DOCUMENT RESUME

ED 035 606 SP 003 524

AUTHOR	Johnson, Charles E.
TITLE	A Guide to Georgia Educational Model Specifications for the Preparation of Elementary Teachers.
INSTITUTION	American Association of Colleges for Teacher Education, Washington, D.C.; ERIC Clearinghouse on Teacher Education, Washington, D.C.
SPONS AGENCY	Office of Education (DHEW), Washington, D.C. Bureau of Research.
PUB DATE	69
CONTRACT	OEC-0-8-080490-3706(010)
NOTE	41p.
EDRS PRICE	EDRS Price MF-$0.25 HC-$2.15
DESCRIPTORS	*Behavioral Objectives, Computer Oriented Programs, *Elementary School Teachers, Individualized Instruction, Inservice Teacher Education, *Models, *Performance Specifications, Preservice Education, *Teacher Education, Teaching Experience
IDENTIFIERS	Specifications for Elementary Teacher Education

ABSTRACT

At the core of the University of Georgia model are teacher performance behaviors. They are the basis of the trainee's learning activities throughout the 6-year program. The trainee moves through three program phases; preprofessional--preparing for paraprofessional services; professional--preparing for certified teaching; and inservice--preparing for specialization in one of 15 areas. During these phases, the trainee experiences learning activities through proficiency modules (PM's), which are manuals of instruction--available from computers, published documents, or the trainee himself--that guide him through individual study and group interaction toward acquiring specified behaviors. The modules are classified into "types" if they relate functionally and into "blocks" if they are to be used sequentially. Each PM also incorporates a variety of evaluation devices for pre- and posttesting. Data on the trainee's progress (and on the program) are kept in tape storage. Among the model's other features are laboratory and field experiences; multiple entry points and paths; reciprocal agreements with local schools, agencies, and departments; year-round education; and sensitivity training. (See ED 034 076 for a readers' guide to the nine funded models.) (LP)

Brief Title:

Guide to
The University of Georgia
Teacher Education Model

Johnson

A GUIDE TO GEORGIA EDUCATIONAL MODEL SPECIFICATIONS FOR THE PREPARATION OF ELEMENTARY TEACHERS

Charles E. Johnson

Published by
ERIC Clearinghouse on Teacher Education
Number One Dupont Circle, N.W.
Washington, D.C. February 1970

Clearinghouse sponsors: American Association of Colleges for Teacher Education (fiscal agent); National Commission on Teacher Education and Professional Standards, National Education Association (NEA); and Association for Student Teaching, a national affiliate of the NEA.

The following Guide is one of the nine which appears in the publication A Reader's Guide to the Nine Models for Preparing Elementary Teachers. The Guide is available free in limited quantity from the ERIC Clearinghouse on Teacher Education; for $4.00 from American Association of Colleges for Teacher Education, One Dupont Circle, Washington, D.C. 20036; and for $1.25 in microfiche and $15.90 in hard copy from the ERIC Document Reproduction Service (EDRS), 4936 Fairmont Ave., Bethesda, Md. 20014. The order number at EDRS is ED 034 076.

The Clearinghouse is publishing each of the nine guides separately as well as collectively for the convenience of those readers interested in a specific elementary teacher education model. The above individual Guide also is available free in limited quantity from the Clearinghouse and for $0.25 in microfiche and $2.15 in hard copy from EDRS. An abstract of the above Georgia model will appear in the May 1970 Research in Education.

Introduction

On October 16, 1967, the U.S. Office of Education issued a request for the development of proposals on educational specifications for comprehensive undergraduate and inservice teacher education programs for elementary teachers. (The term elementary teacher included preschool teachers and teachers through grade 8.)

These proposals were for the design phase (phase I) of an intended three-phase project. By January 1, 1968, 80 proposals had been received. On March 1, 1968, the Bureau of Research awarded nine contracts to design conceptual models for programs for the training of prekindergarten and elementary school teachers, for the preservice as well as inservice components. These models were completed October 31, 1968.

Reports on phase I have been made under the following titles: A Model for the Preparation of Elementary School Teachers (Florida State University), G. Wesley Sowards, project manager; Behavioral Science Elementary Teacher Education Program (Michigan State University), W. Robert Houston, project director; A Competency-Based, Field-Centered Systems Approach to Elementary Education (Northwest Regional Educational Laboratory), H. Del Schalock and James R. Hale, editors; Specifications for a Comprehensive Undergraduate and Inservice Teacher Education Program for Elementary Teachers (Syracuse University), William Benjamin and others, authors; The Teacher-Innovator: A Program To Prepare Teachers (Teachers College, Columbia University), Bruce R. Joyce, principal author.

Also, Georgia Educational Model Specifications for the Preparation of Elementary Teachers (The University of Georgia), Charles E. Johnson, Gilbert F. Shearron, and A. John Stauffer, directors; Educational Specifications for a Comprehensive Elementary Teacher Education Program (The University of Toledo), George E. Dickson, director; A Model of Teacher Training for the Individualization of Instruction (University of Pittsburgh), Horton C. Southworth, director; and Model Elementary Teacher Education Program (University of Massachusetts), Dwight Allen, principal investigator, and James M. Cooper, project director.

In phase II, several institutions are studying the feasibility of developing, implementing, and operating a model program based upon specifications in phase I. In the third phase, the U.S. Office of Education hopes to be able to support implementation of some of the model proposals for restructuring teacher education.

Since the models cover almost 6,000 pages devoted to detailed specifications of behavioral objectives, materials, treatments, evaluation of specific elements of the programs, and the like, the ERIC Clearinghouse on Teacher Education, on April 15-16, 1969, sponsored in collaboration with the American Association of Colleges for Teacher Education (AACTE) which acts as its fiscal agent, a writers' conference in which key personnel involved in developing the models wrote guides to their specific programs.

A second-day of verbal interaction followed, at which time the writers discussed their personal reactions to all of the models and past, present, and future implications for teacher education. The panelists wanted to make it clear that in their discussion the models were being described at but one point on a continuum. They called the models catalytic agents which have generated a great deal of discussion, interaction, and continuing change. At this conference they said it was important for them to explore the range of alternative interpretations of issues such as, "What are behavioral objectives? What is a model? What does it mean to personalize? To individualize?" They said that some kind of projection needed to be made about what remains to be done--either by resolving issues, or if they are resolved, to act upon them. This whole exercise [the writers' conference] will have made a major contribution to teacher education if it focuses on the issues at the center of this whole models effort and helps to extend the models, they said.

This guide to the models should assist those who are interested in learning about or implementing them. The entire collection of models is available from the ERIC system in either hard copy or microfiche and from the Government Printing Office (GPO) in a honeycomb binding. The ERIC ordering address is: EDRS, The National Cash Register Co., 4936 Fairmont Avenue, Bethesda, Md. 20014. The GPO address is: The Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

The reports must be ordered by number. Any request without order numbers will be returned. Some of the reports listed do not have ERIC order numbers. These reports may not be ordered until the listing appears in Research in Education, the monthly abstract journal of ERIC.

The reports are available at the following prices:

Report By:	GPO Reprint Order No.	Price	ED No.	ERIC Hard Copy	Micro-fiche
Syracuse Univ.	FS 5.258:58016	$4.50	--- ---	------	-----
Volume I	----------	----	026 301	$14.85	$1.25
Volume II	----------	----	026 302	13.55	1.25
Univ. of Pittsburgh	FS 5.258:58017	2.50	025 495	10.60	1.00
Florida State Univ.	----------	----	--- ---	-----	----
Volume I	FS 5.258:58018	2.00	027 283	8.70	.75
Volume II	Not available	----	030 631	7.40	.75
Univ. of Georgia	FS 5.258:58019	3.50	025 491	14.85	1.25
Summary	----------	----	025 492	1.50	.25
Northwest Regional Educational Laboratory	FS 5.258:58020	6.50	--- ---	----	----
Overview and Specifications			026 305	7.65	.75

Report By:	Order No. Price	ED No.	ERIC Hard Copy	Micro-fiche
Appendix A:	Taxonomy of Learner Outcome	026 306	.55	.25
B:	Conceptual Model for Teaching Elementary Math	026 307	1.70	.25
C:	Content Model for Teaching Elementary Math	026 308	1.70	.25
D:	Sample Task Analysis and Behavioral Objectives	026 309	.70	.25
E:	General Adaptive Strategies	026 310	1.25	.25
F:	Interpersonal Competencies	026 311	.40	.25
G:	Basic Training Model for ComField Practicum	026 312	.45	.25
H:	Sample Task Analysis: Behavioral Objectives for ComField Laboratory	026 313	.65	.25
I:	Experimental Model for Preparing To Develop Behavioral Objectives	026 314	4.50	.50
J:	Experimental Model To Enable Instructional Managers To Demonstrate Interaction Competency	026 315	1.40	.25
K:	Trial Form of an Instrument for Evaluating Instructional Managers in the Practicum	026 316	.45	.25
L:	A Sequence for the Practicum	026 317	.60	.25
M:	Research Utilization and Problem Solving	026 318	3.20	.50
N:	Implementation of Rups System in a Total School District	026 319	2.20	.25
O:	The Human Relations School	026 320	1.05	.25
P:	Categorical Breakdown of Interpersonal Area	026 321	.30	.25
Q:	Educational Leaders Laboratory	026 322	.30	.25
R:	A Basic Communication Skill for Improving Interpersonal Relationships	026 323	.75	.25
S:	Broad Curricular Planning for the ComField Model Teacher Education Program	026 324	.85	.25
T:	Personalizing Teacher Education	026 325	.55	.25
U:	Self-Concept and Teaching	026 326	.70	.25
V:	Charting the Decision Making Structure of an Organization	026 327	.70	.25
W:	Cost Analysis in Teacher Education Programs	026 328	.80	.25

