and secondary schools; (7) students in teacher education should observe and have experience in elementary and secondary schools; and (8) preparation of teachers is a function of pre-service and inservice teacher education.²⁹

Summary

The research indicates that a concerted effort is being made to improve teacher education. Led by the U.S.O.E.'s call for Model Teacher Education Programs, certain themes appear prevalent. These themes include performance-based instruction and self-pacing.

Pacing and Related Areas

Self-pacing is an assumption of most of the innovative teacher education programs. Investigation of pacing, however, has been confined almost exclusively to programmed instruction. For this reason, this section will begin with an overview of programmed instruction. This will be followed by research comparing programmed instruction with traditional instruction, research in computer-assisted instruction, and research in student-directed instruction. Finally, the section will close with research in the specific area of pacing.

²⁹Glaydon D. Robbins, "The Impact of Current Educational Change Upon Teacher Education," Journal of Teacher Education, XX, No. 2 (Summer, 1969), pp. 182-87.

Overview of Programmed Instruction

Pressey, considered to be the father of programmed instruction, wrote in 1949 of the need for an accelerated program in education. He said, "There should be a broad program aiming expressly at adjustment to individual differences in capacities and rates of development."³⁰ He also stated the probable need for a program for slower students, "It seems probable that the large and neglected group of students in both school and college who are progressing at a pace slower than the average or are average would find greater flexibility an aid in catching up or at least in preventing their retardation from increasing, and that academic mortality among them would be reduced."³¹

Programmed instruction has since developed to where it is defined as follows by the National Society of the Study of Education: "We view programmed instruction as being essentially a well disciplined and experimental approach to instruction, characterized by explicitness, by sophisticated behavioral analysis, and by careful control of stimuli and student response and organized to

³⁰Sidney L. Pressey, <u>Educational Acceleration</u>, <u>Appraisals, and Basic Problems</u>, <u>Bureau of Educational</u> <u>Research Monographs</u>, No. 21 (Columbus, Ohio: The Ohio State University Press, 1949), p. 148.

³¹Ibid., p. 144.

elicit behavioral sequences that have been empirically determined."³²

In programmed classroom instruction,

The presentation structured by the lesson plan calls for an explanation, demonstration of a point, examples, or analogies followed immediately by a question that requires the use of the information just presented. After the students have all responded, the teacher gives the correct answer, explains why it is correct, asks for questions from the students and then goes on to the next part of the lesson.³³

A set of guiding principles has emerged from programmed learning which Leytham has summarized as

follows:

- 1. The aims and objectives of a course of learning should be clearly and explicitly specified in advance, in terms of observable behavior.
- 2. The material to be learned should be selected with reference to the aims and objectives of the course of learning.
- 3. The material to be learned should be organized in short, progressive steps, following a logical sequence.
- The material to be learned should be graded in difficulty so that the student makes few mistakes as he proceeds.
- 5. Each student should be introduced to new material at a level of difficulty commensurate with his past experience and current attainments.
- 6. Each individual student should proceed through the course of learning at his own pace.

³²Phil C. Lang, ed., <u>Programmed Instruction: The</u> <u>Sixty-sixth Yearbook of the National Society for the Study</u> <u>of Education, Part II (Chicago: The University of Chicago</u> <u>Press, 1967)</u>, p. 3.

³³William A. Deterline, "Practical Problems in Program Production," in <u>Programmed Instruction: The</u> <u>Sixth-sixth Yearbook of the National Society for the</u> <u>Study of Education</u>, ed. by Phil C. Lange (Chicago: The University of Chicago Press, 1967), p. 204.

- 7. The student should be actively involved in the process of learning.
- 8. The student should receive continual knowledge of how he is progressing through the course of learning.
- 9. The student should master each section of the material before continuing with the next.³⁴

Research in Programmed Learning

Perusal of the literature revealed that comparisons between programmed instruction and traditional instruction favors programmed instruction. A typical study is one by Jamieson <u>et al</u>. who compared the learning of these categories of college students: a programmed text group, an augmented audio-visual lecture group, and a straight lecture group.

A total of 184 post-graduate students, attending a course in educational psychology, were used as subjects. Intelligence, pre- and post-tests were administered.

The results showed significant differences in post-test teaching scores in the following order: first, programmed; second, augmented (audio-visual) lectures; third, straight lectures.

It was suggested that the superior performance obtained using the programmed method could be accounted for in terms of response similarities between learning and testing.

No significant relationship was found between intelligence test scores and amount learned under any of the three systems of learning. No difference was found between the sexes.

³⁴G. W. H. Leytham, "A Programmed Second-Year Course on the Psychology of Learning," <u>Programmed Learning</u> and Educational Technology, VII, No. 4 (October, 1970), pp. 280-81.

A retention test, carried out after an interval of five months, showed that the programmed learning group was still superior to the other two groups.³⁵

This study has considerable credibility since the obvious independent variables were closely controlled.

A similar study by Pikas³⁶ compared traditional and programmed learning, using university students in an educational measurement class. Programmed learning was found to be superior to traditional learning when the comparison was made on a test measuring passive achievement both immediately following the learning and on a time-lapse test. This study cannot be generalized beyond passive achievement since active achievement, such as practical application, was found to be inferior over a long span of time.

Daniel and Murdoch³⁷ also found that college students enrolled in a psychology course achieved higher when using a programmed text as compared to a traditional one.

³⁵G. H. Jamieson, Pamela E. James, and G. W. H. Leytham, "Comparisons Between Teaching Methods at the Post-Graduate Level," <u>Programmed Learning</u>, XVI, No. 4 (October, 1969), pp. 243-49.

³⁶Arnold Pikas, "Comparisons Between Traditional and Programmed Learning as a Function of Passive Performance and Active Application and Time Lapse Application," <u>Programmed Learning and Educational Technology</u>, VI, No. 1 (January, 1969), pp. 20-25.

³⁷W. J. Daniel and P. Murdoch, "Effectiveness of Learning from a Programmed Text Compared to a Conventional Text Covering the Same Material," Journal of Educational Psychology, LIX (1968), pp. 425-31.

This study presents strong evidence supporting superior achievement through programmed instruction, but the attitude of students remains in doubt.

Research in Computer-Assisted Instruction

A branch of programmed learning is computerassisted instruction. Pressey, in 1957, stated the following about computer-assisted instruction: "This programming would seem to emerge as of great promise, especially for certain kinds of materials and certain purposes, but needs coordination with research on student needs, knowledge, and error."³⁸ When one looks for research in computer-assisted instruction, the following statement is typical: "The vast majority of CAI projects have expended tremendous energy in the development of curriculum materials; consequently, this development phase has limited the availability of research findings."³⁹

Two controlled studies were found in this area: Grubb and Selfridge's study and Noble's study. Grubb and

³⁸S. L. Pressey, "Certain Major Psycho-educational Issues Appearing in the Conference on Teaching Machines," in <u>Automated Teaching: The State of the Arts</u>, ed. by Galanter (New York: Wiley, 1959), p. 193.

³⁹Donald N. Hansen, "Computer Assistance with the Educational Process," <u>Review of Educational Research</u> (December, 1966), pp. 588-603.

Selfridge⁴⁰ programmed a computer to help teach a psychological statistics course at the college level. Upon inquiry, the computer directed the student to a specific reading assignment and then verified the student's mastery of the material by giving him problems and tests. Remediation techniques were used if mastery was not met. The six students in this experiment were compared with eight students who were taught conventionally by Grubb. The experimental students were far superior in performance, averaging 94.3 per cent on the test as compared to 58.4 per cent for the control group. However, it should be noted that the experimental group had a significantly higher grade point average (2.68 compared to 2.14), indicating a failure to control all the independent variables. Conclusive results also cannot be drawn because of the small number of subjects.

In the second study, Noble⁴¹ investigated the interrelationship among a variety of individual differences and performances when children were learning mathematics from programmed instruction presented by a teaching

⁴⁰R. E. Grubb and L. D. Selfridge, "Computer Tutoring in Statistics," <u>Computers and Automation</u>, XIII, No. 3 (1964), pp. 20-26.

⁴¹Grant Noble, "A Study of the Relationship Between Ability, Performance, Attitudes, Inclinations, and Speed of Progress Using Intrinsic Programmed Instruction," <u>Programmed Learning and Educational Technology</u>, VI, No. 2 (April, 1969), pp. 109-20.

Three hundred children in six independent studies machine. from secondary schools were the subjects. Various measures of intelligence, reading ability, personality trait, mathematical attainment, attitude, and speed of progress were assessed and correlated. Principal component analysis was done for each group. The conclusions of the study included: (1) programmed instruction is best suited for those who also benefit most from conventional instruction and (2) the assumption that self-pacing is the optimum pace of learning was not substantiated by the findings of the In fact, in two of three samples, faster speeds study. correlated inversely with the greater gains. The effort expended in considering differences in sample populations lends credibility to this study.

Research in Student-Directed Learning

Since pacing is considered an element of studentdirected or independent learning, research in this area is also included. While several researchers have investigated student control on learning, only Campbell has made a systematic attempt to compare the effectiveness of this type of learning with programmed learning. When Campbell reviewed the studies which compared various self-directing or learner-centered methods, he found that not only were the results conflicting, but the degree of student control was varied between individualized and group methods of

instruction. Campbell used individualized programmed instruction in order to control group and individual differences, to equate the content of instruction, and to enable the learner to control the learning process.⁴² This study was designed to determine the effectiveness of an instructor-determined sequence of study with student self-direction. Of the several experiments conducted in junior high and senior high school classes, only mathematics yielded a significant difference for self-direction, and that difference occurred only after coaching for selfdirection. The self-directed group was given a short, basic text, supplementary examples and explanations, selftesting questions, and a two-page outline of the entire lesson. These methods were cross-indexed. The programmed group used a self-paced linear program. Without coaching, there were no significant differences in the groups. One of Campbell's conclusions was that instruction may be significantly improved if the programmer creates lessons which are more efficient than those lessons students program for themselves. The validity of this study may be questioned since, in the final analysis, there was little difference in the sequence of instructional activities of the experimental and control group.

⁴²Vincent Campbell, "Self-Direction and Programmed Instruction for Five Different Types of Learning Objectives," <u>Psychology in the School</u>, I (October, 1964), pp. 348-59.

Lewis and Pask⁴³ substantiate Campbell's conclusion when they discuss the theory and practice of teaching systems. They stated that adult learners, given freedom to schedule the sequence of training on a pair of interfering skills, produced for themselves sequences which were grossly inefficient when compared to those sequences developed by the programmers. They felt also that there may be cases where laboratory science can produce better results than common sense. Although this study possesses some technical weaknesses, it does tend to lend strength to Campbell's findings.

Research in Pacing

The realm of self-pacing in programmed instruction includes conflicting viewpoints. As earlier cited,⁴⁴ selfpacing is considered a guiding principle of programmed instruction.

In the <u>Encyclopedia of Educational Research</u>, Stolurow states that programmed instruction permits each student to respond at his own pace, thereby providing for a degree of individualization of instruction.⁴⁵

⁴³Brian N. Lewis and Gordon Pask, "The Theory and Practice of Adaptive Teaching Systems," in <u>Teaching</u> <u>Machines and Programmed Learning: Data and Directions</u>, ed. by Robert Glaser (Washington, D.C.: Department of Audio-Visual Instruction, N.E.A., 1965), pp. 248-58.

⁴⁴ Leytham, op. cit.

⁴⁵Lawrence M. Stolurow, "Programmed Instruction," <u>Encyclopedia of Educational Research</u>, 4th ed. (1969), pp. 1017-22.

However, Deterline, when discussing problems in program production, stated "Many people realize for the first time, upon seeing a group program, that self-pacing is not necessarily a required component of every program."⁴⁶

Lumsdaine agrees with Deterline when the suggestion is made that group-paced devices might be as effective as self-paced ones. The difference might lie with the nature of the task and the characteristics of the learner.⁴⁷

An examination of the research about pacing yields conflicting results which in turn reflects the prior statements of people involved in pacing as an element of programmed instruction. Hulteen and Crist⁴⁸ investigated group-paced and self-paced methods of learning. Twentyeight eighth grade students either read aloud from projected material in a group situation or read silently in a self-paced textbook. The self-paced method showed

⁴⁶William A. Deterline, "Problems in Program Production," in <u>Programmed Instruction: Sixty-sixth Yearbook of the National Society for the Study of Education,</u> <u>Part II</u>, ed. by Phil C. Lange (Chicago: University of Chicago Press, 1967), p. 202.

⁴⁷A. A. Lumsdaine, cited by W. J. Carr, <u>Programmed</u> <u>Instruction: Sixty-sixth Yearbook of the National Society</u> <u>for the Study of Education, Part II</u>, ed. by Phil C. Lange (Chicago: University of Chicago Press, 1967), pp. 57-81.

⁴⁸Curtis Hulteen and Robert L. Crist, "The Group Use of Programmed Instructional Materials," <u>Programmed</u> Learning and Educational Technology, VI, No. 1 (January, 1969), pp. 4-11.

higher achievement and a more positive attitude. In the group method attitude was poor, students were inattentive and daydreamed. However, other variables in the group method such as students having to read aloud or students taking extra time to answer aloud in order to lessen chances of being wrong in front of the group may have affected the pace by making it too slow and thereby affecting the results.

Opposite results were found by Kress and Gropper⁴⁹ in a study using programmed instruction with 608 eighth grade students. They found evidence that many students have unadaptive natural working rates; low I.Q. students work too slow and high students work too fast. It was suggested that it may, under certain circumstances, be beneficial to replace self-pacing by some form of external pacing. Conclusive results can be drawn because of the control of the independent variables.

In a second study, Kress and Gropper⁵⁰ studied self-pacing with students who had demonstrated that they could adopt a pace compatible with moderately high achievement. When these students were compared with students who were externally paced, the self-paced students achieved

50 Ibid.

⁴⁹Gerald C. Kress, Jr. and George L. Gropper, <u>Studies in Televised Instruction</u>, N.D.E.A. Report, VIIA-872-4, ED003202 (November, 1964).

lower scores. They felt that it was unsound to assume that instruction is individualized simply because each student is allowed to adopt his own pace. It is equally unsound to assume that instruction is <u>not</u> individualized simply because presentation tempos are externally determined with <u>no</u> student allowed to adopt his own pace. An instructional technology must be able to specify under what conditions either self-paced or externally-paced instruction can produce acceptable performance levels. This study casts doubt on self-pacing even when students had demonstrated a moderate rate with self-pacing.

Sawiris⁵¹ found results that somewhat agreed with Kress and Gropper. He investigated the effect of selfpacing and group-pacing on 124 secondary school students using the same linear geometry program. Although no significant differences were found, when using an analysis of variance, pairs of students did achieve moderately higher than self-paced or group-paced students. He concluded that group-paced learning involving eight students achieved results equal to self-paced learning. The learning task which was developed for individual usage may have hid group dynamics and the duration of the experiment was too short.

⁵¹M. Y. Sawiris, "An Experimental Study of Individual and Group Learning Using a Linear Geometry Program," <u>Programmed Learning and Educational Technology</u>, III, No. 3 (October, 1966), pp. 146-53.

Frve⁵² designed a study to investigate the relationship of homogeneously and heterogeneously grouppaced and self-paced learning on time and achievement. Forty-four high school freshmen enrolled in a beginning Algebra course comprised the subjects of this study. Eleven students were in a homogeneously self-paced program; eleven students were in a homogeneously group-paced program. Eleven students were in a heterogeneously selfpaced program, and eleven students were in a heterogeneously group-paced program. Because students were not randomly assigned to the experimental and control groups, this study cannot be considered experimental and no cause and effect relationship can be drawn. The results, as determined by nonparametric statistical procedures, indicate the following relationships. If heterogeneous grouping is used, individual-pacing yields a more efficient result than does group-pacing. If homogeneously grouping is used, there seems to be no difference in the efficiency of the two pacing techniques. Obviously, a similar experimental study needs to be conducted where cause and effect relationships can be examined.

⁵²C. H. Frye, "Group Versus Individual Pacing in Programmed Instruction," <u>A.V. Communication Review</u>, II (July-August, 1963), pp. 124-29.

Carpenter and Greenhill,⁵³ in a series of programmed learning experiments, add to the growing data that there is no significant differences in achievement between group-paced and self-paced learning. The first experiment involved 113 college students enrolled in a contemporary Algebra class. The experimental groups included students who were self-paced with teaching machines, students who were self-paced with programmed texts, students who were externally-paced with filmstrips. These methods were compared with lecture-discussion methods. No significant differences in mean scores on a post-test were found either among the programmed methods or between the programmed methods and the control methods.

In the second experiment, 180 students enrolled in a college general math course were subjects in a study which investigated the effects of varying the pace of externally-paced students. When measuring achievement and attitude, no significant differences toward programmed learning were found, using an analysis of variance. Again, externally-paced and self-paced conditions were equally effective. A third non-controlled study involving sixty-three students enrolled in Algebra college class showed equal learning for self-pacing and group-pacing.

⁵³C. R. Carpenter and L. P. Greenhill, <u>Comparative</u> <u>Research on Methods and Media for Presenting Programmed</u> <u>Courses in Math and English</u> (University Park, Pa.: <u>University Division of Instructional Services</u>, The Pennsylvania State University).

Seventy students were paired and then compared to self-paced learners in a college Algebra class. Performance and attitude was again equal. In the paired groups, verbal ability accounted for a substantially higher proportion of variance than did quantitative ability while the reverse was true in the self-paced group.

In the last experiment, forty-three high school students and thirty college students were both enrolled in English grammar courses. The high school students were either externally-paced with closed circuit television or self-paced with teaching machines. The college students were in a method that was externally-paced with closed circuit television or self-paced with teaching machines. The college students were in a method that was externally-paced with television or in a lecture-discussion method with an experienced teacher. No significant differences in attitude or achievement, using an analysis of variance, were found with the high school students and in the second study with college students, attitude was significantly in favor of the instructor-presentation method.

The general conclusions of Carpenter and Greenhill follow:

 It is feasible to adapt and use those media which require homogeneous groups of learners without adversely affecting their achievement;

- (2) students of this population had a relatively wide tolerance for variations in pacing rate;
- (3) results on pairing of students to study programmed material equal to those obtained by self-pacing but these results are not yet conclusive and need further study; and
- (4) in general, this study challenges the classical assumption that the best method of using programmed material is that of self-pacing and individualized study. A learner's own speed may not be the optimum rate.

These studies, which were adequately controlled, question the assumption of self-pacing being necessary for individualization of instruction.

Moore, in a six-week study with seventy junior high school students, agreed with Carpenter and Greenhill. He found no significant differences in this correlational study between the achievement of students in either a group-paced teaching machine method or a self-paced booklet method. He states:

The assumption appears to have been made that the rate at which a particular student chooses to work is the best rate for that student. But is there any reason to suppose that a student's choice of work rate is necessarily his most efficient?⁵⁴

⁵⁴D. L. Moore, "Group Teaching by Programmed Instruction," <u>Programmed Learning</u>, IV (1967), pp. 37-46.

Since the design of this study was correlational, there can be no cause-effect conclusions.

The last study was the only one not conducted in programmed material. Dallett⁵⁵ used two groups of college students and measured their ability to memorize words in a self-paced method and group-paced method. Both groups improved with practice, neither group differed in learning time, and neither group differed in recall. He concluded that self-paced learners and group-paced learners achieve equally. This study adds substance to the findings of no significant differences between types of pacing.

Hartley sums up self-pacing in programmed materials with the following: "clearly much more work needs to be done, but the little evidence there is does, I think, suggest that students don't always work at an optimum pace and that there is a case for investigating pacing techniques in appropriate situations."⁵⁶

Summary

A principle of programmed instruction is selfpacing. Computer-assisted instruction and student-directed

⁵⁵Kent Dallett, "The Role of Self-Pacing in Learning to Memorize" (unpublished doctoral dissertation, University of California, Los Angeles, 1964).

⁵⁶James Hartley, "Some Factors Affecting Student Performance in Programmed Learning," <u>Programmed Learning</u> and Educational Technology, V, No. 3 (July, 1968), p. 216.

learning includes self-pacing in their formats, yet of the twelve studies investigating self-pacing, only one favored self-pacing. The other studies favored grouppacing or found no significant differences.

Summary

The current educational literature seems to make two clear points relevant to this study:

- A majority of current innovative teacher education programs include self-pacing as an integral element.
- Research is unclear about the effectiveness of self-pacing as a method of instruction.