Report By:	GPO Reprint Order No.	Price	ED No.	ERIC Hard Copy	Micro-fiche
X: ComField Information Management System			026 329	.80	.25
Y: The Integrated Communications Experiment (ICE) Summary			026 330	.75	.25
Z: Classes of Measures Used in Behavioral Sciences, Nature of Data That Derive from Them, and Comments as to the Advantages and Disadvantages of Each			026 331	.40	.25
Teachers College, Columbia Univ.	FS 5.258:58021	4.50	027 284	26.95	2.00
Univ. of Massachusetts	FS 5.258:58022	4.50	025 490	26.25	2.25
Univ. of Toledo	FS 5.258:58023	7.00	--- ---	-----	----
Volume I	----------	----	025 457	12.80	1.00
Volume II	----------	----	025 456	34.85	3.00
Michigan State Univ.	----------	----	--- ---	-----	----
Volume I	FS 5.258:58024	5.00	027 285	31.35	2.50
Volume II	FS 5.258:58024	5.50	027 286	37.95	3.00
Volume III	FS 5.258:58024	5.00	027 287	29.65	2.25

Also available (or to be available soon) are the following related reports: 1. Nine Proposals for Elementary Teacher Education, A Description of Plans To Design Exemplary Training Programs by Nicholas A. Fattu of Indiana University. This document is a summary of the nine originally proposed programs which were funded in phase I of the project for preparing elementary teachers. Available through ERIC: ED 018 677, Price: $6.55 for hard copy; $0.75 for microfiche. 2. Analysis and Evaluation of Plans for Comprehensive Elementary Teacher Education Models by William E. Engbretson of Governors State University. This document is an analysis of the 71 proposed, but unfunded models of phase I. Available through ERIC: ED 027 268, Price: $12.60, hard copy; $1.00, microfiche.

3. A self-initiated critique of the Syracuse University model program, Specifications for a Comprehensive Undergraduate and Inservice Teacher Education Program for Elementary Teachers. ED 027 276, Price: $7.20 for hard copy; $0.75 for microfiche. 4. Some Comments on Nine Elementary Teacher Education Models by the System Development Corporation. This paper is adapted from remarks made at an American Educational Research Association conference in November 1968. Available through ERIC: ED 029 813, Price $0.75 for hard copy; $0.25 for microfiche. 5. Twenty-page summaries of the nine reports are available, free of charge, from: Elementary Teacher Education Project, Division of Elementary and Secondary Research, National Center for Educational Research and Development, U.S. Office of Education, 400 Maryland Avenue, S.W., Washington, D.C. 20202.

6. A Bibliography of References Used in the Preparation of Nine Model Teacher Education Programs by James F. Schaefer Jr. (Washington, D.C.: ERIC Clearinghouse on Teacher Education and the Bureau of

Research, U.S. Office of Education, 1969). ED 031 460, Price: $4.95, hard copy; $0.50, microfiche. 7. Analytic Summaries of Specifications for Model Teacher Education Programs, 8. A Short Summary of 10 Model Teacher Education Programs, and 9. Techniques for Developing an Elementary Teacher Education Model are three publications which were issued by the System Development Corporation in July 1969.

It is appropriate to express appreciation to the Clearinghouse staff for its dedication and hard work in completing this manuscript: Dr. Joost Yff, assistant director, and Mrs. Dorothy Mueller, program associate, whose advice and guidance were invaluable; Mrs. Lorraine Poliakoff and Mrs. Suzanne Martin, information analysts, who provided the index to this volume; and to the clerical staff of the Clearinghouse, especially Mrs. Vera Juarez, whose steady assistance made this publication possible. Appreciation also should be expressed to AACTE for its role in the conference and in this Guide, and, of course, to the writers of the guides for their full cooperation both during and after the conference.

The Clearinghouse on Teacher Education is pleased to present this guide to the nine models in the hope that it will stimulate extensive study of ways to improve school personnel preparation and thereby the educational opportunities for America's children and youth.

Kaliopee Lanzillotti, Publications Coordinator

Joel Burdin, Director

February 1970

About ERIC

The Educational Resources Information Center (ERIC) forms a nationwide information system established by the U.S. Office of Education, designed to serve and advance American education. Its basic objective is to provide ideas and information on significant current documents (e.g., research reports, articles, theoretical papers, program descriptions, published or unpublished conference papers, newsletters, and curriculum guides or studies) and to publicize the availability of such documents. Central ERIC is the term given to the function of the U.S. Office of Education, which provides policy, coordination, training, funds, and general services to the 19 clearinghouses in the information system. Each clearinghouse focuses its activities on a separate subject-matter area; acquires, evaluates, abstracts, and indexes documents; processes many significant documents into the ERIC system; and publicizes available ideas and information to the education community through its own publications, those of Central ERIC, and other educational media.

Teacher Education and ERIC

The ERIC Clearinghouse on Teacher Education, established June 20, 1968, is sponsored by three professional groups--the American Association of Colleges for Teacher Education (fiscal agent); the National Commission on Teacher Education and Professional Standards of the National Education Association (NEA); and the Association for Student Teaching, a national affiliate of NEA. It is located at One Dupont Circle, Washington, D.C. 20036.

Scope of Clearinghouse Activities

Users of this guide are encouraged to send to the ERIC Clearinghouse on Teacher Education documents related to its scope, a statement of which follows:

> *The Clearinghouse is responsible for research reports, curriculum descriptions, theoretical papers, addresses, and other materials relative to the preparation of school personnel (nursery, elementary, secondary, and supporting school personnel); the preparation and development of teacher educators; and the profession of teaching. The scope includes recruitment, selection, lifelong personal and professional development, and teacher placement as well as the profession of teaching. While the major interest of the Clearinghouse is professional preparation and practice in America, it also is interested in international aspects of the field.*

The scope also guides the Clearinghouse's Advisory and Policy Council and staff in decisionmaking relative to the commissioning of monographs, bibliographies, and directories. The scope is a flexible guide in the idea and information needs of those concerned with the pre- and inservice preparation of school personnel and the profession of teaching.

How To Use This Guide

Each guide has this general outline: overview, program goals and rationale, selection procedures, professional preservice component, relationship of professional component to academic component, inservice component, faculty requirements and staff utilization, evaluation component, program management, and summary. The Teachers College guide, which was not written at the conference, is the only one with a different outline.

In the Government Printing Office (GPO) edition of the models, some of the pages were numbered differently from the original reports which were processed into the ERIC system. For the readers' convenience, the footnotes to the guides include the page references to both the GPO and ED (ERIC) editions. If the page references in the footnotes were the same for both editions, only one set of page numbers is given.

"ED" or order numbers for the models appear along with the prices and other information in the introduction. Ordering information about other references in the ERIC collection would appear in the bibliography to each guide.

Table of Contents

The University of Georgia

OVERVIEW

The Georgia Educational Model (GEM) has, as its core, teacher performance behaviors which are lists of competencies embracing both professional performance and liberal education. The behaviors were systematically developed by interdisciplinary teams through the use of numerous resources including descriptions of desired pupil behaviors and teacher job analyses. Attention was given to all aspects of development: cognitive, psychomotor, and affective. Specifications require that all learning activities be directly related to these teacher performance behaviors. The vehicle for organizing and presenting learning activities and materials is a proficiency module (PM), a manual of instructions (available from computers, published documents, or the student himself) designed to guide student learning through individual study and group interaction activities toward acquiring particular behaviors. Professional workers in the field are an integral part of the instructional staff.

Instruction is individualized and clinical. Before undertaking any set of learnings, a student must be satisfied that he has met the prerequisites. Upon completion of any set of learnings, he must show proficiency. The average student qualified for admission to the program will take approximately six years to complete the entire career sequence--both pre- and inservice. This career sequence is divided into three phases: the preprofessional, which focuses on preparation for paraprofessional services; the professional, which prepares the candidate for service as a certified teacher; and the specialist, which prepares the candidate with a specialist degree in one of 15 selected areas.

To provide the student with security and guidance as he moves at his own rate through the program, specifications call for a comprehensive, continuous student orientation and advisement program.

Evaluation starts with admission when data obtained from numerous sources are used in candidate selection. Thereafter, evaluative measures are prepared for each module, block, and phase of the model. All data is placed in tape storage for availability for both short- and long-range evaluation of individuals and program subsystems.

PROGRAM GOALS AND RATIONALE

The basic principle used in developing an exemplary model for the preparation of elementary school teachers was that the instructional program must satisfy the everchanging needs of society and its individuals so as to improve the conditions of man.

Implementing this principle required that a logical sequence of events be followed creating the model. First, it was necessary to project, into the next decade and beyond, the needs of society and its individuals. Such an

investigation is concerned with the economy, technology, political theory, and values of society. On the basis of this information, the next concern was to project the kind of elementary school that would be most effective in fulfilling its role toward meeting these societal needs as well as producing the kinds of individuals who, through their creative contributions, would be capable of aiding society and themselves toward improvement.

Once the projected needs of society and its individuals was established and the nature of the kind of elementary school which tends to fulfill these needs was determined, the criteria for selecting the various components for the model program were able to be enumerated and the foundation for their justification evidenced. The original sources for this summary of goals and rationale may be found in parts 1 and 5 and appendix B of the Final Report[1]; in GEM Bulletin 68-2, "The Role of Society in Formulating an Educational Viewpoint"; GEM Bulletin 68-5, "An Educational Viewpoint for a Comprehensive Program for the Elementary Schools--GEM's Position"; and GEM Bulletin 68-9, "Organizational Patterns and Facilities for Elementary Schools." A bibliography of the GEM bulletins is found in appendix D of the Final Report.[2]

Criteria

The following criteria summarize the program goals established for the model program: (1) At the core of the instructional program, there must be a comprehensive set of behaviors which (as relates to the preparation of elementary teachers) clearly and directly tends toward satisfying needs of society and its individuals. (2) The candidates selected for admission to the model program, preparatory to teaching in the elementary school, must have those personal characteristics which are essential for them to be successful in satisfying the requirements of the behaviors which form the core for the program. (3) The learning activities and materials must reflect the most effectively known means of guiding prospective and inservice teachers toward acquiring the core of behaviors of the model program. (4) The basic instructional procedures must be clinical and individualized (as distinguished from individual or tutorial). (5) The sequence in which learning activities are arranged must be in accord with established principles of learning and the needs of society. (6) The evaluation of student achievement must be based on the extent to which the student has acquired the specified behaviors and must serve as a foundation for the improvement of the student and the instructional program. (7) The techniques and instruments used for program evaluation must take into account all components of the program so as to provide for the systematic and continuous revision and improvement of the model program. (8) The procedures used for orienting the

---

[1]Charles E. Johnson and others, Georgia Educational Model Specifications for the Preparation of Elementary Teachers, Final Report (Washington, D. C.: Government Printing Office, 1969), GPO: pp. 1-23, 185-228, 253-69; ED: pp. I 2-23, V 1-45, B 1-18.

[2]Ibid., GPO: pp. 287-90; ED: pp. D 1-5.

staff of the model program must be such so as to insure that the program will be soundly implemented and carried into sustained operation. (9) The model program must involve numerous state and local agencies for effective sustained operation. (10) The instructional program must be the basis for determining the administrative organization which will implement the model program.

Performance Specifications

The teacher performance specifications are the products of an operational system based on the goals and rationale of the program. They are reported in part 3 of the Final Report[3] and are statements which describe particular competencies or behaviors which teachers should possess in order to operate at optimum effectiveness.

These lists of behaviors were systematically determined by interdisciplinary teams under the leadership of specialists in program development and evaluation, which developed their products through the use of numerous resources.

The initial step in determining the specifications for teacher behaviors was to define the teacher's role. It began with determining goals (broad, far-reaching, abstract generalizations) for the elementary school followed by identifying elementary school objectives (statements which interpret goals into the school setting) for subject matter, cognitive processes, skills, attitudes, and values. From these objectives many essential teaching behaviors became evident. Other sources for identifying teaching behaviors were: established observations of the teacher on-the-job, theoretical writings of prominent educators, and accumulated knowledge of the nature of the child. (See GEM Bulletin 68-10, "The Nature of the Culturally Disadvantaged Child"; and GEM Bulletin 68-6, "The Nature of Elementary School Personnel.")

In developing these performance behaviors the position was taken that a teacher education program should attempt to develop a teacher with adequate personality characteristics for establishing rapport with students. Consequently, humanistic learnings, attitudes, sensitivities, and values were incorporated into the program.

Behaviors were categorized into three career sequence levels: the teaching assistant, the certified teacher, and the specialist. (The teacher aide is defined as a category for entry into the career sequence.) Generally, the teaching assistant is represented by behaviors developed by the average qualified pereservice student after approximately two years in the program; the certified teacher, by behaviors developed by the average qualified student after four years; and the specialist, by the behaviors developed by the average qualified inservice teacher after six years.

More than 2,000 specifications for teacher performance behaviors are provided in the following categories:

---

[3] Ibid., GPO: pp. 35-161; ED: pp. III 1-137.

Drama.
Composition.
Cognitive processes.
Psychology.
Educational tests and measurements.
Pedagogy.
Social studies.
Speech.
Reading.
Literature.
Listening.
Mathematics.
Media.
Science.
Instructional improvement and professional development.
Specialized training related to local conditions.
History of religion.
Art.
Music.
Health.
Physical education.
Philosophy.
Guidance and counseling.
Social foundations of education.

The system for classifying these was based on taxonomies (Bloom, Krathwohl) to designate the intended behavior of students that would result from specific learning experiences. Categories in the cognitive domain include: (1) knowledge, (2) comprehension, (3) application, (4) analysis, (5) synthesis, and (6) evaluation. Those in the affective domain are: (1) receiving, (2) responding, (3) valuing, (4) organization, and (5) characterization.

Characteristics representing the intended behaviors have been classified according to the highest level of development necessary for optimum performance in specific positions (specialist, teacher, assistant teacher). The assumption is made that the behaviors in one class make use of and are built upon those represented in the preceding classes. For an example, see table 1.

The development of certain motor skills is considered to belong in certain aspects of the cognitive domain. However, some motor skills should be designated separately for clear understanding that these skills are necessary for certain tasks. These motor skills have been classified in four levels: (1) simple action (response), (2) coordinated action (multiple action), (3) action sequence (procedure), and (4) system action (accomplishing an objective). Examples of performance specifications in physical education appear in table 2.

Finally, although the affective domain of the taxonomy has been used in the classification of some objectives, for purposes of clarity and emphasis, those relating to personal development have been separately classified. Here, the taxonomy has not been used because it is hoped that each person (assistant, teacher, and specialist) will strive to achieve the maximum development of their individual personalities (see table 3).

SELECTION PROCEDURES

The detailed specifications for candidate selection for the model program are reported in part 2 of the Final Report. They are based on an investigation of the teacher personnel pool and the teacher performance behaviors previously described. These specifications make provisions in

TABLE I

EXAMPLE OF PERFORMANCE SPECIFICATIONS--
EDUCATIONAL TESTS AND MEASUREMENTS

Characteristic	Level of Development					
	Cognitive			Affective		
	Teaching Assistant	Teacher	Specialist	Teaching Assistant	Teacher	Specialist
3.02.01 Historical background and overview of educational measurement.		1	3		1	3
3.02.02 Purpose for and components of a test guide.		3	6		1	3
3.02.03 Different types of items and teacher made tests.		3	6		1	3
3.02.04 Instructions for and administration of tests.	1	3	6		1	3
3.02.05 Normative data.		3	6			
3.02.06 Interpretation of test scores.	1	3	6		1	3
3.02.07 Desirable test characteristics.		3	6		1	3
3.02.08 Gain experience in finding test information.		3	6		1	3
3.02.09 Standardized intelligence tests.		2	6		1	3
3.02.10 Special aptitude tests.		2	6		1	3
3.02.11 Achievement batteries.		2	6		1	3
3.02.12 Techniques of self-appraisal.		2	6		1	3

TABLE II

EXAMPLE OF PERFORMANCE SPECIFICATIONS--
PHYSICAL EDUCATION

Characteristic		Level of Development								
		Cognitive			Affective			Motor		
		Teaching Assistant	Teacher	Specialist	Teaching Assistant	Teacher	Specialist	Teaching Assistant	Teacher	Specialist
3.19.01	Neuro-muscular system.		3	6		2	3			
3.19.02	Pupil's physical limitations and individual differences.		3	3		3	3			
3.19.03	Neuro-muscular skills such as running, jumping, kicking, striking an object with a racket or bat.	2	3	5	1	3	3	1	2	3
3.19.04	Techniques for developing pupil strength and endurance.		2	5					1	3
3.19.05	Evaluation of pupils through observation.		4	6						
3.19.06	Techniques of developing democratic living through play and learning activities.	1	3	4	2	3	5			
3.19.07	Kinesiology.			5						
3.19.08	A wide range of physical activities for pupils (e.g., rhythms, dances, games, team sports).	1	3	5		3	3	1	2	3

TABLE III

EXAMPLE OF PERFORMANCE SPECIFICATIONS--AFFECTIVE (DOMAIN)
SAMPLE PERSONALITY CHARACTERISTICS

3.25.01	To develop and accept an accurate perception of self, in order to achieve a more adequate personality.
3.25.01.01	Ascertains the degree of acceptance one has among one's peer, academic, social, sex, and similar groups.
3.25.01.02	Assesses the limits of one's potential, in order to learn the extent of one's own capacities.
3.25.01.03	Examines one's tolerance for ambiguity, in order to discover the amount of regulation one requires in life and the environment.
3.25.01.04	Confronts the types of anxieties and types of fears one lives with in daily life, in order to achieve more effective behavior.
3.25.01.05	Determines the degree to which one is authentic in presenting one's personality and real self.
3.25.01.06	Assesses the degree of comfort and/or discomfort one finds in one's environment, in order to achieve satisfaction and stability.
3.25.01.07	Studies and examines the effects of the behavior of others upon oneself when choosing one's own behavior.
3.25.01.08	Understands and is able to use effectively the tools of communication.
3.25.01.09	Finds ways of dealing with conflict, in order that it does not incapacitate one's potential behavioral effectiveness.
3.25.01.10	Has the courage of one's convictions and presses them forward until change seems warranted.

the model program for candidate selection based on a career field with multientry points and paths through that career field.