Of the nine teacher education model programs funded by the United States Office of Education, eight specified self-pacing as a method of instruction. The eight programs were: the Florida State University Model; the University of Massachusetts Model; the University of Georgia Model; the Syracuse University Model; the Universities of Ohio Model; the Teachers College, Columbia University Model; the University of Pittsburgh Model; and the Northwest Regional Educational Laboratory Model. The ninth program, the Michigan State University Model, strongly implied that self-pacing would be an integral part of the program but specific reference to this feature is limited to the reading and language arts sections.

Even though many model teacher education programs assume self-pacing as an important element, the research and literature relevant to pacing is very unclear. Pressey and Leytham both included self-pacing as an element of programmed instruction. Research in programmed learning included self-pacing in programmed learning and favored programmed learning. Grubb and Selfridge found significant differences in favor of computer-assisted instruction which included self-pacing as a component. However, Noble, while investigating computer-assisted instruction, questioned self-pacing as the optimum rate. In self-directed learning, self-pacing was a part of both self-directed learning and instructor-directed learning. Of the twelve studies investigating self-pacing and other types of pacing as methods of instruction, one favored self-pacing, two favored group-pacing, and nine found no significant differences between self-pacing and other forms of pacing.

Because a majority of innovative teacher education programs assume self-pacing to be an integral part of individualization and because the research generally yields conflicting results about pacing; this study was established to determine the effect of self-pacing and instructor-pacing on the achievement and attitude of preservice teachers in a reading methods course. More specifically, the study attempted to determine: (a) if self-paced learners demonstrated greater growth in
achievement of course content than instructor-paced learners; (b) if self-paced learners demonstrated a more positive attitude toward reading instruction and toward the course than instructor-paced learners; (c) if learners who preferred self-pacing and were selected for selfpacing demonstrated greater growth in achievement on course content than those who were not selected for the route of their choice; (d) if learners who preferred self-pacing and were selected for self-pacing demonstrated a more positive attitude toward reading instruction and toward the course than those who were not selected for the route of their choice.

CHAPTER III

METHODS AND MATERIALS

The purpose of this study was to investigate the effects of self-pacing students enrolled in a performancebased undergraduate reading methods course. More specifically, the study attempted to determine: (a) if selfpaced learners demonstrated greater growth in achievement of course content than instructor-paced learners; (b) if self-paced learners demonstrated a more positive attitude toward reading instruction and toward the course than instructor-paced learners; (c) if learners who preferred self-pacing and were selected for self-pacing demonstrated greater growth in achievement on course content than those who were not selected for the route of their choice; (d) if learners who preferred self-pacing and were selected for self-pacing demonstrated a more positive attitude toward reading instruction and toward the course than those who were not selected for the route of their choice.

Experimental Design

The population for this study originally consisted of the 266 Michigan State University undergraduate students enrolled in Education 325A (Methods of Teaching Reading) during Winter Quarter, 1972. The students, by their own preference, enrolled for any of the eight sections scheduled for the 8:00 a.m. and 9:00 a.m. class periods.

At the first class session of each section the students were asked to state on a card their preference for either a self-paced or an instructor-paced route as a means to complete the course requirements. These cards were then assigned numbers for randomization.

By arbitrarily entering the Table of Random Numbers, eighteen students were chosen for the self-paced 8:00 a.m. section regardless of their preference with eight in a preferred route and ten in a route not preferred. The remaining 8:00 a.m. students were randomly placed in three instructor-paced sections. Section one enrolled thirtyfive students of which twenty were assigned to a preferred route and fifteen were assigned to a route not preferred; section two enrolled thirty-seven students, of which twenty-three were assigned to a preferred route and fourteen were assigned to a route not preferred; and section three enrolled thirty-four students, of which seventeen were assigned to a preferred route and seventeen were assigned to a preferred. The same procedure was followed

for the 9:00 a.m. classes, with nineteen students being selected for the self-paced sections with eight in a preferred route and eleven in a route not preferred, and the remaining students being randomly placed in four instructorpaced sections. Section five enrolled thirty students, of which fifteen were assigned to a preferred route and fifteen were assigned to a route not preferred; section six enrolled thirty students, of which fourteen were assigned to a preferred route and sixteen were assigned to a route not preferred; section seven enrolled thirty-one students, of which twenty-one were assigned to a preferred route and ten were assigned to a route not preferred; and section eight enrolled thirty-two students, of which twenty were assigned to a preferred route and twelve were assigned to a route not preferred. Figure 1 shows the number of students in the 8:00 a.m. sections for each section, the number of students randomly assigned to routes of their preference, and the number of students randomly assigned to a route other than that for which they expressed a preference. Figure 2 shows the number of students in the 9:00 a.m. sections for each section, the number of students randomly assigned to routes of their preference, and the number of students randomly assigned to a route other than that for which they expressed a preference.

At the completion of Winter Quarter, the sample size had been reduced to 238 students. One self-paced and



Figure 1.--Original Number of Students, 8:00 a.m. Sections.



Figure 2.--Original Number of Students, 9:00 a.m. Sections.

eight instructor-paced students were eliminated because they did not successfully meet minimum performance requirements of the course and were given final grades of "Incomplete." An additional twenty-one instructor-paced students were eliminated because they had incomplete data for the dependent variable measures due to absences from class. Figures 3 and 4 show the number of students who successfully completed the course in each of these same three categories: total number of students in a section; total number of students who were in preferred routes; and total number of students in routes not preferred. As shown in Figure 3, section one contained thirty-one students, of which eighteen were in a preferred route and thirteen were in a route not preferred; section two contained thirty-four students, of which twenty-one were in a preferred route and thirteen were in a route not preferred; section three contained twenty-eight students, of which twelve were in a preferred route and sixteen were in a route not preferred; and section four contained eighteen students, of which eight were in a preferred route and ten were in a route not preferred. As shown in Figure 4, section five contained twenty-four students, of which twelve were in a preferred route and twelve were in a route not preferred; section six contained twenty-eight students, of which fourteen were in a preferred route and fourteen were in a route not preferred; section seven



Figure 3.--Number of Students Who Successfully Completed the Course, 8:00 a.m. Sections.



Figure 4.--Number of Students Who Successfully Completed the Course, 9:00 a.m. Sections.

contained twenty-nine students, of which twenty-one were in a preferred route and eight were in a route not preferred; section eight contained twenty-eight students of which seventeen were in a preferred route and eleven were in a route not preferred; and section nine contained eighteen students, of which eleven were in a preferred route and seven were in a route not preferred.

The ten sections were taught by four instructors assigned by the chairman of the Elementary and Special Education Department. The researcher was assigned to the two self-paced sections. The three 8:00 a.m. instructorpaced sections were randomly assigned to the remaining three instructors and the four 9:00 a.m. instructor-paced sections were randomly assigned to all four instructors.

Procedures

The course content of the Basic Track was presented to all the instructor-paced students during scheduled class sessions and to the self-paced students on cassette and reel-to-reel audio tapes. The tapes could be checked out and listened to at the Instructional Media Center in Erickson Hall or taken home. The tapes were available seven days a week. Instructor-paced students could clarify any content material during class sessions or during office hours. Self-paced students could clarify any content material during office hours or during scheduled class sessions if they so desired.

In order to account for the variable of instruction by four different instructors, two major controls were used. First, the course content variable was controlled by all the instructors using the same objectives, the same instructional packet, the same textbooks, the same teaching notes, the same outside assignments, the same quizzes, and the same final exam. The variability of every instructor's presentation of the course content was measured by both the students' rating of the instruction and observers' rating of the instructions to determine if there were any differences.

The students used the Student Instructional Rating Form which was developed by the Evaluation Services of Michigan State University and is given in all courses at the completion of each term. A sample of this measure is found in Appendix E. The correlation of the instructors' presentation established no significant differences in the instruction (p<.05).

The observers using a rating form developed by the researcher rated the four instructors in order to measure the differences in presentation of course content. These observers were graduate students who were members of the Education 325A: Methods of Teaching Reading staff but were not instructors for the course. The form required observers to rate instructors in terms of the following nine categories: enthusiasm and interest; use of personal experience; use of materials; allowance for others to express their opinion; encouragement of

questions and discussion; knowledgeable presentation; poise, proper dress, and no distraction due to voice. A sample of the rating form is found in Appendix F. Each rater made eight observations; thus, twenty-four observations were made throughout the term. The first four observations were completed by all of the observers in order to establish inter-rater reliability. A two-way analysis of variance was used to determine the correlation of course presentations by the four instructors and to determine inter-rater reliability. The correlation of the instructors' presentations established no significant differences in the instruction (p<.4564) and the inter-rater reliability was very high (the computed variance among the observers was 0.000000). Since these correlations are high, it can be assumed that the instruction in the various sections of the course was comparable.

Data Collection

Data were collected relating to both achievement and attitude. The achievement data were obtained from fifty-item multiple-choice pre-test and post-test measuring student understanding of the specific course objectives (see Appendix A). The attitude data, obtained from a questionnaire and from unobtrusive measures were collected to determine attitude toward the course and toward reading instruction (see appendices B, C and D respectively).

Data were secured from the students at the beginning of the course, throughout the course, and at the completion of the course. The results of a pre-test in achievement and a stated preference for self-paced or instructor-paced routes were collected at the beginning of the course during scheduled class sessions. Unobtrusive measures of a positive attitude were collected throughout the course. These unobtrusive measures included selections of material from a supplementary file, attendance at optional workshops, and utilization of student-instructor conferences about reading information not covered in the basic track of the course. Results of a post-test in achievement, results of an attitude questionnaire, results of the student's rating of the course, and a stated decision about taking the course again by a self-paced or an instructor-paced route were obtained from each student the last week of the term. Instructor-paced students completed data for each instrument during scheduled class sessions. Self-paced students completed data at their own pace and time within the limitations of the quarter time period of ten weeks. None completed the course earlier than the ninth week and only one took longer than the ten-week quarter.

Measures

Two major kinds of measures were used. These were achievement measures and attitude measures.

Achievement Measures

The achievement measures consisted of a pre-test and a post-test.

The Pre-test.--This measure consisted of fifty multiple-choice items testing the content of the Basic Track as reflected by the publicly-stated objectives (Appendix G contains a list of these objectives). Each correct answer carried a weight of one. The pre-test was constructed by the Education 325A staff over the course of three terms preceding this study. Indexes of discrimination and difficulty were obtained for each item on the pre-tests given in the three previous terms with the best ones being chosen for this test. It was decided to use content validity since "content validity is most frequently employed for the evaluation of achievement tests because with this type of examination, test content is essential."¹ Content validity was established by asking experts in the field (Gerald G. Duffy and George B. Sherman) to examine each item on the test to determine if each item measured the publicly-stated objectives. Because each item did measure the objectives, the pre-test was said to have high content validity. The reliability of this measure was determined by applying the

¹Gilbert Sax, <u>Empirical Foundation of Educational</u> <u>Research</u> (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1968), p. 167.

Kuder-Richardson Correlation Formula. The results yielded a reliability coefficient of .838.

The Post-Test.--This measure consisted of fifty multiple-choice items with each correct response carrying a weight value of one. The post-test was constructed by the staff of Education 325A during the three terms preceding the experiment. The same procedures used for content validity and item analysis of the pre-test were used for the post-test analysis. The reliability of the posttest measures was .887, as determined by the Kuder-Richardson Correlation Formula. A sample of the post-test used for this study is found in Appendix A.

The post-test items were also constructed from the publicly-stated objectives (found in Appendix F) in a form parallel to the pre-test. The specific aspects of reading that were included were: (1) determining the nature and importance of reading; (2) determining reading differences in children; (3) envisioning a classroom environment; (4) planning for effective skill instruction; (5) teaching the word recognition skills; (6) teaching the comprehension skills; (7) implementing a systematic skills program; (8) applying skills in realistic reading situations; and (9) organizing and managing a wellrounded reading program.

Attitude Measures

The attitude measures consisted of an attitude questionnaire and unobtrusive measures.

The attitude questionnaire.--The questionnaire measuring student attitude both toward the course and toward reading instruction was administered at the completion of the course and consisted of forty-four items. Twenty-six items measured attitude about reading instruction and eighteen items measured attitude about the reading methods course. The reliability of this measure was determined by applying the Kuder-Richardson Correlation Formula which yielded a reliability of .8526.

The items measuring attitude toward reading instruction were developed from the principles of reading instruction which were publicly stated in the course outline and which were modeled by the instructors throughout the reading methods course. The principles modeled included instructor responsibility for learning, performance-based instruction, implementation of the principles of learning theory, individualization, and humanism. Appendix H lists these principles as they appeared in the course outline for Education 325A. Content validity for each item about reading instruction on the questionnaire was established by matching each questionnaire item to a principle stated in the course outline. A sample of this questionnaire is found in Appendix B.

The items measuring attitude toward the reading methods course itself were adapted from other previouslyused attitude measures with items being selected as appropriate.²

<u>Unobtrusive measures</u>.--Three unobtrusive measures were used. These included a selection of materials from a supplementary file, attendance at optional workshops, and utilization of student-instructor conferences.

The supplementary material file contained information about reading which was not included in the Basic Track of the course. Some of the choices were: Evaluating Basal Texts, Sentence Completion Questionnaires, Sharing a Book, Teach a Reading Game, Primary Activities, Middle Grade Activities, Word Recognition Test, Kinesthetic Methods of Teaching Sight Words, Ideas for Vocabulary Development, Denotative and Connotative Meaning, Vague and Precise Words, Giving a Placement Test, and Helping Children Explore the Author's Craft. A complete listing of the choices is found in Appendix C.

Thirty-six packets of the additional materials categorized into the nine components of the Basic Track were available to the students at any time during the course. The nine components included in the Basic Track were:

²Adaptations of this measure are discussed in Chapter I of this dissertation.

Determine the Nature and Importance of Reading 1. Determining Reading Differences in Children 2. 3. Envisioning a Classroom Environment Planning for Effective Skill Instruction 4. Teaching the Word Recognition Skills 5. Teaching the Comprehension Skills 6. Implementing a Systematic Skills Program 7. Applying Skills in Realistic Reading Situations 8. Organizing and Managing a Well-Rounded Reading 9.

Program

Each packet included the particular reading information, a cover sheet explaining the basic information, and an optional assignment about the basic information. A complete listing of the titles of the supplementary materials is found in Appendix C. Announcements regarding the availability of material supplementing a particular component were made at the completion of each component in the instructor-paced sections and on the audio tape for the self-paced students. A value of one point was given to any student who chose to take any of the materials. A value of two points was given to any student who completed the optional assignments associated with any particular piece of supplementary material.

The second unobtrusive measure was attendance at a variety of one-hour workshops offered during scheduled class sessions. Some of the topics dealt with during the

workshop sessions include: How a Basal Text is Built; Building Your Own Informal Inventory; Interpreting Intelligence Tests; Listening, Language, and Reading Instruction; Reading Instruction in the Open Classroom; Principles of Remedial Reading Instruction; Teaching Beginning Reading With I/T/A; A Test Maker Talks About Readiness; and Performance Contracting. Each student received a schedule of these workshops at the beginning of the course. A complete list of the workshops scheduled during the quarter is found in Appendix D. The regular reading methods course instructors, as well as staff from M.S.U.'s Elementary and Special Education Department, conducted the workshops. All students enrolled in ED 325A were given an option of selecting one or two workshops each week from choices available at two separate time periods for each of eight weeks. A value of one point was given to any student who chose to attend any of the workshops. A value of two points was given to any student who chose to extend his learning in any particular workshop by completing a written assignment or by preparing a teaching device.

The third unobtrusive measure involved student response to required and unrequired conferences between the students and the instructors. Each instructor scheduled office hours and encouraged students to come in during these regularly scheduled office hours or to make appointments for conferences during unscheduled hours. When the instructor felt a student needed clarification of any part

of the Basic Track he required that the student come in for a conference. If, during a required conference, a student initiated a <u>discussion</u> about any aspect of reading not specifically related to that aspect of the Basic Track which he was called in to confer about or any other aspect of the Basic Track, a value of one point was assigned. If a student initiated a <u>conference</u> to discuss any aspect of reading instruction not specifically included in the Basic Track, a value of two points was assigned.

Treatment of the Data

Design

A multivariate analysis of covariance was the primary statistical test. In the two-factor design, the independent variables consisted of the method of instruction and the scheduled class period, since the total number of students were scheduled for two different hours. Within the self-paced and instructor-paced method of instruction, there were students who had chosen that method and had not chosen that method and then were randomly assigned to that method. Therefore, a second design with the independent variable being choice of method of instruction was used.

Because students within one classroom share the influences of the teacher, their scores cannot be considered uncorrelated for statistical purposes. They are subject to intraclass correlation. Therefore,

. . . it is the classroom and not the pupil which is the experimental unit. Thus it is the classroom mean rather than the score of an individual pupil which is the fundamental datum of the experiment.³

Because of this interdependence of students within a classroom, all the students within an instructor-paced section were considered one unit. Because of the lack of interdependence of students in the self-paced sections, student was considered a unit. Consequently, there were seven units (classes) in the instructor-paced route and thirty-eight units (students) in the self-paced route for the first design. A model of the two-factor design is shown in Table 1.

Scheduled
Class TimeMethod of Pacing8:00 a.m.Self-PacedInstructor-Paced8:00 a.m.18 units
(students)3 units
(classes)9:00 a.m.18 units
(students)4 units
(classes)

Table 1.--Two-Factor Design for Pacing Versus Scheduled Class Time.

In the second design, the units in the instructorpaced sections doubled because two choices for method of pacing were available within each section. Consequently,

³David E. Wiley and R. Darrell Bock, "Quasiexperimentation in Educational Settings: Comments," School Review, LXXV (Winter, 1967), pp. 353-66.

there are two measures per unit, totaling fourteen units for the second design as shown in Table 2. To account for this, a multivariate repeated measure of analysis of variance was used.

Choice of Method of Pacing Method of Pacing Self-Paced Instructor-Paced Self-Paced 7 units 18 units (students) (classes) 18 units Instructor-7 units Paced (students) (classes)

Table 2.--Two-Factor Design for Pacing Versus Choice of Pacing.

The dependent variables are the post-test achievement scores and measures of attitude toward the course and reading instruction while the pre-test is used in the analysis as a covariate.

Statistical Procedures

The inferential statistical procedures used in this study are identified under the hypothesis to which they were applied.

Hypothesis l

Learners who are self-paced in the Basic Track of Education 325A: Methods of Teaching Reading will demonstrate higher achievement of course content than those who are instructor-paced. The multivariate analysis of covariance for a twoway design will be used as the main procedure. The independent variables are method of instruction (self-paced or instructor-paced) and scheduled class time (8;00 a.m. or 9:00 a.m.). The dependent variable for this hypothesis is the post-achievement variable. The pre-achievement measure will be used as the covariate.

Hypothesis 2

Learners who are self-paced in the Basic Track of Education 325A: Methods of Teaching Reading will demonstrate a more positive attitude toward reading instruction and toward the course.

The multivariate analysis of covariance in a two-way design will be used as the main procedure. The independent variables are methods of instruction (self-paced and instructor-paced) and scheduled class time (8:00 a.m. and 9:00 a.m.). The dependent variables for this hypothesis are the attitude toward reading instruction measure, attitude toward the course measure, and the unobtrusive attitude measure. The pre-test achievement measure will be used as the covariate.

Hypothesis 3

Learners who chose either the instructor-paced or selfpaced routes for achieving mastery and were selected for the route of their choice will demonstrate higher achievement on course content than those who were not selected for the route of their choice.

The multivariate analysis of covariance and a multivariate repeated measures of analysis of variance will be used as the main procedures. The independent variable is the choice of method of instruction (selfpaced or instructor-paced choice). The dependent variable for this hypothesis is the post-achievement measure. The pre-achievement measure will be used as the covariate.

Hypothesis 4

Learners who chose either the instructor-paced or self-paced routes for achieving mastery and were selected for the route of their choice will demonstrate a more positive attitude toward reading instruction and toward the course than those who were not selected for the route of their choice.

The multivariate analysis of covariance and a multivariate repeated measures of analysis of variance will be used as the main procedures. The independent variables is the choice of method of instruction (selfpaced choice or instructor-paced choice). The dependent variables for this hypothesis are the attitude toward the course measure, attitude toward reading instruction measure, and the unobtrusive attitude measure. The preachievement measure will be used as the covariate.

Summary

The study described in this report consisted of an experiment conducted with students enrolled in an undergraduate reading methods course to determine the effect of pacing of instruction on attitude and achievement. Nine sections were taught by four instructors. Course content and presentation were highly correlated. After collecting a pre-achievement measure and a pre-choice measure of method of instruction, the course content of Education 325A: Methods of Teaching Reading was presented in a ten-week quarter. Unobtrusive attitude measures were collected during the course. At the conclusion of the course, post-achievement measures, questionnaire measures concerning attitude toward the course and reading instruction, students' evaluation of the course measure, and a post-choice method of instruction measure were collected.