The career field allows an individual to enter the profession at the lowest category level, and through experience and training, to advance as far as he is capable. This component is thus designed to satisfy the needs for increased quantity, quality, and utilization of teacher personnel.

The multientry points and paths provided in the model program are depicted in figure 1. Traditionally, the route to teaching has been a student graduating from high school and going directly through college and into teaching. This path is maintained and improved in this model. However, the model proposes, as an alternative, that the student be allowed to enter teaching directly from high school as an aide, attend college on a part-time basis, advance to teaching assistant, become a teacher, and finally move on to become a specialist. A third route is for noneducation majors to enter as aides or as teaching assistants and complete their professional training.

The paths for student admission sequence are depicted in figure 2.

Table 4 lists measures used for candidate selection. The model does not propose to reduce the number of students in the teacher preparation program; rather, it offers these measures as a basis for developing predictors of success. Until their value is established, there are several ways of adapting them to individual situations as suggested in part 2 of the Final Report.

INSTRUCTIONAL COMPONENTS

This description of the model's instructional components first concerns itself with the general aspects of the components, then specifically with the professional preservice component, relationships of the professional and the academic components in the preservice component and the inservice component.

General Aspects of the Instructional Components

Instruction is generally concerned with all teaching-learning aspects of the model including learning activities and materials, and procedures and program sequence. Detailed specifications for instruction are included in parts 4 and 5 of the Final Report.[4]

The specifications for learning activities and materials require that all learning activities directly relate to teacher performance behaviors and utilize what is called a proficiency module (PM) as a vehicle for the presentation of learning activities and materials of instruction.

---

[4] Ibid., GPO: pp. 165-91; ED: pp. IV 1-V 45.

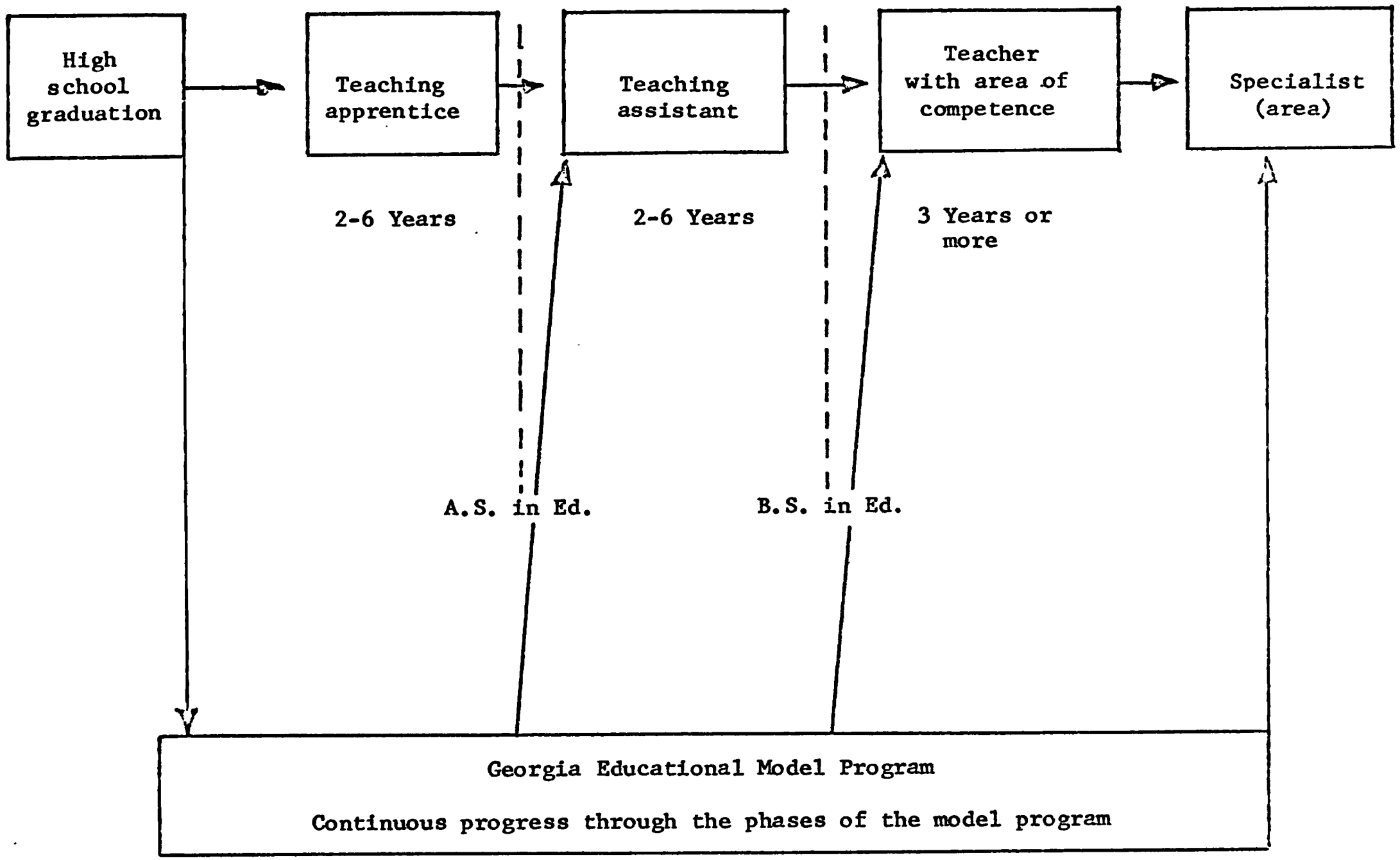

FIGURE 1

PATHS IN THE TEACHER CAREER FIELD

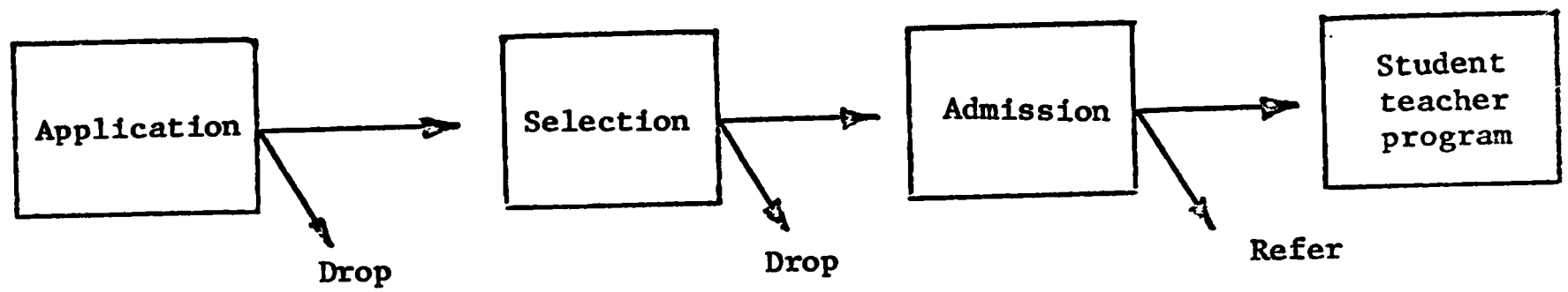

FIGURE 2

STUDENT ADMISSION SEQUENCE

TABLE IV

SCORES REQUIRED FOR ADMISSION

Personnel category	Qualitative (e.g., SCAT)	Quantitative (e.g., SCAT)	Interest (strong for teaching area)	Biographical information blank	Personality schedule (e.g., Edwards's)	School achievement
Teacher apprentice	500		B	*	*	↑ 50th percentile in high school ↓
Teacher assistant	500		B	*	*	
Teacher (area competent)						
Language arts	500		B+	*	*	
Mathematics	500	500	B+	*	*	
Social science	500		B+	*	*	
Science	500	500	B+	*	*	
Art	500		B+	*	*	
Music	500		B+	*	*	
Foreign language	500		B+	*	*	
Physical education	500		B+	*	*	
Specialist	(GRE)	(GRE)	(GRE Ad. Test)			
Reading	500		500			
Mathematics	500	500	500			
Social science	500		500			
Science	500	500	500			
Art	500		500			
Music	500		500			
Physical education	500		500			
Guidance	500	500	500			

*Any significant deviation from normal will be cause for interview by psychologist.