Multivariate analysis of covariance and the multivariate repeated measures of analysis of variance were used to detect any significant differences between the selfpaced and instructor-paced groups on achievement and attitude in order to accept or reject the four hypotheses.

Because of the probability of small differences between the control and experimental groups, it was decided to use the pre-achievement measure as a covariate in the multivariate analysis of covariance.

Simply stated, the analysis of covariance is a statistical technique which tests the significance of the differences between two or more groups after initial differences between the groups are statistically eliminated. The advantages of the analysis of covariance is that . . . should there be any initial random error between groups, this can be eliminated statistically.⁴

The procedure reduces the error variance thus making it more sensitive to between group differences.

⁴Sax, <u>op</u>. <u>cit</u>., p. 35.

CHAPTER IV

RESULTS

The purpose of this study was to investigate the effects of pacing on students in a performance-based undergraduate reading methods course. More specifically, the study attempted to determine: (a) if self-paced learners demonstrated greater growth in achievement of course content than instructor-paced learners; (b) if self-paced learners demonstrated a more positive attitude toward reading instruction and toward the course than instructorpaced learners; (c) if learners who preferred a method of pacing and were selected for that method demonstrated greater growth in achievement on course content than those who were not selected for their preferred method; (d) if learners who preferred a method of pacing and were selected for that method demonstrated a more positive attitude toward reading instruction and toward the reading methods course than those who were not selected for their preferred method.

Self-Pacing Versus Instructor-Pacing

This section reports the results of the inferential statistical procedures applied to each of two of the four hypotheses. These two hypotheses were:

Hypothesis 1

Self-paced learners will demonstrate greater growth in achievement on course content than instructorpaced learners.

Hypothesis 2

Self-paced learners will demonstrate a more positive attitude than instructor-paced learners.

Because a multivariate analysis of covariance was simultaneously applied to Hypothesis 1 and Hypothesis 2, the statistical procedure itself will be described first, followed by the results as they apply to each hypothesis.

Statistical Procedure

In comparing self-pacing and instructor-pacing, two independent variables were involved. These were scheduled class time and method of pacing. Scheduled class time was included as a control variable in order to account for any variability due to differences in students between the 8:00 a.m. and 9:00 a.m. class time. Method of pacing was included to determine if the method of pacing influenced achievement or attitude. The covariate was the pre-test (found in Appendix A) based on the sixty objectives of the course, and related specifically to the course content. This data was collected on the first day and students were told that the scores would have no bearing on their final grade for the course. A score of one was given for each correct answer with the total score being used in the procedure. Multivariate analysis of covariance was used to test for the significant differences between the self-paced and instructor-paced learners in achievement and attitude.

The dependent variables in the multivariate analysis were the post achievement measure, the attitude toward the course measure, the attitude toward reading instruction measure, and the unobtrusive attitude measure. The post achievement measure (found in Appendix A) was also based on content that reflected the sixty objectives of the course. A score of one was given for each correct answer with the total score being used in the procedure. These tests were given on the last day. While students were told the scores would have no bearing on their final grade in the course, the mean score of thirty-nine out of fifty indicates that there was no lack of student effort in completing the post test.

Attitude was measured in several ways. An attitudinal post measure was collected by a questionnaire that measured attitude toward the course and attitude toward reading instruction. Students were again told that

the score would have no bearing on their final grade in the course. The responses were measured on a three point scale with the total score for both the attitude toward the course and attitude toward reading instruction being used in the statistical procedure. A copy of this measure is found in Appendix B.

The unobtrusive attitude measures were collected in three ways. The first measure involved a file of additional materials about different aspects of reading instruction which were not included in the Basic Track. (A list of these materials is found in Appendix C.) Α value of one point was given to any student who chose to take any of the materials and a value of two points was given to any student who completed any of the optional assignments that were attached to the material. The second measure (found in Appendix D) involved a variety of one-hour workshops which were offered in a schedule of four choices every week at two separate time periods for an eight-week span. A value of one point was given to any student who chose to attend any of the workshops. Α value of two points was given to any student who chose to extend the content of any workshop through a written assignment or self-prepared teaching materials. The third unobtrusive measure involved individual conferences between the students and the instructor. A value of one point

was given to any student who initiated a discussion about any aspect of reading not directly a part of a required conference. A value of two points was given to any student who initiated a conference to discuss any aspect of reading instruction not directly included in the Basic Track. A total score for the three unobtrusive attitude measures was used in the statistical procedure as one of the dependent variables.

It was decided to accept the experimental hypotheses 1 and 2 and reject the implied statistical null hypothesis if the significance level was less than .05.

An inspection of the interaction between scheduled class time and method of pacing yielded the F-ratio of .0243 which, with four degrees of freedom, had a significance level of .9988. This suggests no significant interaction was taking place. For the main effect, scheduled class time, the F-ratio was .3500 which, with four degrees of freedom, had a significance level of .8423. Since this was more than .05, the null hypotheses corresponding to the first two hypotheses comparing selfpacing and instructor-pacing in terms of achievement and attitude were not rejected suggesting that students from the two time periods did not differ significantly in attitude or achievement.

For the main effect, method of pacing, the F-ratio was .8752, which with four degrees of freedom had a significance level of .4887. Since this was more than .05, the null hypotheses corresponding to the first two hypotheses comparing self-pacing and instructor-pacing in terms of achievement and attitude were not rejected, suggesting that students from either method of pacing did not differ significantly in achievement or attitude.

An examination of the four univariate measures regarding achievement and attitude yielded an interesting finding. In the unobtrusive attitude measure, the F-ratio was 2.9341 with the corresponding significance level of .0949. This indicates a possible difference in favor of the instructor-paced students but it cannot be considered conclusive because the total multivariate results show no significant differences. Table 3 shows these findings.

Summary

There is no significant interaction nor are there any significant differences between self-pacers and instructor-pacers in achievement on course content or in attitude toward reading instruction and toward the course. Thus, Hypothesis 1: Self-paced learners will demonstrate greater growth in achievement on course content than instructor-paced; and Hypothesis 2: Self-paced learners will demonstrate a more positive attitude than

| Source of Dispersion | | Variable ^a | Univariate | | Multivariate | |
|-------------------------|------|-----------------------|------------|--------------|--------------|------|
| | d.f. | | F | Ър | F | Pp |
| Pacing | 4 | P.A.M. | .0997 | .754 | | |
| | | A.C.M. | .0576 | .811 | | |
| | | A.R.M. | .0187 | .892 | | |
| | | U.A.M. | 2.9341 | .095 | .8752 | .489 |
| Scheduled | | | | | | |
| Class Time | 4 | P.A.M. | .0013 | .971 | | |
| | | A.C.M. | 1.5145 | .226 | | |
| | | A.R.M. | .0456 | .832 | | |
| | | U.A.M. | .0060 | .939 | .3500 | .842 |
| Pacing by Scheduled | | | | | | |
| Class Time | 4 | P.A.M. | .0194 | .890 | | |
| | | A.C.M. | .0008 | .978 | | |
| | | A.R.M. | .0248 | .856 | | |
| | | U.A.M. | .0010 | .97 5 | .0243 | .999 |

Table 3.--Multivariate Analysis of Covariance for Self-Pacing Versus Instructor Pacing.

^aP.A.M. = post achievement measure; A.C.M. = attitude toward the course measure; A.R.M. = attitude toward reading instruction measure; and U.A.M. = unobtrusive attitude measure.

^bProbability values were rounded off to the nearest .001.

instructor-paced learners were not supported by these data.

Preferred Method Versus Method Not Preferred

This section reports the results of the inferential statistical procedures applied to the last two of the four hypotheses. These were:

Hypothesis 3

Learners who preferred a method of pacing and were selected for that method will demonstrate greater growth in achievement on course content than those who were selected for a method not preferred.

Hypothesis 4

Learners who preferred a method of pacing and were selected for that method will demonstrate a more positive attitude toward reading instruction and toward the course than those learners who were in a method not preferred.

Both a multivariate analysis of covariance and multivariate repeated measures analyses of variance were statistical procedures applied to the last two questions. The first test was used for self-pacers and the second was used for instructor-pacers. In the latter test, gain score was used for achievement and post scores were used for attitude to account for the different types of units. The statistical procedure will be described first and the results as they apply to each question will then be discussed.

Statistical Procedure

In comparing preferred method of pacing with a method of pacing not preferred, the preference for a method of pacing was the factor included.

A stated preference for one of the two methods of pacing--self or instructor--was collected on the first day of class. Students were told that they might not be assigned to a method of their preference. Students were then assigned randomly to a method of pacing. Each section contained students who preferred that method of pacing and students who did not prefer that method. The same covariate and the same dependent measures of achievement and attitude as described earlier were used in the multivariate analysis of covariance which tested for the significant differences between the self-paced learners in achievement and attitude. These same dependent measures were also used in the multivariate repeated measures analyses of variance which tested for significant differences between the instructor-pacers in achievement and attitude.

It was decided to accept the experimental hypotheses 3 and 4 and reject the implied statistical null hypotheses if the significance level was less than .05.

For the main effect (choice of method for the selfpaced students regarding both attitude and achievement), the F-ratio was .3733 which with four degrees of freedom, had a significance level of .8258. Since this was more than .05, the null hypothesis corresponding to Hypothesis 3
and Hypothesis 4 to self-pacers in terms of attitude and achievement were not rejected suggesting that self-pacers who chose self-pacing did not differ significantly in achievement or attitude from self-pacers who did not choose this method of pacing.

For the main effect (method of pacing for instructor-paced students regarding achievement), the Fratio was 1.8759 which with one degree of freedom had a significance level of .2199. Since this was more than .05, the null hypothesis corresponding to Hypothesis 3 for instructor-pacing in terms of achievement was not rejected suggesting that instructor-paced students who chose instructor-pacing did not differ significantly in achievement from instructor-pacers who did not choose this method of pacing. For the main effect (choice of method regarding attitude for the instructor-paced students), the F-ratio was 1.0569 which with three degrees of freedom had a significance level of .4600. Since this was more than .05 the null hypothesis corresponding to Hypothesis 4 for instructor-pacers was not rejected suggesting instructorpaced students who chose instructor-pacing did not differ significantly in attitude from instructor-paced students who did not choose this method of pacing. Tables 4 and 4a show these findings.

| Source of Dispersion | d.f. | Variable ^a | Univariate | | Multivariate | |
|-------------------------|------|--|------------|-------|--------------|------|
| | | | F | Pb | F | Ppp |
| Preferred Method | | ······································ | | | | |
| of Pacing | 4 | P.A.M. | .0139 | .907 | | |
| | | A.C.M. | .5121 | .479 | | |
| | | A.R.M. | .7529 | . 392 | | |
| | | U.A.M. | .2024 | .656 | .3733 | .826 |

TABLE 4.--Multivariate Analysis of Covariance for Preferred Method of Pacing for Self-Paced Students.

^aP.A.M. = post achievement measure; A.C.M. = attitude toward the course measure; A.R.M. = attitude toward reading instruction measure; and U.A.M. = unobtrusive attitude measure.

^bProbability values were rounded off to the nearest .001.

TABLE 4a.--Multivariate Repeated Measures Analyses of Variance for Preferred Method of Pacing for Instructor-Paced Students.

| Source of | | | Univariate | | Multivariate | |
|-------------------------------|------|----------|------------|------|----------------|------|
| Dispersion | d.f. | Variable | F | Ppp | F | Ppp |
| Preferred Method of Pacing | 1 | P.A.M. | 1.8759 | .220 | | |
| Preferred Method of Pacing | 3 | A.C.M. | 2.7364 | .150 | | |
| | | A.R.M. | 3.7829 | .100 | | |
| | | U.A.M. | .3706 | .888 | 1.056 9 | .460 |

^aP.A.M. = post achievement measure; A.C.M. = attitude toward the course measure; A.R.M. = attitude toward reading instruction measure; and U.A.M. = unobtrusive attitude measure.

^bProbability values were rounded off to the nearest .001.

Summary

There are no significant differences between selfpacers and instructor-pacers in achievement on course content or in attitude toward the course and toward reading instruction. Thus, Hypothesis 3: Learners who preferred a method of pacing and were selected for that method will demonstrate greater growth in achievement on course content than those who were selected for a method not preferred, and Hypothesis 2: Learners who preferred a method of pacing and were selected for that method will demonstrate a more positive attitude toward reading instruction and toward the course than learners who were in a method not preferred, were not supported by these data.

Additional Analyses not Specifically Related to Stated Hypotheses

<u>Multivariate Analysis of</u> Covariance--Method of Pace

Since the factor of scheduled time was not significant, a one-way analysis of covariance using only the independent variable pacing as the main effect was tested. The covariate, the pre-test (found in Appendix A), and the same four dependent measures in achievement and attitude as described earlier were again used in this statistical test. Multivariate analysis of covariance was used to test for the significant differences between the selfpaced and instructor-paced learners in achievement and attitude. The critical P-value was set at .05.

An examination of the results, as seen in

Table 5 shows the F-ratio to be .9310. With four degrees

| Source of Dispersion | d.f. | Variable ^a | Univ | Univariate | | Multivariate | |
|-------------------------|------|-----------------------|------|------------|-------|--------------|--|
| | | | F | Pp | F | Pp | |
| Pacing | 4 | P.A.M. | .10 | .750 | | | |
| _ | | A.C.M. | .09 | .761 | | | |
| | | A.R.M. | .02 | .880 | | | |
| | | U.A.M. | 3.06 | .088 | .9310 | .457 | |

Table 5.--Multivariate Analysis of Covariance--Method of Pacing.

^aP.A.M. = post achievement measure; A.C.M. = attitude toward the course measure; A.R.M. = attitude toward reading instruction measure; U.A.M. = unobtrusive attitude measure.

^bProbability values were rounded off to the nearest .001.

of freedom, the corresponding significance level was less than .4566. Since this was more than .05, again the null hypotheses corresponding to the first two hypotheses comparing self-pacing and instructor-pacing in terms of attitude and achievement were not rejected, again suggesting that students from either method of pacing did not differ in achievement and attitude. An examination of the four univariate tests regarding achievement and attitude yields an interesting finding. In the unobtrusive attitude the F-ratio was 3.0629. With four degrees of freedom, the corresponding significance level was .0878. This indicates a possible difference in favor of the instructor-paced students but it cannot be considered conclusive because the total multivariate results show no significant differences.

One-Way Analysis of Variance--Method of Pacing

In order to see if gain score in achievement yielded any significant findings, a one-way analysis of variance with only the gain in achievement as the dependent measure was tested. Analysis of variance was used to test for the significant differences between the self-paced and instructor-paced learners in achievement. The critical significance level was set at .05.

An examination of the results, as seen in Table 6, shows the F-ratio to be .0966. With one degree of freedom the corresponding significance level was less than .7575. Since this is more than .05, again there were no significant

Table 6.--One-Way Analysis of Variance for Method of Pacing.

| Source of | | Variable | Univariate | | |
|------------|------|------------------------------|------------|------|--|
| Dispersion | u.r. | Variable | F | Р | |
| Pacing | 1 | Gain score in achievement | .010 | .758 | |

differences in achievement between the self-paced and instructor-paced learners and the following hypotheses were not supported:

Hypothesis 1

Self-paced learners will demonstrate greater growth in achievement on course content than instructorpaced learners.

Hypothesis 2

Self-paced learners will demonstrate a more positive attitude toward the course and toward reading instruction than instructor-paced learners.

Chi-Square--Pre-Choice Versus Post-Choice of Pacing

At the beginning of the course, students were asked to state in writing whether they preferred to be self-paced or instructor-paced in their reading methods course. At the close of the study, they were asked, if they were to take the course again, would they prefer to be self-paced or instructor-paced. A chi square test of independence was used to determine the relationship between these choices.

Of the 127 students who originally chose instructor-pacing, 109 restated a preference for instructor-pacing at the end of the course while 18 changed their preference to self-pacing. Likewise, of the 100 students who originally chose self-pacing, only 37 restated a preference for self-pacing, at the end of the course while 63 changed their preference to instructor-pacing. The chi square equaled 58.12, which was significant at the .001 level. This suggests that a significantly greater number of students who chose the selfpaced method changed at the completion of the course to instructor-pacing than did students who chose the instructor-paced and changed to the self-paced method. Tables 7 and 8 show these results.

Chi-Square--Method of Pacing Versus Post-Choice of Method

Because of the findings in the chi square regarding pre-choice and post-choice of preference for types of pacing, a chi square using the actual method of pacing was tested. The findings tend to support instructor-pacing. Of the 191 students assigned to instructor-pacing, 163 stated a preference for instructor-pacing and 28 stated a preference for self-pacing at the completion of the course. Likewise, of the 36 students assigned to self-pacing, 27 stated a preference for self-pacing and 9 stated a preference for instructor-pacing at the completion of the course. The chi square equaled 2.39, which was not significant at the .05 level. Though not significant, this does suggest that a greater number of students who were assigned to instructor-pacing stated a preference for instructor-pacing at the completion of the course than did students who were assigned to self-pacing and stated a preference for selfpacing at the completion of the course. Tables 9 and 10 show these results.

| Tabled x ² Value | Actual χ^2 | Significance Level | Degrees of Freedom | Results of Hypothesis Testing |
|--------------------------------|-----------------|-----------------------|-----------------------|-------------------------------------|
| 10.828 | 58.12 | .001 | 1 | Significant at the .01 level |

Table 7.--Chi-Square--Pre-Choice Versus Post-Choice of Pacing.

| Table | 8Chi-SquarePre-Choice | Versus | Post-Choice. |
|-------|-----------------------|--------|--------------|
| | | | |

| Dro-Choigo | Post | Post-Choice | | | | |
|----------------------|------------------|----------------|-------|--|--|--|
| | Same Chan | | Total | | | |
| Observed | | | | | | |
| Instructor- paced | 109 (85.83%)* | 18 (14.17%) | 127 | | | |
| Self-paced | 37 (37.00%) | 63 (63 %) | 100 | | | |
| Expected | | | | | | |
| Instructor- paced | 81.68 | 45.32 | 127 | | | |
| Self-paced | 64.32 | 35.68 | 100 | | | |

*Percentages by row margins.

| Tabled χ^2 Value | Actual χ^2 | Significance Level | Degrees of Freedom | Results of Hypothesis Testing |
|--------------------------|-----------------|-----------------------|-----------------------|-------------------------------------|
| 3.84 | 2.39 | .05 | 1 | Significant at the .01 level |

Table 9.--Chi-Square--Method of Pacing Versus Post-Choice of Method.

Table 10.--Chi-Square--Method of Pacing Versus Post-Choice of Method.

| Method of | Post-Choice | | | | |
|----------------------|------------------|----------------|-------|--|--|
| Pacing | Same | Change | Total | | |
| Observed | | | | | |
| Instructor- paced | 163 (85.34%)* | 28 (14.66%) | 191 | | |
| Self-paced | 27 (75%) | 9 (25%) | 36 | | |
| Expected | | | | | |
| Instructor- paced | 159.87 | 31.13 | 191 | | |
| Self-paced | 30.13 | 5.87 | 36 | | |

*Percentages by row margins.

Profiles of Students

Because of the interdependence that occurs within classrooms, the whole class, for statistical purposes, had to be considered the experimental unit and the average means of the class not the individual scores of the students became the fundamental data. In order to examine some individual scores of students, it was decided to examine, in a non-statistical manner, selected profiles of students and various composite profiles on individual students. The first of these profiles is a group of seven instructor-paced students who were randomly selected, one from each section. Figure 5 shows these profiles. The second set of profiles, found in Figure 6, illustrates the scores of seven randomly selected self-paced students.

While there was some variation within and between the two groups of randomly selected students, the composite profiles of these scores show little differences. The composite self-paced profile had the following scores:

pre-test achievement measure--23; post-test achievement measure--39; attitude toward the course measure--35; attitude toward reading instruction--72; and unobtrusive measure--1.



Figure 5.--Profiles of Seven Randomly Selected Self-Paced Students.



Figure 6.--Profiles of Seven Randomly Selected Instructor-Paced Students.

The composite self-paced profile had the following scores: pre-test achievement measure--23; post-test achievement measure--39; attitude toward the course measure--39; attitude toward the reading instruction measure--74; and unobtrusive attitude measure--2.

Figure 7 shows the two composite profiles, one for the randomly selected instructor-paced students and one for the randomly selected self-paced students. As is seen, there is a four-point difference in the attitude toward the course measure favoring the self-pacers, a two-point difference in the attitude toward reading instruction measure favoring the self-pacers and a one-point difference in the unobtrusive attitude measure favoring the instructor-paced students. The composite profiles actually show no significant differences and support the statistical analyses of no differences between self-pacers and instructor-pacers regarding achievement and attitude.

While it is interesting to examine profiles and composite profiles of randomly selected students, it may also be helpful to examine the profiles of the average mean of each of the instructor-paced sections. These composite scores are found in Figure 8. A final set of profiles contrasting a composite of all instructor-paced students with a composite of all self-paced students is







Figure 8.--Composite Profiles for Each Section of Instructor-Paced Students.

seen in Figure 9. The scores for the composite profile of all the self-paced students follow:

pre-achievement measure--22; post-achievement measure--39; attitude toward course measure--37; attitude toward reading instruction--73; and unobtrusive attitude measure--1.

The composite profile of all instructor-paced students had the following scores:

pre-achievement measure--22; post-achievement measure--38; attitude toward course--37; attitude toward reading instruction--73; and unobtrusive attitude measure--2.

As is seen, there is a one-point difference in postachievement measure favoring the self-paced learner and a one-point difference in the unobtrusive measure favoring the instructor-pacers. These composite profiles show no significant differences between self-pacers and instructorpacers and support the statistical analyses of no significant differences between self-pacers and instructorpacers regarding achievement and attitude.

Summary

A multivariate analysis of covariance was used to test for significant differences between instructor-paced and self-paced learners regarding achievement on course





content and attitude toward the course and reading instruction. There were no significant differences between selfpacers and instructor-pacers in achievement or attitude.

When learners who were selected for a preferred method of pacing were compared regarding achievement and attitude with those learners selected for a method not preferred, a multivariate analysis of covariance and a multivariate repeated measures analyses of variance revealed no significant differences.

In order to detect any differences in self-pacers and instructor-pacers, a multivariate analysis of covariance using only method of pacing as the independent variable was used. Again, no significant differences were found in achievement on course content or attitude toward the course and reading instruction.

An analysis of variance using method of pacing as the independent variable and gain score in achievement as the dependent variable was used to test for any differences in achievement. In this test, as in the previous ones, no significant differences were found in achievement.

Clearly, the statistical procedures used in this study showed no significant differences between selfpacers and instructor-pacers in achievement on course content or attitude toward the course and reading instruction.

While not significant, another finding did emerge. In the test, using multivariate analysis of covariance in a two-way design, the unobtrusive attitude measure

favored instructor-paced learners. This finding was also substantiated by the one-way multivariate analysis of covariance. Both chi-squares favored instructor-paced learners with the chi square of pre-choice versus postchoice very significantly favoring the instructor-paced learners. This indicates a need to further investigate the attitude of learners in different methods of pacing.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The purpose of this study was to investigate the effect of self-pacing as compared to instructor-pacing in an undergraduate reading methods course. Self-pacing was defined as students completing the course requirements using taped lectures which they could complete at the specific time and pace of their choice. Instructor-pacing was defined as students attending the regularly scheduled class sessions and proceeding through the course material at a pace determined by the instructor. Data on achievement were collected on a pre-measure and a post-measure while data on attitudes were collected on a postquestionnaire measure and unobtrusive measures. Additional data pertaining to different measures of attitude included a pre- and post-choice for a self-paced or a lecture-paced method of instruction and an evaluation of the course by the participating students. The population of the study consisted of 266 Michigan State University students enrolled in Education 325A: Methods of Teaching Reading for Winter Term, 1972.

The students were asked to write a preference for the instructor-paced or self-paced method. Then they were randomly assigned to seven instructor-paced sections and two self-paced sections. Students in both methods of pacing received the same instruction in the Basic Track, the instructor-paced by attending lectures and the selfpaced by listening to audio tapes at times of their own choosing. Students in both methods of pacing took the same tests and completed the same basic outside assignments, with the instructor-paced students doing these tasks at scheduled times and the self-paced students at times of their own choosing. All students could choose to attend optional workshops to take and use additional materials, and to participate in student-instructor conferences.

Four major questions were investigated during the course of this study. The first two focused on determining the differences in achievement and attitude between selfpaced and instructor-paced groups. The hypotheses related to these questions were:

Hypothesis 1

Learners who are self-paced in the Basic Track of Education 325A: Methods of Teaching Reading will demonstrate higher achievement of course content than those who are instructor-paced.

Hypothesis 2

Learners who are self-paced in the Basic Track of Education 325A: Methods of Teaching Reading will demonstrate a more positive attitude toward reading instruction and toward the course.

The second two focused on determining the differences in achievement and attitude between students who were placed in preferred methods of pacing and those who were placed in methods of pacing not preferred. The hypotheses related to these questions were:

Hypothesis 3

Learners who chose either the instructor-paced or selfpaced method of instruction and were selected for the methods of their choice will demonstrate higher achievement on course content than those who were not selected for the method of their choice.

Hypothesis 4

Learners who chose either the instructor-paced or selfpaced method of instruction and were selected for the method of their choice will demonstrate a more positive attitude toward reading instruction and toward the course than those who were not selected for the method of their choice.

A multivariate analysis of covariance and the multivariate repeated measures analyses of variance were the statistical devices applied to these four questions.

Major Findings

Regarding the first two hypotheses stated above, two independent variables were examined. First, those students who were enrolled in the 8:00 a.m. scheduled class time were compared with those who were enrolled in the 9:00 a.m. scheduled class time. The significance level of this test was .84 and was therefore not significant. Second, methods of pacing were examined. The statistical measure yielded a significance level of .49 and also was not significant. Since both statistical tests failed to reveal significant differences, the first two hypotheses concerning differences in achievement and attitude of selfpaced and instructor-paced students were rejected.

To test the third and fourth hypotheses stated above, three tests were run, with the choice of pacing being the independent variable in all. In the first test, selfpacers who preferred this method of pacing were compared with self-pacers who had preferred instructor-pacing. The significance level of this test was .83 and was, therefore, not significant. In the second test, instructor-paced students who preferred this method of pacing were compared to the instructor-paced students who had preferred to be self-paced regarding achievement. The significance level was .22, which was not significant. In the third test, instructor-paced students who preferred this method of pacing were compared to the instructor-paced students who had preferred to be self-paced regarding attitude. The significance level was .46, which was not significant. Since all statistical tests failed to reveal significant differences, the last two hypotheses concerning differences in achievement and attitude of learners in preferred and non-preferred routes were rejected.

Consequently, no significant differences were found in attitude or achievement between self-pacers, instructor-pacers, students in preferred methods, or students in methods not preferred.

Other Findings

While the results of single univariate statistical tests cannot be considered significant because they cannot be considered independent of the results of the total multivariate statistical tests, an examination of the univariate tests did yield some interesting data. In every statistical test comparing self-pacers with instructorpacers, the unobtrusive attitude measures consistently favored instructor-paced students. When method of pacing was the source of dispersion in the first multivariate analysis of covariance, the significance level of .10 favored instructor-pacers. When method of pacing was the source of dispersion in the second multivariate analysis of covariance, the significance level of .02 again favored instructor-pacers. When a one-way analysis of covariance was used to detect more subtle differences, the significance level was .09 in favor of instructor-pacers. These findings all point to the possibility that instructor-paced students might have a more positive attitude.

The chi-square test of independence comparing the students' choice of pacing at the beginning of the course and at the end of the course did yield a highly significant finding. A greater number of students than what would be expected, significant at the .01 level, chose instructorpacing over self-pacing at the completion of the course. This indicates a final attitude favoring the instructorpaced method of instruction.

The chi square test of independence comparing each student's actual method of pacing with his end-of-thecourse preference yielded interesting findings. A greater number of students than expected (though not significant) stated a preference for instructor-pacing over self-pacing at the completion of the course regardless of their actual placement during the study. This again indicates a final attitude favoring the instructor-paced method of instruction.

Therefore, a difference favoring the instructorpaced students was noted in the unobtrusive attitude measures. This finding was strongly supported by the first chi-square measures which significantly favored instructor-paced students and tended to be supported by the second chi square measure which favored instructorpaced students to a lesser degree.

Conclusions

The following conclusions are drawn from the results of the study.

Hypothesis 1

Learners who are self-paced in the Basic Track of Educational 325A: Methods of Teaching Reading will demonstrate higher achievement of course content than those who are instructor-paced. No significant differences were found between self-paced students and instructor-paced students in achievement on course content.

Hypothesis 2

Learners who are self-paced in the Basic Track of Education 325A: Methods of Teaching Reading will demonstrate a more positive attitude toward reading instruction and toward the course.

No significant differences were found between self-paced students and instructor-paced students in attitude toward the course or reading instruction. It can be inferred from comments made on the Michigan State University Student Instructor Rating Form that the attitude of both groups was equally positive. Illustrative comments for both groups follow:

Self-pacers:

I learned more because of self-pacing.

I liked getting the material from tapes.

I loved self-pacing because there was no pressure.

Instructor-pacers:

The instructor was excited about reading so I was too.

The instructor was one of the best I've ever had at M.S.U.

Reading was a totally challenging and delightful course.

Hypothesis 3

Learners who chose either the instructor-paced or self-paced method of instruction and were selected for the method of their choice will demonstrate higher achievement on course content than those who were not selected for the method of their choice. No significant differences were found between students in preferred routes and non-preferred routes in achievement on course content.

Hypothesis 4

Learners who chose either the instructor-paced or self-paced method of instruction and were selected for the method of their choice will demonstrate a more positive attitude toward reading instruction and toward the course than those who were not selected for the method of their choice.

No significant differences were found between students in preferred routes and non-preferred routes in attitude toward the course or toward reading instruction. Again, it can be inferred from the comments made on the Michigan State University Student Instructor Rating Form that the attitude of both groups was equally positive. Illustrative comments from both groups follow.

Self-pacers:

I like working at my own pace. I like going at my own speed and selecting my own time.

Instructor-pacers:

I liked the pace of this class. I'm glad I didn't have to do self-pacing, the teacher made it more fun.

In addition, it is concluded that the unobtrusive attitude measures and chi-square measures which favored instructor-paced students warrant further investigation.

Implications

The conclusions of this study suggest four major types of implications. These are:

- (1) implications for developers of methods courses,
- (2) implications regarding alternative types of selfpacing,
- (3) implications regarding modified self-pacing, and
- (4) implications regarding the strengths of instructorpacing.

Developers of Methods Courses

This study found no significant differences in attitude and achievement of students who were either placed in or chose either self-pacing or instructor-pacing. This conclusion complies with the available research perused by this researcher and cited in Chapter II. It is concluded, then, that on the basis of the research data accumulated to date, the assumed effectiveness of self-pacing is unwarranted. Perhaps self-pacing is not a necessity of individualization of instruction. Perhaps other types of self-pacing or modified self-pacing will be found to be more effective than instructor-pacing. It appears that more empirical data should be collected before self-pacing is universally adopted in methods courses. As Kress and Gropper¹ stated, it is perhaps unsound to assume that instruction is individualized simply because each student is allowed to adopt his own pace and it is equally unsound to assume that instruction is not individualized simply because presentation tempos are externally determined with no student allowed to adopt his own pace. Their suggestion is that an instructional technology must specify under what conditions either self-pacing or instructorpacing can produce acceptable performance levels.

Alternative Types of Self-Pacing

This study was limited to a single type of selfpacing; one in which the students completed a semiprogrammed text while listening to previously prepared audio tapes of the instructor's lecture rather than attending the actual lecture at the regular class time. As indicated by the data reported herein, no differences in attitude and achievement were found between students attending class and those listening to the tapes.

However, it is possible that types of self-pacing other than ones utilizing audio tapes might result in significant differences. One area that could be investigated is the use of a totally programmed text instead of

¹Gerald C. Kress, Jr., and George L. Gropper, <u>Studies in Televised Instruction</u>, Report-N.D.E.A., VIIA-872-4 (ED003202), November, 1964.

audio-taped sessions. This would allow more freedom for the self-paced learners because a tape recorder would not be necessary in order to complete the material. The material could be completed whenever and wherever the students chose, but the learning would be even more impersonal. This might be dangerous since self-pacers in this study frequently made comments such as:

I missed not getting to know the instructor. Self-pacing is too impersonal.

Video-taped sessions, instead of audio-taped sessions, might lessen the degree of impersonal learning. As one student reflected,

I like the instructor's voice, but somehow it isn't enough.

Apparently students feel more personality characteristics are evident on video tapes than audio tapes. The problem with video tapes, however, is that it eliminates part of the freedom of time choice. In this study, students often listened to the cassette audio tapes into the late evening hours in their own living quarters. This arrangement would obviously not be possible using video tapes.

A third type of self-pacing could be independent modules with a choice of routes within each module. These choices would be printed material with performance evaluations, audio tapes with performance evaluations, video tapes with performance evaluations, and actual participation

in teaching situations with performance evaluations. Each student would then be given the freedom to choose a particular route to complete the module. This type of selfpacing allows the students to select a route for learning in accordance with his need for a more personal or less personal learning situation.

Modified Audio-Taped Self-Pacing

While an entirely different type of self-pacing might be considered, it is also possible that self-pacing by audio-tape would be more appropriate if modified slightly. The written and oral comments of students support this contention. These comments point to both a liking for the audio tapes and to specific suggestion for modifications.

Regarding student liking for self-pacing, their comments included:

Self-pacing increases self-discipline. This was the most rewarding methods class. It's great not to have the instructor get off the track. I felt I have had my own special tutor through this course. I think that I personally learn better when I

work independently.

I feel I learned the material more thoroughly by having to figure it out on my own.

Self-pacing is the best thing that happened to me. I feel that for myself, self-pacing is the best way for me to learn. Regarding student suggestions for modifying the audio-tape procedure, the following comments were made:

I did all the work at the end of the course. Could there be a schedule to follow next time? I would have benefited from the questions of

others.

One thing that bothered me about being a selfpacer was the fear that I was missing extra points brought out in a class discussion.

Could we have a self-pacing bulletin board so that we could be posted on what other self-pacers are doing?

Could there be weekly seminars where we could discuss the material and ask questions?

With the time pressure from other classes and other commitments, I found myself neglecting this class. I need the structure of due dates in order to keep up.

A possible solution to the above comments would be modification of self-pacing to allow self-selected students to pace themselves for a period of time with a minimum amount of the course content being completed for weekly or bi-weekly discussion groups. This would allow for a certain degree of freedom and yet retain some elements of time structure. The problem of this approach is the lessening of freedom. For instance, the student may have two weeks to self-pace through a particular module. Thus, the amount of time allowed for self-pacing is fairly short and more limiting than a situation in which a student is allowed to self-pace an entire course.

Another solution involving modified self-pacing could be one where students move in and out of self-pacing when they chose to and yet could move into instructor-pacing when they felt the material required a structured situation or when other commitments made self-pacing difficult for them. The problem of this method is one of answering several questions. For instance, what should be done with students who decide to move back into instructor-pacing at a point which is behind the instructor's schedule? Should special sessions be held to help them catch up? Should a new instructor-paced method be initiated at that point? Should only those students who are ahead of schedule be allowed to move into instructor-pacing?

One answer to the above questions could be selfpacing in conjunction with self-directed learning where students come in and out of scheduled discussion groups according to individual choice. Since they would be choosing their own sequence of learning, this would eliminate the problem of self-pacers who were behind in the schedule of instructor-paced classes. They could move into instructor-paced sessions at the beginning of each scheduled module regardless of whether they had completed prior modules. The problem with this method is one of prerequisite knowledge. If a module of learning has a prerequisite module, then the student should complete this prerequisite. This again comes back to the problem of students who are behind and have not yet learned the prerequisite knowledge.

As is seen, the questions for future research in self-pacing are many and varied. What are the effects of modified self-pacing? What are the effects of self-pacing combined with self-directed learning? And finally, what are the effects of self-pacing combined with modified self-directed learning?

Strengths of Instructor-Pacing

The seemingly more positive attitudes of the instructor-paced students creates some interesting questions and implications. As noted in the earlier discussion of modified audio-taped self-pacing, the students liked the self-paced method of instruction. The comments of the instructor-paced students reflect an equal liking for their method of instruction. Typical comments regarding instructor-pacing follow:

I enjoyed the personal experiences of the instructor.

All methods courses should be set up on this basis. This was the best class at M.S.U. The instructor was very enthusiastic. Classtime was a fun experience. Class was an invaluable experience. All the instructors are helpful.

The course was most rewarding and thoughtprovoking.

The instructor had an effective way of giving out reinforcements.

This course practices what it preaches.

My instructor should be a model for all instructors who teach methods courses.

Obviously, both methods of pacing were positively received. However, the statistical findings seemed to

indicate a more favorable attitude by instructor-paced learners. The univariate tests of unobtrusive attitude measures of the multivariate tests favored instructorpaced students regardless of whether they were in their preferred method or in a method not preferred. This finding was strengthened by the significant findings of the chi square measures using pre-choice, post-choice, and method of pacing. The reasons for this phenomena may be revealed in the following informal statements written by self-paced students who expressed unhappiness with that method of pacing. Examples of these comments follow:

I would like to be in a class so I could benefit from the class interaction.

I think I would have benefited greatly from the first-hand experiences that the instructor would relate in a class.

I feel better in a small group situation.

I found it very hard to comprehend the material over tapes.

Classroom structure gives you a chance to relate the material you think you know which is important.

I learn new material better in a situation where there is more interaction than in the self-pacing track.

I do like listening to ideas that other people have.

Implications of these informal comments and the statistical tests indicate that the group interaction of instructor-paced sessions and the regular personal contact of instructor and students available in instructorpaced sessions are powerful in shaping the attitudes of students toward the course and toward reading instruction. Investigation should be conducted to determine how these strengths can be incorporated into self-pacing.

A type of modified self-pacing in which students could work singly, in pairs, or in small groups might be possible. In this way, students could select the degree of group interaction that they felt they needed in discussing course content and in preparing for evaluations. This would establish a regular student-to-student contact for those who needed it, but the regular contact with an instructor is still missing. Instructors could schedule office hours for the students to come in and discuss the course content, but unless it is on a required basis students often fail to take advantage of this arrangement. Also, the problem of management becomes apparent. Does an instructor have enough time to schedule class sessions, small group sessions, and individual student sessions that are adequate for a methods course?

In conclusion to all of the above questions and solutions, research is needed to form a basis to decide whether or not to use self-pacing or modified self-pacing in undergraduate methods courses.

Recommendations

The following suggestions are recommended for future research concerned with self-paced or instructorpaced methods of instruction in undergraduate methods courses:
- Further investigation regarding self-pacing is necessary before it should be included in undergraduate methods courses.
- 2. Alternate types of self-pacing such as programmed texts, video tapes, and a combination of programmed texts, audio tapes, video tapes, and actual classroom experience need to be investigated.
- 3. Modified audio-tape self-paced methods of instruction where only certain amounts of content material are self-paced need to be investigated.
- Modified methods of self-pacing where students are free to move in and out of self-pacing need to be investigated.
- 5. There is a need to investigate self-pacing as an element of self-directed learning or modified self-directed learning.
- 6. There is a need to investigate paired student pacing and small group pacing as an element of individualization in undergraduate methods courses.

7. There is need to determine exactly what techniques do measure the effectiveness of instructor-paced instruction versus self-paced instruction in preservice methods courses.

Summary

This study, designed to determine differences in attitude and achievement between students who were selfpaced and who were instructor-paced in an undergraduate reading methods course, reveals that the method of selfpacing used in this study is no more advantageous than instructor-pacing. However, the tendency of the attitude data to support instructor-pacing warrants further investigation, as do new and modified versions of selfpacing. REFERENCES CITED

REFERENCES CITED

- Acheson, Keith, and Olivero, James L. "Educational Laboratories and Teacher Education." Journal of Teacher Education, XXI, No. 3 (Fall, 1970), pp. 325-34.
- Allan, J. I., and Richardson, R. H. "Programmed Learning--A Multimedia Approach." Programmed Learning, IV, No. 3 (July, 1967), pp. 191-95.
- Allen, D. W., and Cooper, J. M. Model Elementary Teacher Education Program. FS5.258:58022. Washington, D.C.: USOE Bureau of Research, Government Printing Office, 1968.
- Allen, Wendell C.; Cady, Lillian, V.; and Drummond, William H. "Performance Criteria for Educational Personnel Development: A State Approach to Standards." Journal of Teacher Education, XX, No. 2 (Summer, 1969), pp. 133-35.
- Braam, Leonard S., and Oliver, Marvin E. "Undergraduate Reading Education." The Reading Teacher, XXIII (February, 1970), pp. 426-28.
- Burdain, Joel L., and Lanzillotte, Kaliopee, eds. A <u>Reader's Guide to the Comprehensive Models for</u> <u>Preparing Elementary Teachers.</u> Washington, D.C.: <u>ERIC Clearing House on Teacher Education and the</u> American Association of Colleges for Teacher Education, 1969.
- Campbell, Vincent. "Self-Direction and Programmed Instruction for Five Different Types of Learning Objectives." <u>Psychology in the School</u>, I (October, 1964), pp. 348-59.
- Carpenter, C. R., and Greenhill, L. P. <u>Comparative</u> <u>Research on Methods and Media for Presenting</u> <u>Programmed Courses in Math and English.</u> University Park, Pa.: University Division of Instructional Services, The Pennsylvania State University, 1963.