A PM is an instrument which organizes various sizes, kinds, and clusters of behaviors for instruction. It is defined as a manual of instructions (available from computers, published documents, or the student himself) designed to guide student learning through group interaction and individual study toward acquiring particular affective, psychomotor, and cognitive learnings.

A PM contains activities which guide the student in learning thought processes such as those associated with problemsolving and creativity, aid him in acquiring skills such as those needed for effective social interaction or those needed in performing scientific experiments, and provide him with attitudes such as those essential for working with atypical children or participating in programs of curriculum change.

The core of the PM, insofar as the student is concerned, is a series of learning tasks or activities. These tasks are adaptable to individual differences among students in such areas as the rate of learning, sensory, sensitivity, cognitive styles, interest, and previous experience.

As constructed in accordance with the specifications, PMs avoid unnecessary duplication of content and permit the student to move through the program at a pace which is comfortable and challenging to him.

Instruction is both clinical and individualized in the model program. Figure 3 is the diagram of specifications for the sequence of events required for the utilization of a PM and illustrates its clinical and individualized features.

Before undertaking a PM, the student must provide his instructor with evidence that he has satisfactorily met the prerequisites for doing so. The student is then required to perform the pretest which is developed from sampling of the behaviors which the PM is designed to help him acquire. In conference with his adviser, the PM pretest is analyzed and a mutually agreed upon plan of action is prepared. It may be decided that his performance on the pretest indicated that there was no need for him to undertake the learning tasks contained in this particular PM. On the other hand, it may be decided that particular learning tasks in the PM should be carried out. A third possibility is that the student propose his own objectives and learning activities.

If their activities are found to be in keeping with the program goals, they are approved by the adviser. Another alternative, after analysis, is the referral of the student to a remedial clinic should a serious disability or deficiency become evident. This clinical and individualized instructional procedure is continuous throughout each phase of the model program.

It should be understood by the reader that the term test, as used in the previous paragraph, does not mean solely a pencil-and-paper or computerized test. It is broadly inclusive of all aspects of student performance such as thought processes, skills, and attitudes as well as accumulated knowledge.

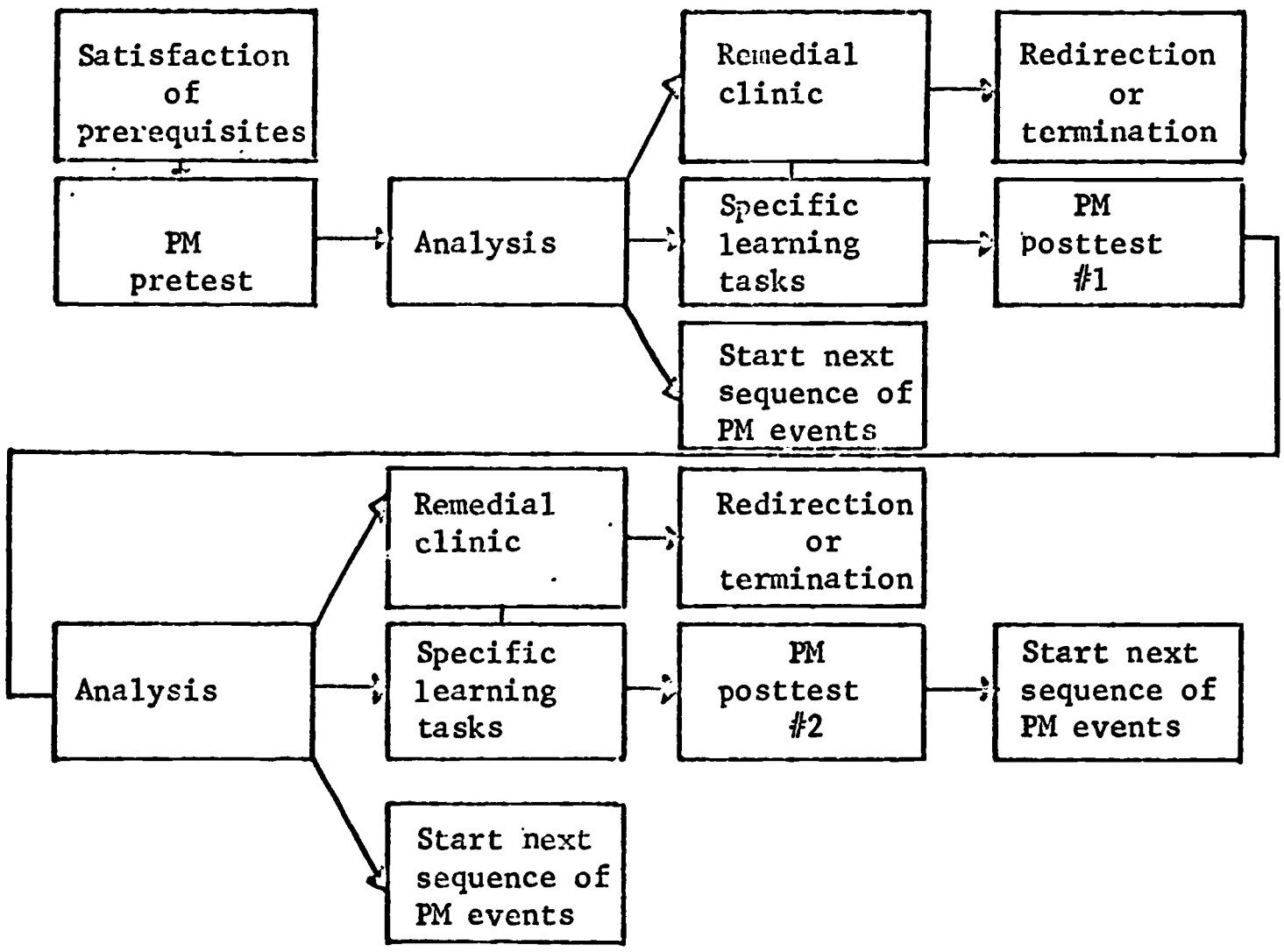

FIGURE 3

DIAGRAM OF SPECIFICATIONS FOR SEQUENCE OF EVENTS

DESIGNED TO INDIVIDUALIZE INSTRUCTION

The model program, including both the preservice and inservice components, is divided into three phases. The first, which is called the preprofessional phase, is roughly the time equivalent of the first two years of the traditional undergraduate program and provides the student with the beginnings of a liberal education, preparation for paraprofessional service as a teaching assistant, and the associate's degree. The second is called the professional phase. It is roughly the time equivalent of the junior and senior years of a conventional preservice program and prepares the candidate for professional service as a general elementary teacher, completes the liberal education requirements, provides a teaching area of competency, satisfies the requirements for the bachelor's degree, and provides the prerequisites for admission to the specialist program. The specialist phase of the model program is approximately the time equivalent of two years of graduate work and provides the candidate with the specialist degree in one of 15 areas of specialization.

The student progresses through the program by satisfying the requirements of the performance behaviors specified in the structure of the PMs. All PMs are classified into types and blocks. The term "types" refers to classes of PMs which group themselves around common functional relationships, such as basic PMs required for all students in the preprofessional program or PMs require of all students enrolled for a particular teaching area of competency. The term "blocks" refers to clusters of PMs which are designated to be taken in sequence. For example, there are six PM blocks in the preprofessional program and 10 PM blocks in the professional program. The student is normally expected to meet the level of proficiency required in all of the PMs of any one block before he moves on to the next. (See the Final Report.[5])

Specific Aspects of the Instructional Components

Professional Preservice Component. The preservice program consists of the preprofessional and the professional phases. Detailed specifications for content and sequence of content for these two phases are in the Final Report.[6]

As the professional content of these two phases, approximately 10 to 20 percent of the emphases of the preprofessional phase and 45 to 50 percent of the emphasis of the professional phase is devoted to professional education; the remainder is devoted to liberal education.

Running continuously with the six PM blocks of the preprofessional phase is an education seminar which is concerned with the study of paraprofessional teaching activities and human growth and development. During the second and fifth blocks, the students are provided approximately six weeks (whatever is needed insofar as time is concerned) of supervised field laboratory experiences, carrying out paraprofessional activities in classroom situations. (See specification 5.01.09 in the Final Report.[7])

---

[5] Ibid., GPO: pp. 203-208; ED: pp. V 20-25.

[6] Ibid., GPO: pp. 191-96, 203-07; ED: pp. V 8-13, V 20-24.

[7] Ibid., GPO: p. 193; ED: p. V 10.

The education seminars begun in the preprofessional phase are continued under different leadership and with different objectives during the professional phase as the students continue to pursue the individualized instruction provided by the PM. During this phase the student selects, from among the following, a teaching area of competency in which to concentrate approximately 30 percent of his total effort:

Language arts (reading).
Social sciences.
Natural sciences.
Mathematics.
Health education.
Music.
Art.
A modern foreign language.
Human development.