- Clarke, S. C. T. "Designs for Programs of Teacher Education." Research in Teacher Education. Edited by B. Othanel Smith. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1971.
- Cuban, Larry. "The Cardozo Peace Corp Project: Experiment in Urban Education." Social Education, XXVIII (1964), pp. 446-49.
- Dallett, Kent. "The Role of Self-Pacing in Learning to Memorize." ED 003006. Unpublished doctoral dissertation, University of California, 1964.
- Daniel, W. J., and Murdoch, P. "Effectiveness of Learning from a Programmed Text Compared to a Conventional Text Covering the Same Material." Journal of Educational Psychology, LIX (1968), pp. 425-31.
- Deterline, William A. "Practical Problems in Program Production." <u>Programmed Instruction</u>. NSSE Sixty-Sixth Yearbook. Edited by Phil C. Lange. Chicago: University of Chicago Press, 1967, p. 204.
- DeVault, M. Vere. <u>Wisconsin Elementary Teacher Education</u> Project. Vol. II. Madison, Wisc.: School of Education, The University of Wisconsin, 1969.
- Dickson, G. E. <u>Educational Specifications for a Compre-</u> hensive <u>Elementary Teacher Education Program</u>. OE-58023. Washington, D.C.: USOE Bureau of Research, Government Printing Office, 1968.
- Elam, Stanley. Performance-Based Teacher Education--What is the State of the Art? American Association of Colleges for Teacher Education, December, 1971.
- Emery, Harriet. "Mathematics for Prospective Elementary Teachers in Community College: A Comparison of Audio-Tutorial and Conventional Teaching Materials and Modes." Unpublished doctoral dissertation, Michigan State University, 1970.
- Finn, Jeremy D. <u>Multivariance--Univariate and Multivariate</u> <u>Analysis of Variance and Covariance: A Fortran</u> <u>IV Program.</u> Buffalo: State University of New York, 1967.

- Frye, C. H. "Group Versus Individual Pacing in Programmed Instruction." A.V. Communication Review, II (July-August, 1963), pp. 124-29.
- Graham, Richard A. "Educational Change and the Teacher Corp." Phi Delta Kappan, LI, No. 6 (February, 1970), p. 208.
- Grubb, R. E., and Selfridge, L. D. "Computer Tutoring in Statistics." <u>Computers and Automation</u>, XIII, No. 3 (1964), pp. 20-26.
- Hansen, Donald N. "Computer Assistance with the Educational Process." Review of Educational Research (December, 1966), pp. 588-603.
- Hapkiewicz, Walter. "Course Evaluation--Educational Psychology 411." An evaluation measurement. East Lansing, Mich.: Department of Educational Psychology, Michigan State University, Fall, 1971.
- Hartley, James. "Some Factors Affecting Student Performance in Programmed Learning." Programmed Learning and Educational Technology, V, No. 3 (July, 1968), p. 216.
- Hazard, William. "The Tutorial and Clinical Approach to Teacher Education." Evanston, Ill.: Northwestern University Press, 1966.
- Hough, J. Specifications for a Comprehensive Undergraduate and Inservice Teacher Education Program for Elementary Teachers. FS5.258:58016. Washington, D.C.: USOE Bureau of Research, Government Printing Office, 1968.
- Houston, W. R. <u>Behavioral Science Elementary Teacher</u> <u>Education Program.</u> FS5.258:58024. Washington, D.C.: USOE Bureau of Research, Government Printing Office.
- Hulteen, Curtis, and Crist, Robert L. "The Group Use of Programmed Instructional Materials." <u>Programmed</u> <u>Learning and Educational Technology</u>, VI, No. 1 (January, 1969), pp. 4-11.
- Jamieson, G. H., James, Pamela E., and Leytham, G. W. H. "Comparisons Between Teaching Methods at the Post-Graduate Level." <u>Programmed Learning</u>, XVI, No. 4 (October, 1969), pp. 243-49.

- Johnson, C. E.; Shearron, G. F.; and Stauffer, A. J. <u>Georgia Educational Model Specifications for the</u> <u>Preparation of Elementary Teachers.</u> FS5.258019. Washington, D.C.: USOE Bureau of Research, Government Printing Office, 1968.
- Johnson, Raymond F., and Fiel, Nicholas J. <u>Structured</u> <u>Learning and Training Environments: A Preparation</u> <u>Laboratory for Advanced Mammalian Physiology Pro-</u> <u>ject.</u> Report No. 203, Educational Development Program. East Lansing, Mich.: Michigan State University, March, 1967.
- Joyce, B. R. The Teacher Innovator: A Program to Prepare Teachers. FS5.258:58021. Washington, D.C.: USOE Bureau of Research, Government Printing Office, 1968.
- Kersey, Harry A., Jr. "Florida Atlantic University's Center of Discovery: A New Dimension in Teacher Education." Journal of Teacher Education, XXI, No. 2 (Summer, 1970), pp. 224-32.
- Kress, Gerald C., Jr., and Gropper, George L. Studies in Televised Instruction. Report-N.D.E.A., VIIA-872-4, (ED003202), November, 1964.
- Lang, Phil C., ed. <u>Programmed Instruction: The Sixty-Sixth Yearbook of the National Society for the Study of Education</u>. Part II. Chicago: The University of Chicago Press, 1967.
- LeBaron, W. Analytical Summaries of Specifications for Model Teacher Education Programs. Washington, D.C.: USOE Bureau of Research, 1969.
- Lewis, Brian N., and Pask, Gordon. "The Theory and Practice of Adaptive Teaching Systems." <u>Teaching</u> <u>Machines and Programmed Learning: Data and Direc-</u> <u>tions.</u> Edited by Robert Glaser. Washington, <u>D.C.</u>: Department of Audio Visual Instruction, National Education Association, 1964, pp. 248-58.
- Leytham, G. W. H. "A Programmed Second-Year Course on the Psychology of Learning." Programmed Learning and Educational Technology, VII, No. 4 (October, 1970), pp. 280-81.

- Lumsdaine, A. A. Cited by W. J. Carr, <u>Sixty-Sixth</u> Yearbook of the National Society for the Study of Education, Part II. Edited by Phil C. Lange. Chicago: University of Chicago Press, 1967.
- Martin, Clessen. Evaluation of the Elementary Methods Courses (Handout). East Lansing, Mich.: Department of Elementary and Special Education, Michigan State University, May, 1969.
- McNemar, Quinn. Psychological Statistics. New York: John Wiley and Sons, Inc., 1955.
- Monroe, George E., and Talmage, Harriet. "Cooperative Program in Urban Teacher Education." Journal of Teacher Education, XXI, No. 4 (Winter, 1970), p. 469.
- Moore, D. L. "Group Teaching by Programmed Instruction." Programmed Learning, IV (1967), pp. 37-46.
- Noble, Grant. "A Study of the Relationship Between Ability, Performance, Attitudes, Inclinations, and Speed of Progress Using Intrinsic Programmed Instruction." Programmed Learning and Educational Technology, VI, No. 2 (April, 1969), pp. 109-20.
- O'Brien, Dean W. Continued Effort Toward Better Schools. Madison, Wisc.: University Press, 1966.
- Ott, Jack M.; Thomson, Barbara S.; and Merriman, Howard O. "Prescription for Pedagogy: A Teacher Education Program." Journal of Teacher Education, XXI, No. 3 (Fall, 1970), p. 352.
- Pikas, Arnold. "Comparisons Between Traditional and Programmed Learning as a Function of Passive Performance and Active Application and Time Lapse Application." <u>Programmed Learning and Educational Technology</u>, VI, No. 1 (January, 1969), pp. 20-25.
- Pressey, Sidney L. "Certain Major Psycho-Educational Issues Appearing in the Conference on Teaching Machines." <u>Automated Teaching: The State of the</u> Arts. Edited by Galanter. New York: Wiley, 1959.

<u>Educational Acceleration, Appraisals, and Basic</u> <u>Problems.</u> Bureau of Educational Research Monographs, No. 21. Columbus, Ohio: The Ohio State University Press, 1949.

- Robbins, Glaydon D. "The Impact of Current Educational Change Upon Teacher Education." Journal of <u>Teacher Education</u>, XXII, No. 2 (Summer, 1969), pp. 182-87.
- Rosenshine, Barak, and Furst, Norma. "Research on Teacher Performance Criteria." <u>Research in Teacher Educa-</u> <u>tion: A Symposium.</u> Edited by F. Othaniel <u>Smith. Englewood Cliffs, N.J.: Prentice-Hall,</u> Inc., 1971.
- Sawiris, M. Y. "An Experimental Study of Individual and Group Learning Using a Linear Geometry Program." <u>Programmed Learning and Educational Technology</u>, III, No. 3 (October, 1966), pp. 146-53.
- Sax, Gilbert. Empirical Foundation of Educational Research. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1968.
- Schalock, H. D. A Competency Based, Field Centered, Systems Approach to Elementary Teacher Education. FS5.258:58020. Washington, D.C.: USOE Bureau of Research, Government Printing Office, 1968.
- Shankman, Florence. "Innovations in Teacher-Training for Inner City Schools." The Reading Teacher, XXIV (May, 1971), pp. 744-47.
- Sixth Cycle Teacher Corp Proposal, (revised May 30, 1971). Lansing School District, Lansing Model Cities. East Lansing, Mich.: College of Education, Michigan State University, and Center for Urban Affairs, Michigan State University.
- Southworth, H. C. <u>A Model for Teacher Training for the</u> <u>Individualization of Instruction</u>. FS5.258:58017. Washington, D.C.: USOE Bureau of Research, Government Printing Office, 1968.
- Sowards, J. W. <u>A Model for the Preparation of Elementary</u> School Teachers. FS5.258:58018. Washington, D.C.: USOE Bureau of Research, Government Printing Office, 1968.
- Smith, B. Othaniel, ed. Research in Teacher Education: A Symposium. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1971.

- Stolurow, Lawrence M. "Programmed Instruction." <u>Encyclopedia of Educational Research</u>. 4th ed. (1969).
- Thompson, Alvin H. "Berkley's Urban Task Force: A Teacher Education Project to Prepare Secondary Community-Oriented Teachers for the Inner City." Journal of Teacher Education, XXI (Summer, 1970), pp. 233-39.
- Thompson, Ralph H. "Where Teacher Education Programs Fail." Journal of Teacher Education, XXI, No. 2 (Summer, 1970), pp. 264-69.
- Turner, Richard L. "Conceptual Foundations of Research in Teacher Education." Research in Teacher Education: A Symposium. Edited by B. Othaniel Smith. Englewood Cliffs, N.J.: Prentice-Hall, 1971, pp. 10-36.
- Wiley, David E., and Bock, R. Darrell. "Quasiexperimentation in Educational Settings: Comments." School Review, LXXV (Winter, 1967), pp. 353-66.
- Wilhelms, Fred T. "The San Francisco State College Teacher Education Project." The Journal of Teacher Education, XII (June, 1961), pp. 209-15.
- Windley, Vivan O. "A New Look at Teacher Education." Urban Review, V (March, 1972), pp. 3-11.
- Yelon, Steven. "Student Reactionaire." An Evaluation measurement, Educational Development Program. East Lansing, Mich.: Michigan State University, 1971.

APPENDICES

.

APPENDIX A

PRE-TEST AND POST-TEST MEASURES

APPENDIX A

PRE-TEST AND POST-TEST MEASURES

PRE-TEST

Education 325A

DIRECTIONS: The following test items are designed to assess your entering behavior regarding the performances developed in the Basic Track of Education 325A. Read each question carefully, select the best answer, and record your answer on the answer sheet. Please use a number Two pencil. 1. Reading is important in today's society because:

(1.1.1)

- a. we teach it in schools
 - b. it is nearly always needed to be a happy, productive, wellinformed citizen
 - c. it is almost the only way to learn about the world and yourself
 - d. reading is not really important in this television era and will be less important in the future
 - e. books are the main means of passing on knowledge
- 2. Reading can best be defined as:

(1.1.2)

- a. decoding written symbols
- b. the ability to visually discriminate among written symbols and the sounds they make
- c. meaningful interpretation of printed symbols involving visual and auditory perception, comprehension and cognition
- d. the verbal decoding of printed symbols using oral enunciation
- e. the meaningful interpretation of symbols involving visual and auditory acuity, visual and auditory discrimination and cognitive skills

3. Carla reverses letters when reproducing them. Her problem can be (1.2.1) classified as:

- a. cognitive
- b. perceptual
- c. dyslexia
- d. sensory
- e. immaturity

4. John cannot remember details from stories he reads or hears. His (1.2.1) problem can be classified as:

- a. cognitive
- b. perceptual
- c. global
- d. sensory
- e. immaturity

5. Harry comes from an emotionally stable home, he has a high I.Q., (1.2.2) and is healthy. Harry can be best described as:

- a. having all of the necessary direct prerequisites for reading
- b. having all of the necessary indirect prerequisites for reading
- c. having some important direct prerequisites for reading
- d. having some important indirect prerequisites for reading
- e. having all of the necessary indirect and direct prequisites

Leo has 20/20 vision and more than adequate hearing capabilities. 6. (1.2.3) He can best be described as having: a. all of the necessary direct readiness traits b. all of the necessary indirect readiness traits c. some of the necessary general readiness traits d. some of the necessary specific readiness traits e. all of the special and general readiness traits Johnny is having problems in recognizing highly similar letters. 7. (1.2.1) His problem can best be described as: a. sensory b. percpetual c. cognitive d. dyslexia e. all of the above Which of the following are specific readiness traits? 8. (1.2.3) a. good eating habits, high I.Q., good eyesight b. high score on readiness test, wide experience background, good home c. auditory discrimination, visual discrimination, visual acuity d. auditory awareness, visual acuity, I.Q. of 90 or higher e. visual discrimination, oral enunciation, mental age of 6 Which of the following would not be used to determine reading ex-9. (2.3.1) pectancy? a. chronological age b. I.Q. c. mathematical computation ability

- d. motivation and interest
- e. listening ability

10. Which of the following statements is most true about the indicators (2.3.2) of expectancy?

- a. viewed alone they provide adequate basis for establishing a realistic expectancy level
- b. viewed together they can provide an adequate basis for establishing a realistic expectancy level
- c. viewed individually they have no inherent weaknesses
- d. viewed together they are of little use in providing a basis for establishing a realistic expectancy level

11. (2.3.3) Linda is beginning the 5th grade and has an I.Q. of 110, she is presently reaching at a low sixth grade level. At what level can you expect Linda to be reading when she enters sixth grade.

- a. 6+
- b. 10+
- c. 9+
- d. 7+
- e. 12+

12. A formal assessment instrument like the Stanford Reading Achieve(2.4.1) ment test gives an average score for a number of subtests. This score is generally:

- a. the child's instructional level
- b. the child's frustration level
- c. the child's independent level
- d. an inaccurate measurement of any of the above

13. Bo has an independent level of 4.0. Which of the following scores (2.4.2) must he have had in the fourth grade level graded oral reading paragraphs?

- a. 90% word recognition 90% comprehension
- b. 80% word recognition 80% comprehension
- c. 100% word recognition 80% comprehension
- d. 99% word recognition 90% comprehension

14. John scored as follows on the graded oral paragraphs:
(2.4.3) word recognition control

 word recognition
 comprehension

 4th
 100
 90

 5th
 100
 82

 6th
 100
 68

 7th
 90
 60

14. His difficulty can best be described as:

(2.4.3)

- a. perceptual
- b. sequen**C**ing
- c. decoding
- d. cognitive

15. Examine the following oral reading paragraph which has errors noted (2.4.4) on it in the standard notation system and select the best statement concerning the student.

Muff/is/a/little/yellow/kitten. She/drinks/milk. She/sleeps/Op a/chair X She/does/not like/to get wet.

a. he did alright but is not proficient at this level

- b. he reads hesitatingly but with adequate skill
- c. he cannot read material at this level
- d. I wish all my kids read like this
- e. he knows most of the words but has problems with oral reading

16. Max hates social studies and has to be forced to read his social
(2.5.1) studies textbook. The book is not too difficult for him. His problem can best be classified as:

- a. recreational reading problem
- b. in need of remediation by a specialist
- c. content area reading problem
- d. lack of fluency in social studies
- e. social studies underachiever

17. Jake is at the application stage of development. Which of the (2.6.1) following behaviors would you <u>not</u> expect from him?

a. ability to sequence events
b. ability to determine author bias
c. ability to discriminate among letters
d. ability to find main idea

18. Which of the following behaviors could you expect from a humanistic (2.7.1) teacher?

- a. attempts to teach all kids to read from the same basal text
- b. attempts to reinforce all behaviors with verbal praise
- c. attempts to set and teach to realistic expectations for each child
- d. attempts to let children out to recess five minutes early
- e. attempts to organize at least three reading groups to meet individual needs

19. Which of the following could best be used to diagnose individual (2.7.2) differences in reading?

- a. grade placement, trade book selection, I.Q. scores
- b. chronological age, sex, standardized achievement test scores
- c. emotional maturity, CA 39, grade placement
- d. trade book selection, graded oral reading paragraphs, I.Q. scores
- e. race, sex, age

20. Which of the following would be the best crucial element in a class-(3.8.1) room in which individual needs are being met?

- a. realistic expectation for each child
- b. four different levels of basal readers
- c. independent activities that the child can select to work on
- d. a variety of materials at different levels
- e. a classroom library full of appropriate selections

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21. The first thing you do before you ask Jim to do a specific instruc-(4.9.1) tional task is to:

- a. give him some practice
- b. teach him the skills needed for that task
- c. give him a pre-test to determine whether he needs to do the task
- d. give him precise directions he needs to do the task
- e. find out if Jim wants to do the task

22. You make a presentation of the shape and sounds of the letter K.

(4.10.2) In your presentation you use the say it slow - say it fast, and VAKT techniques. You have used:

- a. diminishing reinforcement
- b. visual and auditory orientation
- c. visual enunciation
- d. visual and auditory highlights
- e. McAshan approach to introducing new letters

23. When you assign a student a practice exercise it should <u>not</u> include (4.10.5) which of the following characteristics.

- a. frequent repetitions of desired response
- b. self checking to provide immediate feedback
- c. can be done independently
- d. arranged sequentially with most difficult tasks last
- e. coordination with the skill previously taught

24. Which of the following statements is most accurate: (4.10.2)

- a. crutches should be diminished gradually throughout presentation
- b. crutches should not be implemented until the practice
- c. crutches should be eliminated before reinforcement
- d. crutches are present throughout the lesson, including the application
- e. crutches should be diminished gradually throughout the attender

25. Which of the following statements most accurately describes an (4.10.1) attender?

- a. the focusing of pupils attention on the crucial elements of the task to be learned
- b. attending to and discriminating between sounds
- c. the act of paying attention when given a specific assignment
- d. a measure of attentiveness via auditory perception
- e. attending to the aspects of individualization in a skill episode

26. Highlighting is recognized as an integral part of the pre-test, (4.10.2) the use of highlighting?

- a. highlighting is especially important for children with learning disabilities
- b. highlighting should be used to draw attention to specific "pieces of the puzzle" in teaching skill
- c. highlighting should be used if the pupils have short attention spans
- d. highlighting is especially important in the practice of a skill
- e. highlighting refers to modeling behavior exhibited by the teacher when teaching a skill

27. The application step of the pre-test, teach, post-test strategy (4.10.6) is best defined as:

- a. apply what the teacher says to focus your attention to "parts of the puzzle"
- b. reading passages with various degrees of comprehension
- c. a technique where the teacher applies the skill taught and asks the child to model her
- d. applying skills taught to analyze a new word
- e. applying learned skills to the daily reading activities

28. Positive reinforcement is extremely important in teaching and it (4.10.4) can take a variety of forms. Which of the following statements about the use of reinforcement is most true?

- a. positive reinforcement is fine but should be used only if all else has failed
- b. positive reinforcement is fine but should be used only if negative reinforcement has failed
- c. positive reinforcement is the same as bribery and should not be used to force children into learning
- d. positive reinforcement is fine as long as it isn't in the form of material goods
- e. positive reinforcement is fine and should be used to strengthen correct responses

29. One of the prerequisite skills to reading is the ability to make (5.11.1) a sound/symbol connection. This skill can best be classed as:

- a. primarily a visual discrimination skill
- b. primarily an auditory discrimination skill
- c. primarily a comprehension skill
- d. a combination of a and b
- e. a combination of b and c

You flash a word with a tachistoscope and ask the child to repro-30. (5.11.4) duce the word he saw. You are testing which of the following?

- a. visual memory
- b. visual sequencing
- c. visual discrimination
- d. phonetic analysis
- e. visual acuity

31. Which of the following would be the best attender for teaching a (5.11.5) sound/symbol meaning skill?

- a. visual attender
- b. visual and auditory attender
- c. auditory and cognitive attender
- d. does not need an attender
- e. visual, auditory, and cognitive attender

32. Which of the following are the four major techniques for identify-(5.12.1) ing words?

- a. phonetic analysis, dictionary, sight words, generalizations
- b. content, structural analysis, dictionary, guessing
- c. phonetic analysis, sight words, structural analysis, context
- d. structural analysis, phonics, word attack, content study
- sounding out, VAKT, sight words, dictionary e.

Jeri scored as follows on a tachistoscopic test: 33. (5.12.3)

| flash | | analysis |
|--------------|--------|---------------|
| <u>r-r-r</u> | road | ro-ad |
| <u>j-j-j</u> | ground | jroon |
| <u>k-k-</u> | know | <u>k-no</u> |
| | drink | <u>dr-ink</u> |
| t-t- | turkey | tru-key |

Which of the following statements is best concerning her performance?

a. she has an inadequate sight vocabulary

- b. she is an overanalytical reader
- c. she is over relying on content
- d. she needs more work with phonics
- e. she is over relying on visual memory

Before introducing a unit in the basal reader on zoo animals, 34. Miss Jones takes her children on a field trip to the local muni-(5.13.2) cipal zoo. The approach she is utilizing can best be described as:

- a. the on sight-word approach
- b. the VAKT approach
- c. the student-fulfillment approach
- d. the language-experience approach
- e. the visitation approach

35. After you have taught the <u>at</u> vowel phonogram, you will be able to (5.14.1) realistically expect the students to decode which of the following groups of words?

a. fat, far, fall
b. can, cat, call
c. bat, rat, tar
d. sat, saw, hat
e. mat, man, map

36. When Mr. Read teaches his children to use specific prefixes to attack unknown words, he is using which of the following skills? (5.14.4)

- a. structural analysis
- b. phonetic analysis
- c. flash analysis
- d. task analysis
- e. context analysis

When writing an instructional episode for a sound/symbol meaning 37. skill, which of the following would not be used?

(5.14.5)

- a. visual highlighting
- b. diminishing attenders
- c. a pre-test on sound/symbol meaning
- d. auditory highlighting
- e. positive reinforcement

Mrs. Comp is a fourth grade teacher. When she is teaching a content 38. area lesson she should attempt to control which of the following (6.15.1), conditions of comprehension?

- a. intelligence, decoding, background experiences, purpose
- b. purpose, intelligence, experience, interest
- c. motivation, experience, purpose, decoding
- d. emotional development, experience, purpose, intelligence
- e. concept development, experience, purpose

39. You are studying a unit on the New England area in your 5th grade (6.15.2) social studies. Which would be the best method of adopting this lesson to a pupil reading at the 2nd grade level?

- a. show a movie about some of the aspects of life in New England
- b. record the unit on an audio cassette for him
- c. prepare a study guide for him
- d. have the unit read orally in class
- e. make no adaptation, after all he is in 5th grade

 40. Mr. Book provided Mary with a science book which she could easily
 (6.15.3) read. Which of the following conditions of comprehension did Mr. Book neglect to meet?

- a. motivation, intelligence, depgraphia
- b. purpose, experience, interest
- c. concept development, content, intelligence
- d. purpose, emotional maturity, attractiveness of material
- e. goal setting, intelligence, continuity, content

41. Identifying author bias requires which type of thinking? (6.16.1)

- a. comprehensive
- b. critical
- c. inferential
- d. relationship
- e. coxial

42. "I put my money in a bank".(6.16.3) Identify the content words.

a. I, money, bank
b. I, put, money, bank
c. put, my, money
d. put, in, bank

e. money, in, bank

43. "I put my money in a bank".
(6.16.4) Identify the function words.

a. put, money, in, bank
b. AV, in, a
c. put, in, bank
d. I, my, money, bank
e. I, put, money, in, bank

44. Which of these statements is most true about implementing the pre-(6.16.10) test, teach, post-test strategy for teaching evaluative thinking skills?

- a. the pre-test, teach, post-test strategy cannot be applied to these high level skills
- b. instruction must be on a one-to-one ratio
- c. instruction should be conducted in groups based on skill needs
- d. instruction should be conducted in groups based on instructional level
- e. instruction of these skills is better taught at the high school level
- 45. Eefore Mr. Sim, the fourth grade teacher, can begin to teach speci(7.17.1) fic skills he needs to know what skills are lacking for each child.
 What is the best course of action for Mr. Sim to follow?
 - a. starting with the first skill, test each child until he fails a skill
 - b. use last Spring's achievement tests to hypothesize about where each child would be in the skill cluster and test from there
 - c. have each child read orally from a 4th grade basal and decide from this information where to start testing
 - d. have each child take a placement test to determine his approximate location in the skill cluster
 - e. use the Sullivan pre-test to determine pupil capabilities in relation to skill clusters

46. According to your instructor, probably the best use of a basal read-(8.18.1) er is:

- a. as tinder for starting a campfire
- b. to provide the daily oral reading needed in a good program
- c. for application of specific skills previously taught
- d. to develop attenders for your students
- e. as a total reading program

47. Your application of basal readers and content area textbooks in (8.19.1) the pre-test, teach, post-test strategy will depend on:

- a. the reading ability to your students
- b. the school curriculum as outlined by your supervisor
- c. the teacher's guide
- d. your analysis of skills developed in certain passages
- e. your student's interest in these supplementary materials

48. When developing a recreational reading program, you must remember (8.20.1) that:

- a. recreational reading is generally an out of school activity
- b. recreational reading provides a sequential skill development program through self-selection
- c. recreational reading provides an opportunity to apply skills previously learned
- d. recreational reading can often pin-point emotional disturbances
- e. recreational reading is a rewarding and vicarious experience in self-determination

49. Recreational reading is important for many reasons but it should (8.20.1) be an integral part of the reading program. Which of the follow-

ing statements best describes how recreational reading can be used in the pre-test, teach, post-test strategy?

- a. as an application of skills and a tool for developing reading enthusiasm
- b. as practice for oral reading and intonation patterns
- c. as role playing and a tool for developing reading enthusiasm
- d. as a pre-test to determine expectancy
- e. as a teaching tool for presenting new skills and a variety of reading experiences

50. Which of the following statements about daily classroom routines (9.21.1) most accurately reflects the position taken by your instructor and by SYSTEMATIC READING INSTRUCTION?

- a. routines are fundamentally important and regular instruction should not begin until they are firmly established
- b. routines are the trademark of an uncreative teacher
- c. routines should be firmly established in the first week of school and rigidly upheld throughout the year
- routines are necessary only in some classrooms and the decision regarding implementation should be left until you get to know your pupils
- e. routines are necessary only if you are a strict disciplinarian

POST-ASSESSMENT

Education 325A

Directions: This is a criterion measure to assess your mastery of the objectives of the basic track of the course.

Read each question carefully, select the <u>most</u> correct answer, and record that answer on your answer sheet. Be sure to use a No. 2 pencil.

1. Reading is important in today's society because:

(1.1)

- a. we teach it in schools.
 - b. it is nearly always needed to be a happy, productive, wellinformed citizen.
 - c. it is the only way to learn about the world and yourself.
 - d. reading is not really important in this television era and will be less important in the future.
 - e. books are the mode of all human learning.

2. Reading can best be defined as:

(1.2)

- a. decoding written symbols.
- b. the ability to visually discriminate among written symbols and the sounds they make.
- c. meaningful interpretation of printed symbols involving visual and auditory perception, comprehension and cognition.
- d. the verbal decoding of printed symbols using oral enunciation.
- e. the meaningful interpretation of symbols involving visual and auditory acuity, visual and auditory discrimination and cognitive skills.
- Johnny is having problems in recognizing highly similar letters.
 (2.1) His problem can best be described as:
 - a. sensory.
 - b. perceptual.
 - c. cognitive.
 - d. dyslexia.
 - e. all of the above.

4. Harry comes from an emotionally stable home, he has an I.Q. of 138, (2.2) and is healthy. Harry can be best described as:

- a. having all of the necessary direct prerequisites for reading.
- b. having all of the necessary indirect prerequisites for reading.
- c. having some important direct prerequisites for reading.
- d. having some important indirect prerequisites for reading.
- e. having some of the necessary indirect and direct prerequisites.

| 5. | Which of the following are specific readiness traits? | | | |
|-------------|---|----|--|--|
| (2.3) | a. good eating habits, high I.Q., good eyesight. b. high score on readiness test, wide experience background, | | | |
| | c. auditory discrimination, visual discrimination, visual | | | |
| | d. auditory awareness, visual acuity, I.Q. of 90 or higher. e. visual discrimination, oral enunciation, mental age of 6. | | | |
| 6. (3.1) | Which of the following would not be used to determine reading expectancy? | | | |
| | a. chronological age. b. I.Q. c. mathematical computation ability. d. motivation and interest. e. listening ability. | | | |
| 7. (3.2) | Which of the following statements is most true about the indica- tors of expectancy? | | | |
| | a. viewed individually they can provide a rationale for establis ing instructional technique. b. viewed alone they provide adequate basis for establishing a realistic expectancy level. c. viewed together they can provide an adequate basis for establishing a lishing a realistic expectancy level. | h- | | |
| | d. viewed individually they have no inherent weaknesses. e. viewed together they are of little use in providing a basis for establishing a realistic expectancy level. | | | |
| 8. (3.3) | Linda is beginning the 5th grade and has an I.Q. of 112. She is presently reading at a low sixth grade level. At what level can you expect Linda to be reading when she enters sixth grade? | | | |
| | a. 6+ b. 10+ c. 9+ d. 7+ e. 8.0 | | | |
| 9. (4.1) | A formal assessment device, such as the Stanford Reading Tests, cannot give you which of the following bits of information: | | | |
| | a. a specific overview of the child's reading performance. b. a specific grade level equivalent score. | | | |

- c. a specific stanine for the averages of the subtest scores.d. a specific reading skill the child is lacking.

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10. Bo has an independent level of 4.0. Which of the following scores (4.2) must he have had in the fourth graded oral reading paragraphs?

- a. 90% word recognition 90% comprehension
- b. 80% word recognition 80% comprehension
- c. 100% word recognition 80% comprehension
- d. 99% word recognition 90% comprehension

11. Examine the following oral reading paragraph which has errors
(4.3) noted on it in the standard notation system and select the best statement concerning the student.

Muff/is/a/little/yellow/kitten. She/drinks/milk. She/sleeps/on/a/chair/ She/does/not like/to get wet.

- a. he did alright but is not proficient at this level.
- b. he reads hesitatingly but with adequate skill.
- c. he should not read material at this level.
- d. I wish all my kids read like this.
- e. he knows most of the words but has problems with oral reading.
- Max hates social studies and has to be forced to read his social
 (5.1) studies textbook. The book is not too difficult for him. His problem can best be classified as:
 - a. recreational reading problem.
 - b. in need of remediation by a specialist.
 - c. content area reading problem.
 - d. lack of fluency in social studies.
 - e. social studies overachiever.
- 13. Lisa reads well but during free reading period she always reads
- (5.2) and rereads <u>Charlotte's Web</u>. This behavior has been going on all year and she seems uninterested in reading any other books. Her problem is:
 - a. content area deficiency.
 - c. recreational reading deficiency.
 - d. recreational proficiency.
 - d. sight word deficiency.
- 14. Jake reads with varying rates of speed, he can find the main idea,
 (6.1) identify author bias and propaganda techniques. Jake is at which stage of reading development?
 - a. initial mastery.
 - b. discrimination.
 - c. application.
 - d. speed reading.
 - e. power.

- a. attempts to teach all kids to read from the same basal text.
- b. attempts to reinforce all behaviors with verbal praise.
- c. attempts to set and teach to realistic expectations for each child.
- d. attempts to let children decide what their educational needs are.
- e. attempts to organize at least three reading groups to meet individual needs.

16. Which of the following could best be used to diagnose individual (7.2) differences in reading?

- a. grade placement, trade book selection, I.Q. scores.
- b. chronological age, sex, standardized achievement test scores.
- c. emotional maturity, CA 39, grade placement, MA.
- d. trade book selection, graded oral reading paragraphs, I.Q. scores, listening ability.
- e. race, sex, age, I.Q.

17. When you visit Sam's class you find that the children are not sitting
(8.1) in straight rows but rather in groups. One group is working on an arithmetic assignment, another group is being taught a specific reading skill, some pupils are reading library books and others seem to be engaged in independent activities. Which of the follow-ing best describes Sam's classroom teacher?

- a. His teacher must be an advocate of free schools.
- b. His teacher does not exert enough control over the classroom.
- c. His teacher should know that students generally can't work independently of the teacher.
- d. His teacher seems to be effectively attempting to meet the individual needs of his pupils.
- e. His teacher evidently doesn't care if the kids do anything or not.

18. Ms. Flotz wants to teach her children to be able to reproduce
(11.4) from memory the letters a, t, u, p, i, n. What procedure should
(1.1) she follow to insure that her students are able to do this?

- a. teach all the pupils and then pretest to determine whether they have mastered the skill.
- b. test each pupil on the ability to reproduce the letters, teach those who fail the test, and then posttest to determine mastery.
- c. teach the skill to your bottom group and test to determine mastery.
- d. test each child on his ability to visually discriminate between the letters, teach the skill to those who fail test and then posttest to determine mastery.

19. Which of the following would be the best attender for a child who (10.1) is going to be taught how to associate the sound he hears at the (11.6) beginning of the word violin with the letter v?

- a. This will be easy. You must look at the beginning letter and listen carefully.
- b. I'm going to try and fool you. What sound does this letter make (hold up v)?
- c. Today we're going to do something that is hard. I want you to listen carefully to the beginning of each word and to look carefully at the beginning letter.
- d. Now we're going to try something hard. Look carefully at the beginning letter in this word, now listen carefully as I say the word. Where do you hear the \underline{v} sound? At the beginning or at the end?
- e. Sit up and pay attention or you won't be going out for recess.

20. Miss Johnson was teaching the matching of spoken words beginning (10.2) with the same consonant sound. During her presentation, she said (11.5) the words slowly, stretching out the beginning consonant sound. Then she said the word fast as the puril would permulae here it

- Then she said the word fast as the pupil would normally hear it. This is an example of:
 - a. a psychological attender.
 - b. highlighting the pieces of the puzzle.
 - c. a pretest.
 - d. diminishing crutches.

21. You are teaching a group of children the <u>at phonogram</u>. Which state-(10.3) ment is the most true about pupil response with this skill?

- (14.1)
- a. The pupils should respond a minimum of 9 times each according to research.
- b. Each pupil should be led to make many correct responses throughout the lesson.
- c. Pupils who don't seem to understand the task should make the same response until they get the right answer.
- d. Pupils should learn by trial and error by responding to quizzes.
- e. Response is not necessary in teaching this skill.

22. Mrs. Wing is teaching her children to recognize words with the 'ing'

(10.4) structural ending. She is using root words the child knows and

- (14.4) adds 'ing' to this known word. Which of the following is the best method of reinforcement?
 - a. Reinforce a child each time he recognizes the root word.
 - b. Reinforce the child for responses intermittently throughout the lesson.
 - c. Reinforce the child for every correct response.
 - d. Reinforce the child each time he attempts to sound out the word.

23. Miss Thomas taught a group of pupils to visually discriminate

(10.5) between the consonants \underline{m} and \underline{n} , \underline{p} and \underline{q} , and \underline{b} and d. As a prac-

- (11.3) tice exercise, she gave these students a workbook page which contained sets of four letters. Three of the letters were the same, and one was different. When the pupil's completed the practice exercise, Miss Thomas collected the papers, corrected them and returned them to the pupils the next day. Which statement <u>best</u> describes Miss Thomas's procedures:
 - a. Miss Thomas had included all of the characteristics of a good practice exercise.
 - b. Miss Thomas has not provided that a correct rather than an incorrect response is being made at each repetition.
 - c. Miss Thomas has not provided for immediate feedback.
 - d. b and c.

24. Mr. J. Doe taught his children to use the beginning letter of a (10.6) word and context to figure out unknown words. Select the best (11.8) application activity:

- a. This sound-symbol meaning skill is applied in the science lesson by attacking unknown words in science books.
- b. The pupils will apply this to the next skill in the hierarchy;
 i.e. sound-symbol connection.
- c. The pupils will read a group of sentences, prepared by the teacher, which have a word missing but this initial letter is present. The pupil decides on a word which fits the sentence.
- d. Ask the children questions about what sounds selected letters make.

25. One of the prerequisite skills to reading is the ability to make (11.1) a sound/symbol connection. This skill can best be classified as:

- a. primarily a visual discrimination skill.
- b. primarily an auditory discrimination skill.
- c. primarily a comprehension skill.
- d. a combination of a and b.
- e. a combination of b and c.
- 26. Given spoken words ending with the m, d, l, or voiceless s sounds,
 (11.2) the learner identifies the ending letter as m, d, l or s. This objective is primarily:
 - a. a reproduction task.
 - b. a memory task.
 - c. a discrimination task.
 - d. an association task.
 - e. a structural analysis task.

27. Which of the following would be the best attender for a visual (11.7) sequencing skill?

- a. visual attender.
- b. no attender needed.
- c. auditory attender.
- d. psychological attender.
- e. (A & D)

28. Which of the following are the four major techniques for identify-(12.1) ing words?

- a. phonetic analysis, dictionary, sight words, generalizations.
- b. content, structural analysis, dictionary, guessing.
- c. phonetic analysis, sight words, structural analysis, context.
- d. structural analysis, phonics, word attack, content study.
- e. sounding out, VAKT, sight words, dictionary.

29. When Luke attacks words by identifying prefixes and suffixes, he (12.2) is using structure to assist in recognizing the unknown word. This can best be classified as:

- a. instant recognition.
- b. sight word.
- c. word analysis.
- d. visual memory.
- e. B and D.

30. Jeri scored as follows on a tachistoscopic test:

(12.3)

| Flash | | Analysis |
|-------|--------|----------|
| r-r-r | road | ro-ad |
| j-j-j | ground | jroon |
| k-k- | know | k-no |
| | drink | dr-ink |
| t-t- | turkey | tru-key |

Which of the following statements best describes Jeri's performance?

- a. she has an inadequate sight vocabulary.
- b. she is an overanalytical reader.
- c. she is over relying on content.
- d. she needs more work with phonics.
- e. she is over relying on visual memory.

31. When teaching the sight words <u>come</u>, <u>the</u>, <u>look</u>, the teacher had the (13.1) pupils spell the word aloud, trace the word with their fingers,

and write the word in the air. Which technique for teaching sight words was being used?

- a. word analysis.
- b. association.
- c. VATK
- d. emotional connotation.
- e. structural analysis.

32. Before introducing a unit in the basal reader on zoo animals, Miss (13.2) Jones takes her children on a field trip to the local municipal zoo. The approach she is utilizing can best be described as:

- a. the on sight-word approach.
- b. the VATK approach.
- c. the student-fulfillment approach.
- d. the language-experience approach.
- e. the visitation approach.

33. Select the best application activity for a phonetic generalization (14.3) skill.

- a. mark the vowels as long or short in a word list.
- b. decode vowel phonograms in a basal text selection.
- c. illustrate the two vowels awalking rule.
- d. sound out phonetically in content Dolch words.
- e. apply it to the next skill which is sound/symbol meaning.

34. Ms. Smythe wants to teach a group of children to look at the begin-

- (14.5) ning letter of an unknown word in a sentence and to try to find a word that would fit in that sentnece that begins with that letter. She would do best to follow which of the following procedures.
 - a. highlight the beginning letter visually for this sound/symbol connection skill.
 - b. highlight the beginning letter auditorily for this sound/symbol meaning skill.
 - c. highlight visually the whole word for this sound/symbol meaning skill.
 - d. highlight visually the beginning letter for this sound/symbol meaning skill.
 - e. highlight auditorily the beginning letter for this sound/symbol meaning skill.

35. What are the three major conditions of comprehension? (15.1)

- a. intelligence, decoding, experience.
- b. decoding, experience, purpose.
- c. emotional development, purpose, sex.
- d. confidence, MA, decoding.
- e. age, grade, I.Q.

36. You are studying a unit on the New England area in your 5th grade (15.2) social studies. Which would be the best method of adopting this textbook lesson to a pupil reading at the 2nd grade level?