During each of three of the 10 PM blocks of the professional phase (two, four, and seven), the student is provided with approximately six weeks (whatever is needed) of laboratory experience in practical school settings. In addition, an internship of approximately 10 weeks is provided near the end of the sequence. (See specification 5.01.20 in the Final Report.[8])

For both phases of the model program, PMs in professional education provide for such procedures as microteaching, programed instruction, and training in social interaction.

Relationship of Professional Component to Academic Component. Throughout both phases of the preservice component, considerable attention is given to the academic or liberal education of the student. In the preprofessional phase, PMs are specified for English language arts, social studies, natural sciences, fine arts, mathematics, and health, safety, and physical education. In the professional phase, specifications require extentions of study in these areas plus PMs in the subject area of competency selected by the student. Specification 5.01.04[9] and specification 5.01.13[10] of the Final Report present diagrams of the distribution of emphasis among subject areas for each of these phases of the preservice program. Specific designation of PMs by types and area groups are found in specifications 5.02.19 and 5.02.20[11] of the Final Report. The organization of the program integrates liberal arts with the professional activities to the largest extent deemed feasible.

---

[8] Ibid., GPO: p. 196; ED: p. V 13.

[9] Ibid., GPO: p. 192; ED: p. V 9.

[10] Ibid., GPO: p. 194; ED: p. V 11.

[11] Ibid., pp. 203-04; ED: pp. V 20-21.

Inservice Component. Detailed specifications for the specialist or inservice phase of the program are contained in the Final Report.[12]

The specialist or inservice program is regarded as graduate work to be undertaken after certification as a general elementary teacher as defined by the teacher performance specifications.

There are 15 areas of specialization provided in this phase of the program. Summary job descriptions are provided in appendix A of the Final Report.[13] The 15 areas are:

Language arts.
Social science
Natural science.
Mathematics.
Health education.
Art.
Music.
Foreign language.
Human development and learning.
Professional development.
Evaluation.
Instructional media.
Pupil personnel.
Curriculum and program planning.
School-community relations.

The specialist program is organized into three areas: training related to local conditions, instructional improvement and professional development, and specialization through exploration.

Training related to local conditions prepares the specialist teacher for optimum effectiveness in adapting to or modifying unique local conditions. (Those local conditions include school organization, socioeconomic level, and special instructional patterns.) This training is the responsibility of the local school district in cooperation with the adviser and the university specialists.

Instructional improvement and professional development in the specialist program provide for self-evaluation, study of new techniques of instruction, and continued general development as a professional educator. Activities in this area are essentially individual in origin and utilize resources provided by both the local school district and the university.

PMs for specialization and exploration are provided to continually increase the competence and effectiveness of the teacher. A portion of these PMs are required of all as a common core. Others are sequentially arranged to give breadth and depth in a selected area, and still others provide flexibility for exploration. These PMs are carried out in cooperation with either the adviser or local school district supervision.

---

[12] Ibid., GPO: pp. 196-97, 203-04; ED: pp. V 13-14, 20-21.

[13] Ibid., GPO: pp. 231-22; ED: pp. A 16-20.

Figures 4 and 5 diagrammatically describe the study sequence and distribution of emphasis among areas of study in the inservice or specialist program. The figures are taken from the Final Report.[14]

FACULTY REQUIREMENTS AND STAFF UTILIZATION

Specifications for faculty requirements, staff utilization, general orientation of personnel to the goals and objectives of the model program, and the more intensive orientation of the project staff charged with the responsibility of developing, implementing, and operating the model program are contained in part 5 of the Final Report.[15]

These specifications require continuous public relations activities and an initial lengthy period of seminars, conferences, and workshops with personnel from all institutions, colleges, schools, and departments involved in the training of elementary school teachers. In addition, it is required that the staff responsible for developing and implementing the model program (including the development of the learning materials) be the key staff for carrying the model program into sustained operation.

Also, since it is required that program evaluation review techniques be employed in maintaining the model program, provision is made during orientation for inservice education of personnel, who are engaged in designing and carrying out management activities, to acquire an understanding and skill in the use of these techniques.

As regards the personal characteristics of the persons who are to work with the project, they must evidence enthusiastic endorsement of the program, its objectives and goals, and the system for implementation, as well as a realization of the total demands which will be made of them in terms of time and effort. Also, they must be willing to submit themselves to a study of those essential features of the program requirements with which they may be initially unfamiliar. For example, a professor of English literature may not be familiar with what is regarded by specialists in learning as the most effective means for developing learning activities designed to satisfy performance specifications of an affective nature. If so, the professor must be willing to acquire knowledge of this sort and the skills which it requires before he is regarded as a productive member of the staff.

---

[14] Ibid., GPO: p. 198; ED: p. V 15.

[15] Ibid., GPO: p. 185-228; ED: pp. V 1-45.