- a. show a movie about making maple sugar in New England.
- b. record the assigned text on an audio cassette for him.
- c. prepare an outline of the chapter for him.
- d. have the unit read orally by the class.
- e. make no adaptation since he is in 5th grade.

37. You select a 6th grade social studies book which concentrates on

- (15.3) Ancient Civilizations. The book has an attractive cover and excellent illustrations. The text has an excellent format and should present no decoding problems to your students. It has important passages highlighted and it is accompanied by an excellent teacher's guide. You order the book knowing you can teach from it because of the background you have from your history minor. What major condition of comprehension have you overlooked in selecting this text?
 - a. purpose-setters
 - b. background experience of pupils
 - c. decoding
 - d. grade placement
 - e. interest

38. Identifying author bias requires which type of thinking? (16.1)

- a. comprehensive.
- b. critical.
- c. differential.
- d. relationship.
- e. coaxial.

39. Select the statement which is most correct. The four major compre-(16.2) hension skills include:

- a. fact-inference, evaluation, word meaning, classification.
- b. function, fact-inference, evaluation, organization.
- c. organization, context, purpose, evaluation.
- d. function word skills, content word skills, purpose skills, evaluation skills.

40. 'The man ran to the school.' Identify the content words. (16.3)

- a. man, ran, to, school.
- b. man, school.
- c. the, to, the.
- d. the, the.
- e. the, man, ran.

41 'A king rules by force or right.' Identify function words. (16.4)

- a. A, by, or.
- b. A, by, or, right.
- c. king, rules.
- d. king, force, right.
- e. A, rules, by, or.

42. On "Sesame Street" they play a game called "One of these things

- (16.6) doesn't belong." The kids are presented with 4 items, 3 of which are similar and one which is disimilar. For example, a milk carton, ice cream carton, cottage cheese carton and an ICICLE. This game provides practice in which of the following skills?
 - a. evaluative thinking.
 - b. divergent thinking.
 - c. sequencing.
 - d. relationships.
 - e. classifying.

43. You wish to teach your children to locate the main idea in a story. (16.7) Select the best practice activity for this skill.

- a. read the story to the pupils and have them make up a title for it.
- b. have the students read the story and draw a picture illustrating the most exciting event.
- c. have the pupils label all the content words in a chronological order.
- d. have the children read short paragraphs and throw out any sentences which don't fit the theme of the paragraph.
- e. have the children write short paragraphs.

44. Ms. Smith has had her class read a section on the American Revolu-

(16.8) tion in their social studies book. Which of the following questions is a heuristic question?

- a. When did the Revolutionary War end?
- b. Who was the American commander?
- c. How did General Washington cross the Delaware River?
- d. Would you have fought without being paid like many of the soldiers did?
- e. How many soldiers were killed in the war?

45. Which of these statements is most true about implementing the pre-(16.10) test, teach, posttest strategy for teaching evaluative thinking skills?

- a. the pretest, teach, posttest strategy cannot be applied to these high level skills.
- b. instruction must be on a one-to-one ratio.
- c. instruction should be conducted in groups based on skill needs.
- d. instruction should be conducted in groups based on instructional level.
- e. these skills are better taught at the high school level.

46. Before Mr. Sim, the fourth grade teacher, can begin to teach specific (17, 1) word recognition skills he needs to know what skills are lacking

- (17.1) word recognition skills he needs to know what skills are lacking for each child. What is the best course of action for Mr. Sim to follow?
 - a. starting with the first skill, test each child until he fails a skill.
 - b. use last Spring's achievement tests to hypothesize about where each child would be in the skill cluster and test from there.
 - c. have each child read orally from a 4th grade basal and decide from this information where to start testing.
 - d. have each child take a placement test to determine his approximate location in the skill cluster.
 - e. use the Sullivan pre-test to determine pupil capabilities in relation to skill clusters.

47. According to your instructor, probably the best use of a basal (18.1) reader is:

- a. as material for only your bottom group, letting the good readers select their own materials.
- b. to provide for daily oral reading needed in a good program.
- c. for application of specific skills previously taught.
- d. to develop attenders for your students.
- e. as a total reading program.

48. Select the best application activity for an inferential thinking (19.1) skill.

(16.9)

- a. have the child write inferential questions on passages he has read.
- b. have the child use the skill to answer inferential questions in a social studies book.
- c. give the students a passage and a list of questions, and have the students then identify all of the inferential questions.
- d. have the children ask each other inferential questions.
- e. you can't apply inferential thinking skills.

49. When developing a recreational reading program, you must remember (20.1) that:

- a. recreational reading is generally out-of-school activity.
- b. recreational reading provides a sequential skill development program through self-selection.
- c. recreational reading provides an opportunity to apply skills previously learned.
- d. recreational reading can often pin-point emotional disturbances.
- e. recreational reading, according to research, does not contribute to the acquisition of reading skills.

Which of the following statements about daily classroom routines 50. most accurately reflects the position taken by your instructor (21.1) and by SYSTEMATIC READING INSTRUCTION?

- a. routines are fundamentally important and regular instruction should not begin until they are firmly established.
- b. routines are the trademark of an uncreative teacher.
- c. routines should be firmly established in the first week of school and rigidly upheld throughout the year.
- d. routines are necessary only in some classrooms and the decision regarding implementation should be left until you get to know your pupils.
- e. routines are necessary only if you are a strict disciplinerian.
APPENDIX B

ATTITUDE QUESTIONNAIRE MEASURE

BASIC TRACK EVALUATION

Instructions: Read each item carefully and circle the answer that most closely describes your feelings. If you circle other, please explain.

- 1. In conducting reading instruction, I believe:
 - 1. it is the <u>teacher's</u> responsibility to make very certain each student understands what is expected of him.
 - 2. It is the teacher's responsibility to make certain that students understand some of what is expected of them and it is the student's responsibility to make certain that he understands what other things are expected of him.
 - 3. It is the student's responsibility to make certain he understands what is expected of him.
- 2. As a reading teacher I will attempt to understand students by:
 - 1. trying to place myself in their position.
 - 2. reading a lot of child development books.
 - 3. expecting the student to place himself in my position.
- 3. In order to have all my students achieve their maximum potential I will primarily:
 - 1. rate every performance so they'll know where they stand.
 - 2. tell them where they stand.
 - 3. help every student instead of passing judgment.
- 4. When teaching my own class, I will:
 - be a strong leader and direct the learning pace of all of my pupils.
 - direct the learning pace of some of my pupils and allow some of my pupils to pace themselves.
 - 3. allow my pupils to pace themselves through the specified tasks to be learned.

- 5. In situations in which a diligent student fails, I believe that I, as the teacher, should:
 - 1. feel that the student didn't work hard enough.
 - 2. that both the student and I should work harder.
 - 3. provide alternate ways to achieve the objective.
- 6. In teaching a task to a child, I believe that:
 - 1. if he listens carefully to all I say, he does not need to respond or perform during the lesson.
 - 2. if he listens carefully and I explain it thoroughly he does not need to respond or perform during the lesson.
 - 3. he must perform or respond frequently during any instruction.
- 7. As the instructional leader in a classroom, the teacher should:
 - 1. demand the attention and respect of all the students.
 - 2. expect the attention and respect of some of the students.
 - 3. earn the attention and respect of all of the students.
- 8. I consider myself a success during reading instruction if I:
 - 1. elicit a specified response from each learner.
 - 2. elicit a specified response from most of the learners.
 - 3. concern myself only with the best presentation I can teach.

- 9. A student achievement in reading instruction is based on:
 - 1. my subjective teacher judgment on specified tasks according to established minimum criteria.
 - 2. performance and my judgment on the specified tasks according to established minimum criteria.
 - 3. performance on specified tasks according to established minimum criteria.

10. When I teach reading:

- 1. student's views will always be considered important.
- 2. student's views will sometimes be considered important.
- 3. I will not consider student's views because I know what they need.

11. When teaching I will:

- never welcome constructive criticism because I would lose face.
- 2. sometimes welcome constructive criticism if the situation calls for it.
- 3. always welcome constructive criticism for improving instruction.

12. As a reading teacher I'll admit mistakes:

- l. even if I "lose face."
- 2. if only a few students know it.
- 3. if I don't have to "lose face."

- 13. When I begin to teach:
 - 1. I will maintain a friendly approachable attitude for only those who are introverts.
 - 2. I will maintain a friendly approachable attitude for all the average children.
 - 3. I will maintain a friendly approachable attitude for all students.
- 14. As a reading teacher I will:
 - 1. try to have my instruction approximate as closely as possible the intended application situation.
 - 2. not worry if instruction and application are closely approximated as long as transfer occurs.
 - 3. not worry as long as instruction is learned.
- 15. I intend, as part of my skill instruction in reading, to:
 - 1. teach the skill, not be concerned with cueing since my students will already know the important pieces.
 - 2. cue the students whom I know need to be told the important pieces of the skill.
 - 3. cue all of my students to the important pieces of the skill.
- 16. When I teach reading skills to my pupils I will:
 - 1. never use reinforcement.
 - 2. sometimes use reinforcement.
 - 3. always use reinforcement.

- 17. As a teacher of reading I will:
 - 1. give extra assistance to some pupils if they need it.
 - 2. give extra assistance to most pupils if they need it.
 - 3. give extra assistance to all pupils if they need it.
- 18. During reading instruction I will have individual conferences and small group instruction:
 - 1. for all my students.
 - 2. for the slow students.
 - 3. for none of my students.
- 19. As a reading teacher I will provide material beyond minimum performance for:
 - 1. only select students.
 - 2. all my average students.
 - 3. each student who desires it.

20. I believe a teacher:

- must help each student develop and maintain a healthy self-image.
- must help slow students develop and maintain healthy self-images.
- 3. must help those students who I think need it to develop and maintain a healthy self-image.

- 21. In order that students will know how they are progressing I will:
 - 1. comment only on what needs strengthening.
 - 2. comment only on what was done well.
 - comment on what needs strengthening as well as what was done well.
- 22. When I teach during reading skill instruction, I:
 - 1. will always specify for the pupil what skill is to be learned and how that learning will be measured.
 - 2. will sometimes specify for the pupil what skill is to be learned and how that learning will be measured.
 - 3. feel it is not necessary for the pupil to know what skill is to be learned and how that learning will be measured.
- 23. As a reading teacher I will measure student's performances in reading skill instruction:
 - 1. at the end of each reading period.
 - 2. at the end of the lesson.
 - 3. throughout the lesson.
- 24. I believe that failure occurs during reading instruction:
 - 1. the teacher must take the responsibility for this failure.
 - 2. the teacher must take part of the responsibility and the student must take part of the responsibility for this failure.
 - 3. the student must take the responsibility for this failure.

- 25. I believe that it is the teacher's responsibility to:
 - 1. demand the students' attention.
 - 2. captivate part of students' attention and demand the attention of the rest of the students.
 - 3. captivate the students' attention.
- 26. When I am teaching reading, I intend:
 - 1. to decide the ways to satisfy my students' need.
 - 2. to let some of my students choose the ways to satisfy their needs.
 - 3. to let my students choose the ways to satisfy their needs.
- 27. Which of the following is most accurate?
 - 1. My anxiety level about taking the final exam dropped throughout the course.
 - 2. My anxiety level about taking the final exam remained the same throughout the course.
 - 3. My anxiety level about taking the final exam rose throughout the course.
- 28. Which of the following is most accurate?
 - 1. My anxiety level about conferring with instructors dropped throughout the course.
 - 2. My anxiety level about conferring with instructors remained the same throughout the course.
 - 3. My anxiety level about conferring with instructors remained the same throughout the course.

- 29. When listening to an instructor, I:
 - 1. would prefer to be able to stop the instructor, clarify the content in my mind and have previous points repeated if necessary.
 - 2. would like to note any problem I have and ask them later.
 - 3. would prefer that the instructor continue without interruptions.
- 30. When learning something new, I do better:
 - 1. when I am in a large group.
 - 2. when I am in a small group.
 - 3. when I am alone.
- 31. When listening to an instructor, I prefer:
 - 1. to be able to ask clarifying questions.
 - 2. to have another time to ask questions.
 - 3. not to have lectures interrupted by student questions.
- 32. I feel that the content of 325A was presented:
 - 1. inadequately in terms of my individual learning style.
 - 2. in a manner that sometimes correlated with my learning style and sometimes did not.
 - 3. adequately in terms of my individual learning style.

- 33. When learning something new, I learn:
 - 1. best when I work by myself.
 - 2. best when I'm in a small group of 2 or 3 persons.
 - 3. best when in a class of 35.
- 34. In taking 325A, I felt:
 - 1. that the learning pace never correlated with my own rate.
 - 2. that the learning pace sometimes correlated with my own rate.
 - 3. that I had the freedom to comprehend material at my own rate.
- 35. Which of the following is most accurate?
 - 1. My anxiety level about the outside assignments dropped throughout the course.
 - 2. My anxiety level about the outside assignments remained the same throughout the course.
 - 3. My anxiety level about the outside assignments rose throughout the course.
- 36. In assessing my attention when listening to the 3251 instructor:
 - 1. I had consistently good attention.
 - 2. There were times when my attention wandered.
 - 3. I had frequent periods of inattentiveness.

- 37. Which of the following is most accurate?
 - 1. This has been one of the most interesting and stimulating college classes I've had.
 - 2. This has been a moderately interesting and stimulating college class.
 - 3. This has been one of the most boring and monotonous college classes I've had.
- 38. For the basic track:
 - 1. I always knew what was expected.
 - 2. I sometimes knew what was expected.
 - 3. I never knew what was expected.
- 39. In the basic track:
 - 1. I learned very little.
 - 2. I learned a few things.
 - 3. I learned a great deal.
- 40. When I encountered difficulty performing an outside assignment or preparing for a quiz:
 - 1. assistance was always available.
 - 2. assistance was sometimes available.
 - 3. assistance was never available.

- 41. At the beginning of each module:
 - 1. I never knew what my specific duties were.
 - 2. I sometimes knew what my specific duties were.
 - 3. I always knew what my specific duties were.
- 42. Relative to the amount I learned:
 - 1. it exceeded the time spent in preparation for quizzes and outside assignments.
 - 2. it matched the time spent in preparation for quizzes and outside assignments.
 - 3. it was less than the time spent in preparation for quizzes and outside assignments.
- 43. Which of the following is most accurate?
 - 1. I never found myself thinking about the basic track outside of class.
 - 2. I sometimes found myself thinking about the basic track outside of class.
 - 3. I often found myself thinking about the basic track outside of class.
- 44. Which of the following is the most accurate?
 - 1. This has been one of the most motivating and thought provoking courses I've had.
 - 2. This has been a moderately motivating and thought provoking course.
 - 3. This has been the least motivating and thought provoking class I've had.

APPENDIX C

LISTING OF THE CHOICES IN THE

ADDITIONAL MATERIALS FILE

APPENDIX C

LISTING OF THE CHOICES IN THE ADDITIONAL MATERIALS FILE

Component I

- Guidelines for Evaluating a Basic Reading Program, New York: Harcourt, Brace, Jovanovich, Inc., 1971.
- 2. Sentence Completion Questionnaire. Unpublished material used in the Reading Clinic, Michigan State University.

Component II

1. Sharing Books:

Unpublished material used in Education 325A: Methods of Teaching Reading, Michigan State University, Winter, 1972.

2. Films available for viewing:

Elementary School Children (Part I): Each Child is Different, \$3.50, c-a, 17 minutes, MSU-UM.

Elementary School Children (Part II): Discovering Individual Differences, \$5.00; 25 minutes, c-a, MSU-UM.

Individual Differences, \$4.50, 22 minutes, c, U.M.

3. Story telling. Unpublished material which includes an excerpt from:

Huck, Charlotte S., and Kuhn, Doris Young, Children's Literature in the Elementary School, 2nd ed., New York: Holt, Rinehart, and Winston, Inc., 1968, pp. 661-63.

Component III

1. A film available for viewing:

Maintaining Classroom Discipline, \$4.50, 20 minutes, c, MSU-UM.

- Primary Activities, Vol. 36, No. 1, ed. by Virginia Kelahan, Glenview, Ill.: Scott, Foresman and Company, September, 1971.
- 3. Middle Grade Activities, Vol. 37, No. 1, ed. by Nancy LaMair, Glenview, Ill.: Scott, Foresman and Company, Fall, 1971.

Component IV

1. Teach a reading game.

Unpublished material used in Education 325A: Methods of Teaching Reading, Michigan State University, Winter, 1972.

2. Give a pre-test.

Unpublished material used in Education 325A: Methods of Teaching Reading, Michigan State University, Winter, 1972.

Component V

1. Individual Word Recognition Test.

Unpublished material used in the Reading Clinic, Michigan State University.

2. Personal Word Card File.

Unpublished material used in the Reading Clinic, Michigan State University.

3. Kinesthetic Techniques to Teach Sight Words.

Unpublished material used in the Reading Clinic, Michigan State University. Component VI

1. Some Ideas for Vocabulary Development in the Early Elementary Grades.

Unpublished material used in Education 325A: Methods of Teaching Reading, Michigan State University.

2. The Effectiveness of Words and the Author's Purpose.

Unpublished material used in Education 325A: Methods of Teaching Reading, Michigan State University.

3. Vague and Precise Words.

Unpublished material used in Education 325A: Methods of Teaching Reading, Michigan State University.

4. Suggestions for Developing Vocabulary in the Upper Elementary Grades.

Unpublished material used in Education 325A: Methods of Teaching Reading, Michigan State University.

5. Semantics: Denotative and Connotative Meaning.

Unpublished material used in Education 325A: Methods of Teaching Reading, Michigan State University.

Component VII

1. A Placement Test.

Unpublished material used in Education 325A: Methods of Teaching Reading, Michigan State University.

2. Teach an Instructional Episode.

Unpublished material used in Education 325A: Methods of Teaching Reading, Michigan State University. 3. Application Situation: "Lotta Wants to Grow."

Unpublished material which includes an excerpt from Children on Troublemaker Street by Astrid Lindgren, translated from the Swedish by Florence Lamborn. Illustrated by Louis S. Glanzman, New York: Viking, 1954.

Component VIII

1. Using the Language Experience Approach to Build Sight Vocabularies.

Unpublished material used in the Reading Clinic, Michigan State University.

2. 50 Ways to Raise Bookworms.

Hillevich, Robert, <u>50 Ways to Raise Bookworms</u> or Using Independent Reading, a service bulletin, New York: Houghton Mifflin Company.

3. A film available for viewing:

Reading for Interest in the Social Studies, \$4.00, 11 minutes, color, c-a, U.M.

4. Let's Talk About Phonics.

Brake, Rachel G., Education Today, Bulletin 31, "Let's Talk About Phonics," Columbus, Ohio: Charles E. Merrill Book, Inc.

5. A Reading Teacher's Notebook.

Schottman, Thomas A. "How Does a School Staff Go About Considering a New Elementary Reading Program," <u>Reading Teacher's Notebook</u>, Vol. 11, No. 1, New York: Harcourt, Brace, and Jovanovich.

Component IX

1. Helping Children Explore the Author's Craft.

A resource booklet for teachers, Glenview, Ill.: Scott, Foresman and Company, 1967. 2. A film for viewing:

Tips for Teachers, \$4.25, 19 minutes, c, M.S.U.

3. Approaches to Reading Instruction.

Unpublished material used in Education 325A: Methods of Teaching Reading, Michigan State University.

4. A Listing of Children's Magazines.

Unpublished bibliography of children's magazines used in the Reading Clinic, Michigan State University. APPENDIX D

WORKSHOPS CHOICES

| Room 228 | Panel Discussion Student teachers discuss reading problems encountered during their field experience. Limit: 50 All grade levels | <u>Diagnosis with the</u> <u>CA 60</u> . Interpreting <u>data</u> typically found in cumulative record folders. Limit: 30 Grades 2-8 |
|----------|---|--|
| Room 226 | Interpreting In-* telligence Tests. Uses, advantages, and disadvantages of individual I.Q. tests. Limit: 30 All grade levels | Principles of Reme- dial Reading. Dis- cussion of princi- ples useful in work- ing with severely disabled readers. Limit: 35 All grade levels |
| Room 113 | Building Your Own Informal Inventory. Instruction on building your own inventory. Includes video demonstra- tion. Limit: 35 Grades 2-8 | Dr. D. Alam on <u>Reading</u> <u>Instruction in the</u> <u>Open Classroom.</u> <u>Creating</u> alternatives to the traditional model in teaching reading. Limit: 40 All grade levels. |
| Room 111 | Dr. Wm. Durr, Pres. of International Reading Assn. and Sr. Editor of Houghton-Mifflin Basal series. How a Basal Reading Series Is Built. A description of the steps and effort that goes into basal series. Limit: 50 All grade levels. | Dr. R. Marquard on Listening, Language, and Reading Instruction. An examination of the interelation- ships among language skills with specific "hows." Includes some group partici- pation and demon- stration. Limit: 30 All grade levels. |
| | January 19* | J a nuary 26* |

Schedule of Workshop Offerings. The following chart shows the schedule of offerings for workshops.

| | Room 111 | Room 113 | Room 226 | Room 228 |
|-------------|---------------------|--------------------|----------------------|------------------------|
| February 2* | Dr. J. Fleming, | Dr. B. Van Roekel, | Demonstration of | Student-Oriented |
| | Dept. of Special | Sr. Editor for | an Instructional | Talk Session with |
| | Education. Learn- | Harper & Row Basal | Episode. A video | Dr. Duffy. An |
| | ing Strategies | Reading Series and | taped lesson | open-ended session |
| | and Skills, Part I. | Harper Row tests, | utilizing the stpes | in which any student |
| | Activities high- | A Test-Maker Talks | of an instructional | questions about read- |
| | lighting the skills | About Readiness | episode. Limit: 50 | ing or the course |
| | needed by both | Tests. A dis- | All grade levels | will be entertained. |
| | teachers and pupils | cussion of the | | Come with your ques- |
| | for successful | steps and proce- | | tions prepared. |
| | achievement. | dures in building | | Limit: 20 |
| | Limit: 50 | a standardized | | Recommended for all |
| | All grade levels | readiness test. | | |
| | | Limit: 35 | | |
| | | For grades K-2 | | |
| February 9 | Part II of Learning | The Berieter- | Homemade Materials | Teaching Beginning |
| I | Strategies and | Engleman (Distar) | Exhibition and dis- | Reading with ITA. A |
| | Skills with Dr. J. | Approach to Begin- | cussion of teacher- | description and |
| | Fleming. To attend | ning Reading. A | made teaching mater- | evaluation of an |
| | this workshop you | discussion of the | ials. Video-taped | approach to beginning |
| | must have attended | uses, advantages, | Limit: 50 | reading which utilizes |
| | Part I last week. | and disadvantages, | For all grade levels | a phonemic alphabet. |
| | | of a highly | | Includes examination |
| | | structured method. | | of materials avail- |
| | | Limit: 35 | | able. Limit: 35 |
| | | Grades K-3 | | For Grades K-3 |
| | | | | |

| | Room 111 | Room 113 | Room 226 | Room 228 |
|--------------|--------------------|----------------------|-------------------|-----------------------|
| February 16* | Dr. D. Nickerson, | Ms. M. McLaughlin | Individualized | Performance |
| | Dir. of Teacher | pn Rebuttal to | Reading. A | Contracting. A |
| | Corps program | Distar: Teaching | discussion of the | discussion of the |
| | for preparing | Reading Through | uses, advantages, | implications of |
| | inner-city | Language | and disadvantages | the recent emphasis |
| | teachers. Reading | Experience. A | of using many | on accountability |
| | and Language | description of a | types of printed | and performance |
| | Problems of Youth. | method which is | material as the | contracting. Limit: |
| | Will include a | less structured | basis of your | 35 All grade levels. |
| | consideration of | than Distar. | reading program. | |
| | programs and | Limit: 35 Grades | Limit: 50 All | |
| | techniques for | K-3 | grade levels. | |
| | developing skill | (Designed as a | | |
| | in urban teaching. | follow-up to a | | |
| | Limit: 35 For | Distar session | | |
| | grades K-4 | last week.) | | |
| | | | | |
| February 23 | Dr. J. Snoddy | Demonstration of | Determining the | Commercial Materials. |
| | on Teaching | a Comprehension | Difficulty of a | A description and |
| | Reading Study | Lesson. A video- | Textbook. | examination of some |
| | Skills. Ways to | taped comprehen- | Demonstration and | of the commercial |
| | organize, teach | sion lesson using | practice in using | reading programs |
| | and provide | the principles of | a readability | currently in use. |
| | practice with | a good instruc- | formula to assess | Limit: 35 For grades |
| | skills for | tional episode. | the difficulty | 4-8 |
| | obtaining | Limit: 50 All | level of a | |
| | information from | grade levels. | content textbook. | |
| | printed material. | | Limit: 35 Grades | |
| | Limit: 30 Grades | | 3-8 | |
| | 4-8 | | | |
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| | Room 111 | Room 113 | Room 226 | Room 228 |
|---------|--|--|--|--|
| March 1 | Ms. Y. Waskin on <u>Reading Activit</u> - <u>ies for the Able</u> <u>Reader</u> . How to organize the class- room to accomodate the special reading needs of the gifted reader. Limit: 40 Grades 4-8 | Reading Rate and Speed Reading. Discussion of the various rates in reading and the place of speed reading in the curriculum. Limit: 35 For grades 4-8 | Building Study Guides. How to build and use study guides to control the conditions of comprehension when teaching in the content areas. Limit: 35 For grades 4-8 | Commercial Materials. A description and examination of some of the commercial reading programs currently in use. Limit: 35 For grades K-3 |
| March 8 | Dr. J. LePere on the <u>Application</u> of <u>Critical</u> <u>Thinking Skills</u> of <u>Reading</u> <u>Matter</u> . A demonstration of ways to use children's books to develop critical reading thinking. Limit: 25 For all | Simulated Class- room Problems. Film shows a typical problem of comprehension instruction, with students partici- pating in the solving of the problem. Limit: 35. for grades 2-8 | A Demonstration in <u>Recreational Read- ing</u> . Suggestions on how to use recreational read- ing and how to inplement a program including a video- taped demonstration of typical activities. Limit: 35 For all grade levels | Opportunities for <u>Professional Growth</u> . <u>Discussion of pro-</u> fessional organiza- tions, journals, and possible avenues for graduate study in reading & related areas. Limit: 35 For all grade levels. |

APPENDIX E

STUDENT INSTRUCTIONAL RATING FORM

| MICHIGAN STATE UNIVERSITY Student Instructional Rating System Form | SAIf you strongly agree with the statement A If you agree with the statement |
|---|---|
| Please omit any of the items which do not pertain to the course that you are rating. For example, if you have had no homework assignments in this course (leave blank) those items pertaining to | NIf you <u>neither</u> agree nor disagree DIf you <u>disagree</u> with the statement SDIf you <u>strongly disagree</u> with the statement |
| homework. With a pencil respond to the items using the KEY. | KEY SA A N D SD |

| usi | ng the KEY. | 1 | | | | |
|------|---|------|----|---|---|------|
| | | | SA | A | N | D SD |
| 1. | The instructor was enthusiastic when presenting course material. | 1. | | | | |
| 2. | The instructor seemed to be interested in teaching. | 2. | | | | |
| 3. | The instructor's use of examples or personal experiences helped to get points across in class. | 3. | | | | |
| 4. | The instructor seemed to be concerned with whether the students learned the material. | 4. | | | | |
| 5. | You were interested in learning the course material. | 5. | | | | |
| 6. | You were generally attentive in class. | 6. | | | | |
| 7. | You felt that this course challenged you intellectually. | 7. | | | | |
| 8. | You have become more competent in this area due to this course. | 8. | | | | |
| 9. | The instructor encouraged students to express opinions. | 9. | | | | |
| 10. | The instructor appeared receptive to new ideas and others' viewpoints. | 10. | | | | |
| 11. | The student had an opportunity to ask questions. | 111. | | | | |
| 12. | The instructor generally stimulated class discussion. | 12. | | | | |
| 13. | The instructor attempted to cover too much material. | 13. | | | | |
| 14. | The instructor generally presented the material too rapidly. | 14. | | | | |
| 15. | The homework assignments were too time consuming relative to their contribution to your understanding of the course material. | 15. | | | | |
| 16. | You generally found the coverage of topics in the assigned readings too difficult. | 16. | | | | |
| 17. | The instructor appeared to relate the course concepts in a systematic manner. | 17. | | | | |
| 18. | The course was well organized. | 18. | | | | |
| 19. | The instructor's class presentations made for easy note taking. | 19. | | | | |
| 20. | The direction of the course was adequately outlined. | 20. | | | | |
| 21. | You generally enjoyed going to class. | 21. | | | | |
| 22. | | 22. | | | | |
| 23. | Instructor may insert three (e) items in these spaces. | 23. | | | | |
| 24. | | 24. | | | | |
| STUD | ENT BACKGROUND: Select the most appropriate alternative. | | | | | |
| 25. | Was this course required in your degree program? | 25. | | | | |
| 26. | Was this course recommended to you by another student?] | 26. | | | | |
| 27. | What is your overall GPA? (a) 1.9 or less (b) 2.0-2.2 (c) 2.3-2-7 (d) 5-6 (e) 7 or more | 27. | | | | |
| 28. | How many other courses have you had in this department? (a) none (b) $1-2$ (c) $3-4$ (d) $5-6$ (e) 7 or more | 28. | | | | |
| 29. | Instructor may insert two (2) items in this space. | 29. | | | | |
| 30. | | 30. | | | | |
| | | 1 | | | | |

STUDENT INSTRUCTIONAL RATING SYSTEM FORM (Written Comments)

One way in which an instructor can improve his class is through thoughtful student reactions. This instructor hopes to use your responses for self-examination and self-improvement. If you have any comments to make concerning the instructor or the course, please write them in the area below.

RATING FORM USED WHEN DETERMINING CORRELATION OF THE PRESENTATIONS OF THE INSTRUCTORS

APPENDIX F

APPENDIX F

RATING FORM USED WHEN DETERMINING CORRELATION OF

THE PRESENTATIONS OF THE INSTRUCTORS

| Teac | hing | Presen | tation |
|------|------|--------|--------|
| | | | |

- Was the instructor enthusiastic and interested when presenting course material?
- Did the instructor's examples of personal experience help get the points across in class?
- 3. Did the instructor adequately use packet, audio visual aids, or blackboard?
- 4. Did the instructor allow expression of opinions and/or appear receptive to new ideas and other's opinions?
- 5. Did the instructor encourage questions and/or stimulate class discussion?
- 6. Did the instructor's voice distract from the presentation?
- 7. Did the instructor present the material in a thorough and knowledgeable manner?
- Did the instructor's dress distract from the presentation?
- 9. Was the instructor well poised and at ease?

| | | No opportunity |
|----------|----|----------------|
| Yes | No | to observe |
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APPENDIX G

SPECIFIED OBJECTIVES FOR EDUCATION 325A:

METHODS OF TEACHING READING

APPENDIX G

SPECIFIED OBJECTIVES FOR EDUCATION 325A:

METHODS OF TEACHING READING

- 1.1.1 Given an analysis of the verbal nature of both the modern school and current society, the student lists five reasons why reading ability is crucial.
- 1.1.2 Given an experience in reading and analyzing a story written in a strange code system, the student writes a definition of reading which takes into account the perceptual and cognitive processes utilized by a successful reader.
- 1.2.1 Given simulated data contained on the class list, the student identifies pupils having difficulty reading because of a sensory problem, a perceptual problem, and a cognitive problem.
- 1.2.2 Given the simulated data contained on the class list, the student identifies pupils who possess the indirect prerequisites to reading and pupils who do not possess these prerequisites.
- 1.2.3 Given information developed in this module, the student categorizes reading prerequisites as being general readiness traits or specific readiness traits.
- 2.3.1 Given the various traits used by teachers to establish expectations of individual pupil reading achievement, the student lists the fallacies of using any one of these alone to determine expectancy.
- 2.3.2 Given the indicators of expectancy, the student states a strategy for sensitively using these indicators to determine an individual expectancy quotient.
- 2.3.3 Given the simulated data contained on the class list, the student establishes an individual expectancy of reading achievement for each pupil on the list.
- 2.4.1 Given information regarding formal and informal devices for determining reading levels, the student lists the advantages and disadvantages of using each.
- 2.4.2 Given simulated graded oral reading paragraph data, the student lists the independent, instructional, and frustration reading level for each of six pupils.

- 2.4.3 Given simulated graded oral reading paragraph data, the student states the type of skill difficulty for each of two pupils.
- 2.5.1 Given the simulated data contained on the class list, the student identifies pupil proficiencies and deficiencies in reading content area material.
- 2.5.2 Given the simulated data contained in the class list, the student identifies pupil proficiencies and deficiencies in recreational reading.
- 2.6.1 Given simulated data contained on the class list, the student identifies the stage of developmental reading growth for each of three pupils.
- 2.7.1 Given information regarding the importance of meeting individual needs, the student lists five characteristics of a humanistic teacher.
- 2.7.2 Given the previous modules on individual differences in reading, the student lists these differences and the tools which can be used to determine what these differences are.
- 3.8.1 Given a written description of a classroom setting in which individual differences of pupils are being met, the student identifies four crucial elements of such a classroom organization.
- 4.9.1 Given information regarding a pretest-teach-posttest strategy for skill instruction, the student describes how it would be applied in a hypothetical instructional situation.
- 4.10.1 Given a specific skill to teach, the student writes a psychological and a physical attender.
- 4.10.2 Given a specific skill to teach, the student writes a presentation which makes use of highlighting and diminishing crutches.
- 4.10.3 Given a specific skill to teach, the student writes a presentation which includes appropriate pupil response.
- 4.10.4 Given a specific skill to teach, the student writes a presentation which includes appropriate use of the principles of reinforcement.
- 4.10.5 Given a specific skill to teach, the student writes a practice exercise which incorporates the four characteristics of good practice.

- 4.10.6 Given a specific skill to teach, the student writes an application activity which would help the pupil put the skill to use in a realistic reading situation.
- 5.11.1 Given examples of the seven major types of prerequisite word recognition skills, the student categorizes these as being primarily visual, primarily auditory, or a combination of both.
- 5.11.2 Given examples of specific prerequisite skills, the student classifies each as being a memory task, a discrimination task, or an association task.
- 5.11.3 Given a specific visual discrimination skill, the student writes an instructional episode for teaching this skill.
- 5.11.4 Given a specific visual memory skill, the student writes an instructional episode for teaching this skill.
- 5.11.5 Given a specific auditory discrimination skill, the student writes an instructional episode for teaching this skill.
- 5.11.6 Given a specific sound-symbol connection skill, the student writes an instructional episode for teaching this skill.
- 5.11.7 Given a specific sequencing skill, the student writes an instructional episode for teaching this skill.
- 5.11.8 Given a specific sound-symbol-meaning skill, the student writes an instructional episode for teaching this skill.
- 5.12.1 Given a story written in a strange alphabet, the student lists the four major techniques for identifying words.
- 5.12.2 Given the prerequisite word recognition skills and the four major techniques for identifying words, the student categorizes these as either recognition or analysis skills.
- 5.12.3 Given simulated pupil performance on graded oral reading paragraphs and on tachistoscopic tests, the student states how the pupil is attacking words.
- 5.13.1 Give four techniques for teaching sight words, the student writes instructional episodes using each of the four techniques.
- 5.13.2 Given the language experience technique, the student describes how he would use this technique to help pupils identify words.

- 5.14.1 Given a specific short vowel phonogram skill, the student writes an instructional episode for teaching this skill.
- 5.14.2 Given a specific syllabication skill, the student writes an instructional episode for teaching this skill.
- 5.14.3 Given a specific phonetic generalization, the student writes an instructional episode for teaching this generalization.
- 5.14.4 Given a specific structural analysis skill, the student writes an instructional episode for teaching this skill.
- 5.14.5 Given a specific context and letter-sound correspondence skill, the student writes an instructional episode for teaching this skill.
- 6.15.1 Given his own experience as a thinker, the student lists the three major conditions which influence comprehension.
- 6.15.2 Given the three major conditions which influence comprehension, the student states how he would adjust instruction to account for each of these conditions.
- 6.15.3 Given the three major conditions which influence comprehension, the student states the characteristics he would look for in selecting textbook material for pupils.
- 6.16.1 Given a written description, the student lists three kinds of thinking.
- 6.16.2 Given a list of thinking skills, the student categorizes the four major comprehension skills.
- 6.16.3 Given a specific content word, the student plans an instructional episode for teaching the meaning of the word.
- 6.16.4 Given a specific function word, the student plans an instructional episode for teaching the meaning of the word.
- 6.16.5 Given a specific relationship skill, the student plans an instructional episode for teaching this skill.
- 6.16.6 Given a specific classification skill, the student plans an instructional episode for teaching this skill.
- 6.16.7 Given a specific main idea skill, the student plans an instructional episode for teaching this skill.

- 6.16.8 Given an example of content area textbook material, the student writes factual, descriptive, inferential, and heuristic questions.
- 6.16.9 Given a simulated situation, the student plans an instructional episode for teaching inferential thinking skills.
- 6.16.10 Given sample materials, the student plans an instructional episode for teaching evaluative thinking skills.
- 7.17.1 Given a hypothetical teaching situation, the student states the steps to be taken in organizing and managing a systematic reading skills program.
- 8.18.1 Given a typical basal text selection, the student describes how that lesson can be used to help pupils apply reading skills previously taught.
- 8.19.1 Given a typical content area textbook selection, the student describes how that lesson can be used to help pupils apply reading skills previously taught.
- 8.20.1 Given a hypothetical classroom situation, the student describes how a recreational reading program can be used to help pupils apply reading skills previously taught.
- 9.21.1 Given a simulated classroom situation, the student states the steps to be taken in organizing and managing an effective reading program.

TOTAL PERFORMANCES REQUIRED: 60

APPENDIX H

PRINCIPLES OF EFFECTIVE INSTRUCTION THAT WERE MODELED IN EDUCATION 325A: METHODS OF TEACHING READING

THE COURSE AS A MODEL:

To make the course a model of good teaching, the instructional staff attempts to "practice what they preach," providing students with a tangible example of good teaching as well as with knowledge about reading instruction. The principles of effective instruction being modeled are as follows.

- 1. We believe that it is the instructor's responsibility to arrange environmental variables to insure that learning results
 - a. that IF the student expends the necessary energy and fails to learn, the instructor must take the responsibility for this failure.
 - b. that when such failure occurs, the instructor must provide alternative instructional routes for achieving success.
 - c. that it is the instructor's responsibility to captivate-rather than "to hold captive"--his audience.
 - d. that the attention and respect of students is something the instructor earns, and is not necessarily an inherent right.
- 2. We believe that instruction must be performance-based
 - a. that the purpose of instruction is to develop in students the response or performance specified in the objective.
 - b. that instruction must involve activity--that is, it must provide for student performance of the specified task.
 - c. that the specified performance and the criteria for determining success must be clear to both the instructor and the learner.
 - d. that the instructor's success as a teacher is measured by the degree to which he elicits the specified response from each learner.
 - e. that student achievement and grades must be based on whether or not he performs each of the specified tasks according to the established minimum criteria.
- a. that the instructor must motivate students.
- b. that the instructor must specify for the student both the task to be learned and how the learning is to be measured.
- c. that it is the instructor's responsibility to cue students to the salient features of the task to be learned.
- d. that the instructional environment must include provisions for individual learning rate and mode.
- e. that measurement of student performance must be made at frequent intervals with immediate feedback regarding performance.
- f. that learners must be provided with reinforcers (reward) appropriate to their environment and individual needs.
- g. that the conditions of instruction must approximate as closely as possible the situation to which the learning is to be transferred.
- 4. We believe that instruction must be individualized.
 - a. that students must be provided with extra assistance when it is desired and/or needed.
 - b. that students who initially fail to meet minimum performance criteria must be provided with alternative routes for achieving that performance.
 - c. that individual conference and small group instruction focusing on specific needs must be an integral part of all effective learning.
 - d. that students desiring to achieve beyond the minimum competency level must be provided with the opportunity to do so.
 - e. that students must be offered curricular choices which enable them to satisfy individual interests and particular career aspirations.

- 5. We believe that teaching is a humane endeavor and that the instructor must be humanistic in his relationship with students.
 - a. that the instructor must help each student develop and maintain a healthy self-image.
 - b. that the instructor must maintain a friendly, approachable attitude which encourages students to seek help.
 - c. that the instructor must look for the best in students, commenting on that which is well done as well as on that which needs strengthening.
 - d. that the instructor must avoid arrogance, viewing his work not primarily as one who "rates" or "passes judgment" but, rather, as one who works with students to help them achieve their maximum potential.
 - e. that the instructor must encourage students to express their views communicating the fact that student concerns are important.
 - f. that the instructor must welcome constructive criticism and be willing to explore with students suggestions for improving instruction.
 - g. that the instructor must be able to admit mistakes candidly without fear of "losing face."
 - h. that the instructor must be more concerned about others than he is about himself, consciously seeking to put himself in the place of the student and to understand why the student feels as he does.