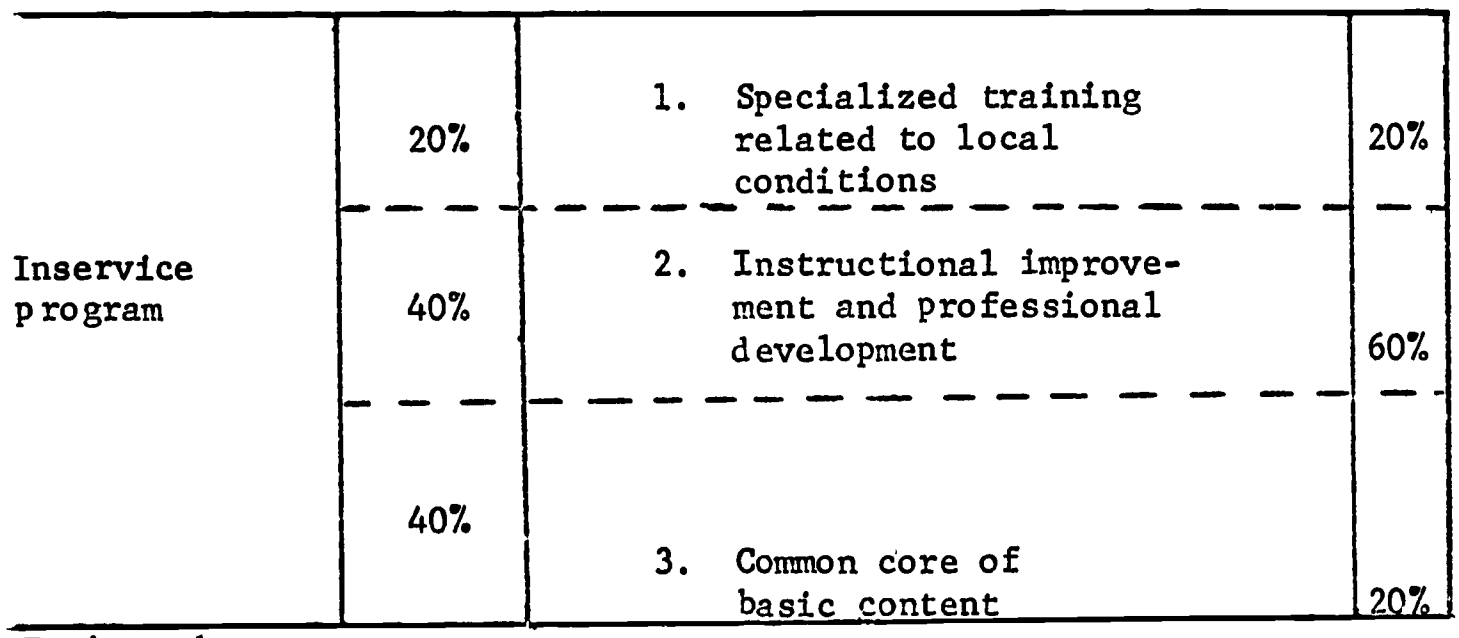

FIGURE 4

DIAGRAM OF SPECIFICATIONS FOR STUDY SEQUENCE FOR SPECIALIST'S PROGRAM

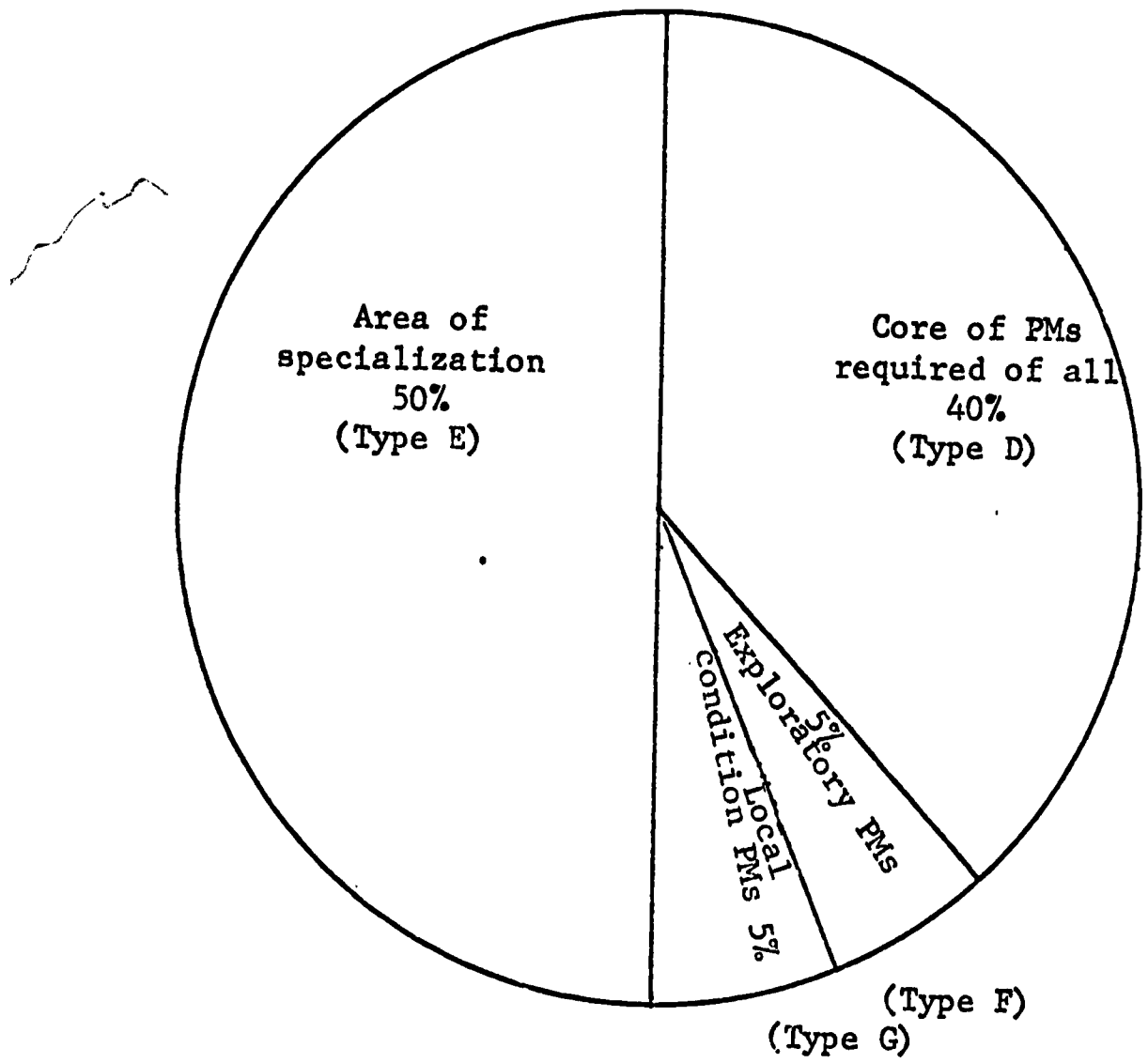

FIGURE 5

DIAGRAM OF SPECIFICATIONS FOR DISTRIBUTION OF EMPHASIS AMONG AREAS FOR STUDY IN SPECIALIST'S PROGRAM

EVALUATION COMPONENT

Specifications for evaluation are contained in part 4 of the Final Report.[16] In general, evaluation data includes that which was obtained from selection of candidates, examination of students before and after instruction, followup evaluation procedures, and cost effectiveness efforts. The characteristics of the model program in regard to the relationship of evaluation to candidate selection have already been summarized. The description set forth here is concerned primarily with the evaluation of student achievement, progress review including followup, data processing, and cost effectiveness.

Evaluation of Student Achievement

The preceding discussion of instructional procedures, which discussed the clinical and individualized aspects of the pre- and inservice model program pointed out that each individual's program would be personalized to the extent that his special capabilities and accumulation of knowledges, skills, and attitudes (as well as his objectives) would be taken into account in prescribing his instructional program.

In the component of instruction, the evaluation of student achievement is carried out primarily with the pre- and posttests which are the integral parts of all PMs. The procedures by which these pre- and posttests are constructed begin with categorized subsets of behaviors. The nature of the evaluation instruments is therefore dependent upon the behaviors to be evaluated. For this reason a variety of evaluation devices will be required. Acquisition of subject matter (facts, definitions, and concepts) will be evaluated with such instruments as objective tests, through such media as paper-pencil tests, or computer consoles. Evaluation of the cognitive processes will employ such means as written (structured and unstructured) essays and problemsolving situations.

Skill evaluation will be accomplished through observations and through the appraisal of the products of effort, while attitudes and values will require self-evaluation scales and observational techniques.

To illustrate the procedures specified for the model program, an achievement test guide for a module in tests and measurements is illustrated in table 5. The objective is placed in the first column and supporting content in the second. Processes of measurement are indicated in the next column where category headings are those of the cognitive domain. Were it an attitude or value scale, the category headings would be those of the affective domain. A performance measure categorizes the skill domain. The number in each cell represents the amount of emphasis given to that topic and the process to be employed. Measures prepared in this manner are used in each module of the model program.

The results of each test are transcribed on tapes for entry into the computer. The objectives and supporting items are coded numerically. When

---

[16] Ibid., GPO: pp. 165-84; ED: pp. IV 1-20.

TABLE V

EDUCATIONAL TEST MODULE GUIDE

The student accomplishes the following objectives:	Supporting content	Process used in measurement					
		Recall	Comprehension	Application	Analysis/ synthesis	Evaluation	Total no. of items
Learns a brief historical background of educational measurement	Work of Wundt, Galton, Cattell, and Binet. Measurement in for periods since 1900	3					3
Acquires a brief overview of measurement	Evaluation and measurement, observational techniques, functions measured, individual differences	4					4
Develops an understanding of teacher-made tests	Objectives, processes, content, item types, scoring, characteristics	1	2	2			5
Writes test items	Multiple choice, essay, true-false, matching	1	1	1	1	1	5
Administers the test	Directions, timing, key, reproduction of test, scoring	1	1	1		2	5
Interprets the test	Frequency distribution, mean, mode, median, histogram, standard deviation, correlation		1	1	2	1	5
Prepares and presents normative data	Descriptive statistics, percentiles, standard scores, profiles	1	1	1	2	1	6
Acquires an understanding of desired test characteristics	Reliability, objectivity, practicality, criterion, validity		1	1	2	2	6
Gains experience in finding test information	Sources, types of information, test evaluation procedures		1	1		3	5
		11	8	8	7	10	44

a student is measured to determine his mastery, the code number of the objective is entered and the computer displays appropriate items selected randomly from the category. The computer is programed to tabulate the student's responses and the item characteristics. When the student completes his test, the computer indicates his achievement in standard scores.

Additional devices and/or procedures specified for use in the evaluation component are: standard tasks, teaching performance guides, products of performance, and related criterion measures.

Standard Tasks. Standard tasks are relatively independent performances which are administered at the close of each PM block. They are represented by a number of separate instruments which relate to performances required of all students and inservice teachers at the close of each particular block of PMs. The student or teacher is required to carry on an activity under the supervision of a qualified observer who rates the student on a scale as he carries out the activity. These designated activities are derived from the set of teacher performance behaviors which are of particular concern in developing the learning activities contained in the PMs within the block. Standard tasks are required in all areas of study (i.e., language arts, social science, natural science, art, health education) as well as paraprofessional, professional, and specialist areas of study and performance.

The standard tasks are appraised by whatever techniques are deemed appropriate. For certain tasks, such as preparing a training aid, there are end products to evaluate. Other tasks follow routine procedures and can be evaluated by a check list, such as the tasks of cataloging and filing materials. Some standardized tasks can be checked for accuracy; for example, measuring height and weight and scoring routine pupil work assignments. Other tasks require ratings.

Teaching Performance Guides. Teaching performance guides evaluate teaching skills which are comprehensive in nature and directly related to the student's or teacher's performance in a teaching-learning situation. The skills involve organizing acts into sequence, establishing sequences into procedures, and selecting procedures and materials to achieve objectives of a given system. These instruments are administered through observation of the student or inservice teacher working with pupils near the close of each practical laboratory experience, near the end of the internship, and near the end of the specialist phase of the program.

Specifications require that performance guides employ microteaching procedures. After the student "performs," the student and supervisor play back the video tape recording immediately. In conference, the supervisor and student examine the performance to find opportunities for significant learnings which the student did and did not treat adequately.

Products of Performance. The assessment of the products of performance is used wherever applicable to obtain evidence for evaluating a standard task and for obtaining evidence from the more comprehensive teacher performance tests. Examples of products of performance are a composition, a poem, a

comparison of two theoretical viewpoints, a speech, a painting, a musical composition, a lesson plan, or a diagnosis of the background regarding learning of an underprivileged child.

Related Criterion Measures. Certain factors in the teaching environment were regarded as highly important in providing a broad evaluative base for teaching success. Thus, an evaluation subsystem was structured to include related criterion measures including pupil achievement, parental attitudes, peer ratings, supervisory ratings, and videotape observations of teacher performance for evaluative purposes.

Achievement of pupils involves such conventional measures as elementary school achievement batteries. A parental attitude scale measures the parent's attitude toward the goals and objectives of the system. Peer ratings are appraised by inventories of what the teacher's contemporaries think of his effectiveness as a teacher. Supervisory ratings are obtained on check lists which reveal the supervisor's judgment of the teacher's effectiveness and proficiency in performing assigned tasks. The videotape of the teacher performance is evaluated and scored in a fashion similar to that described in the aforementioned microteaching technique.

Progress Review

After the student's progress has been appraised, the adviser normally advances the student into the next block or phase of the program. However, in the event of unsatisfactory progress, the student may be advised to enter teaching in a paraprofessional category or transfer to another program. If the student requires time to remove a deficiency, the paraprofessional route may be recommended or the student may be dropped from the program.

Progress review points and possible routes are depicted in figure 6. It should be noted that the final block represents a period of followup evaluation designed not only to determine the extent to which the student was successful as a teacher, but also to evaluate the instructional program itself. In other words, the evaluative procedures and devices described in this report will be used to collect data which will reveal strengths and weaknesses in the program, so that continuous improvement of the model becomes a continuing feature.

Data Processing

The data obtained by administering the various measures in the selection, training, and criterion programs are analyzed to determine if the objectives are achieved and to define effectiveness of the various subsystems. The analysis includes such statistics as normative data, item analysis, reliability, analysis of variance, correlational analysis, factor analysis, cost effectiveness, and validity.

Data processing requirements are considered prior to implementation. One of the major requirements is that the data be numerical or coded in numerical form. Another consideration involves the routine of substituting scanner sheets for traditional answer sheets in all measures: (1) selection,

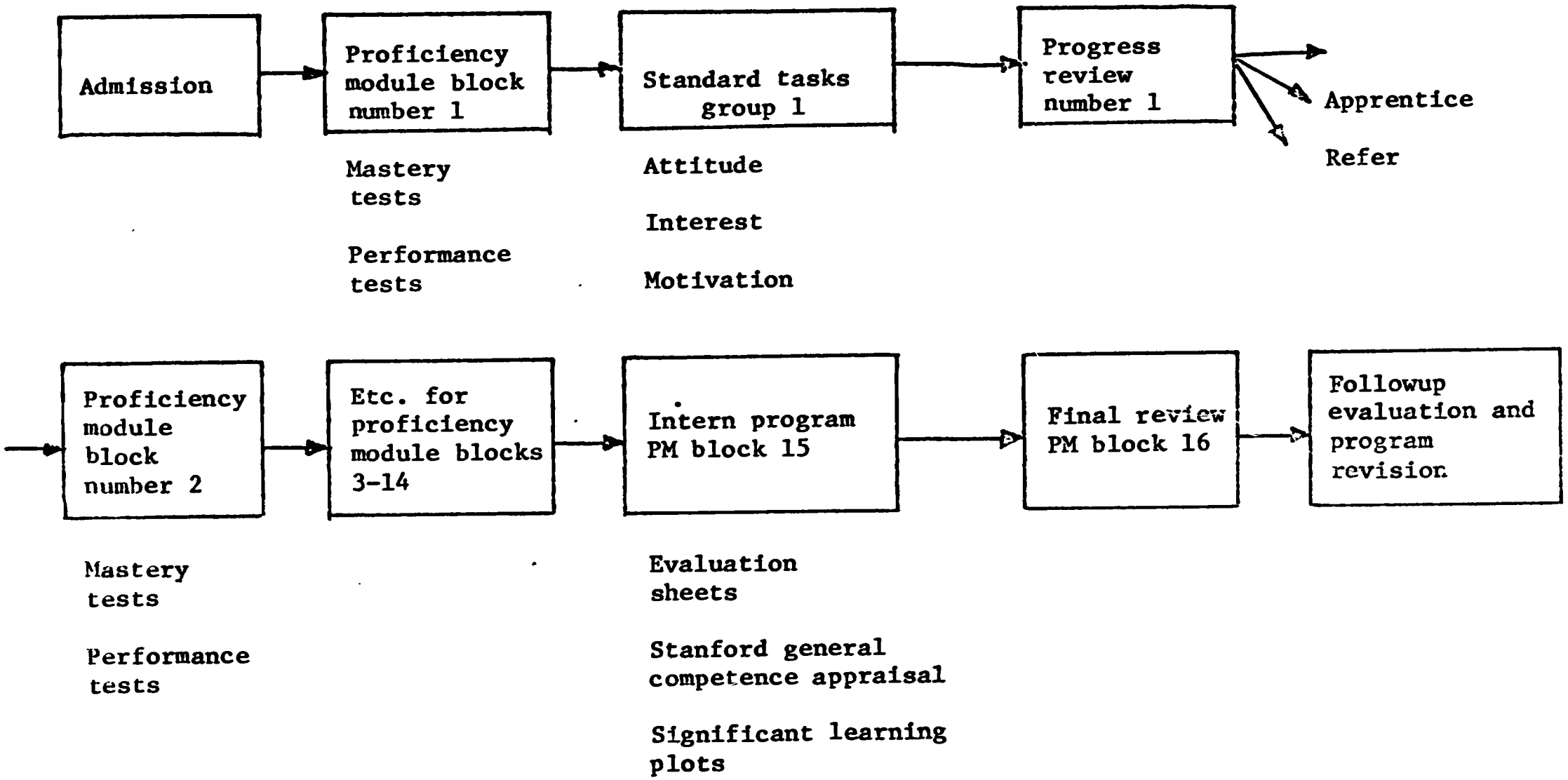

FIGURE 6

APPRENTICE TEACHER PROGRESS REVIEW

(2) training, and (3) criterion. The student responses on scanner sheets are automatically punched on cards. For example, the IBM 1232 Optical Reader transcribes at the rate of 1,000 cards per hour.

After the information is on a card deck, it is transferred to tape storage with the use of a reader, such as the IBM 1052. In the model program, a remote 1052 in the college of education calls a program from the data cell of the IBM 360 Computer. The data processed by the combination provides such information as:

1. Item difficulty.
2. Internal consistency.
3. Means.
4. Standard deviation.
5. Reliability.

This information is made available either on a televiewer or on microfiche.

The information placed in tape storage is available whenever a set of data becomes complete. An appropriate analysis of the complete data is run, utilizing programs such as the Biomedical Computer Programs, e.g., BMD06M, (Dickson, 1965). A complete library of BMDs is available for such operations as multivariate analysis, regressional analysis, canonical correlations, and the like. A statistical analysis of this type indicates the weight to be given to each functional selection, training, and criterion measure.

Cost Effectiveness

In the search of educational technological resources, the availability of materials, aids, methods, and techniques appears to be endless. The funds available for education are limited. The task is to select the resources which serve our purpose best; cost effectiveness is one such criterion. The method employed is an adaptation of the Abt Associates Model (Abt, 1967) with the cost normally fixed by the school budget. Certain student information regarding effectiveness is readily available, for example: attendance, achievement, and dropouts. Other information is unavailable or difficult to obtain, for example: equality of educational opportunity, change in attitude, and djustment to changing conditions. The effectiveness of a model varies with the community setting and personnel. Thus, the results of a cost effectiveness analysis might differ with implementors.

In the model program there are two major subsystems to consider in cost effectiveness, the teacher education program and the elementary school program. The specifications are for the student who is to become the teacher; however, the teacher, in turn, is measured by the improvement in achievement of the elementary pupil. Thus, the cost effectiveness study includes the entire system.

PROGRAM MANAGEMENT

Specifications for program management and the administrative organization of the model program are included in part 5 of the Final Report.[17]

They are centered on the assumption that the model program functions should be the basis for determining the administrative organization that will implement and sustain the program. Persons who have achieved professorial status for their high level of academic or professional competency will focus their attention on their areas of specialization. Persons with managerial skills will be employed for nonprofessional activities.

The diagram of specifications for basic administration (see figure 7) designates the dean of the college of education as the head administrator. He works with a committee of executives drawn from all colleges responsible for the education of pre- and inservice education of elementary teachers, superintendents of school districts, representatives of other participating universities and colleges, and representatives of the state department concerned with education. The director of teacher education--elementary is the chief of the program. Under his direction are three directors of professorial status and one manager. The directors are of program evaluation, project evaluation, and instructional units. The manager's title is manager of student program advisement services.

The director of program evaluation is concerned with the entire evaluation system within the on-going program including the long-term followup evaluation, while the director of project evaluation is an "outside" observer who has no operational responsibilities of direct involvement in the program. He is responsible for establishing and coordinating the work of a panel of outside consultants who will evaluate the operation of the various components of the program and provide evaluative data to all concerned.

The director of instruction has direct responsiblity for the curriculum structure, and with the help of his staff, supervises the separate instructional units. The manager of student advisement is familiar with program requirements for admission, program sequences, transitional and terminal degree programs, and with the general rules and policies of the institution. He supervises the work of three coordinators (managers), one for each phase of the model: preprofessional, professional, and specialist, who facilitate the work of the adviser and instructors.

Each of the various instructional units (groups a, b, c, and d in figure 7) has an advisory board, director, manager of instructional unit, and three associate managers in charge of various services such as clinics, instructional unit laboratories, laboratory experiences, and group interaction learning experiences. The instructors of the instructional units report directly to the director of the instructional unit, but their work is facilitated by the managers.

---

[17] Ibid., GPO: pp. 210-22; ED: pp. V 27-39.

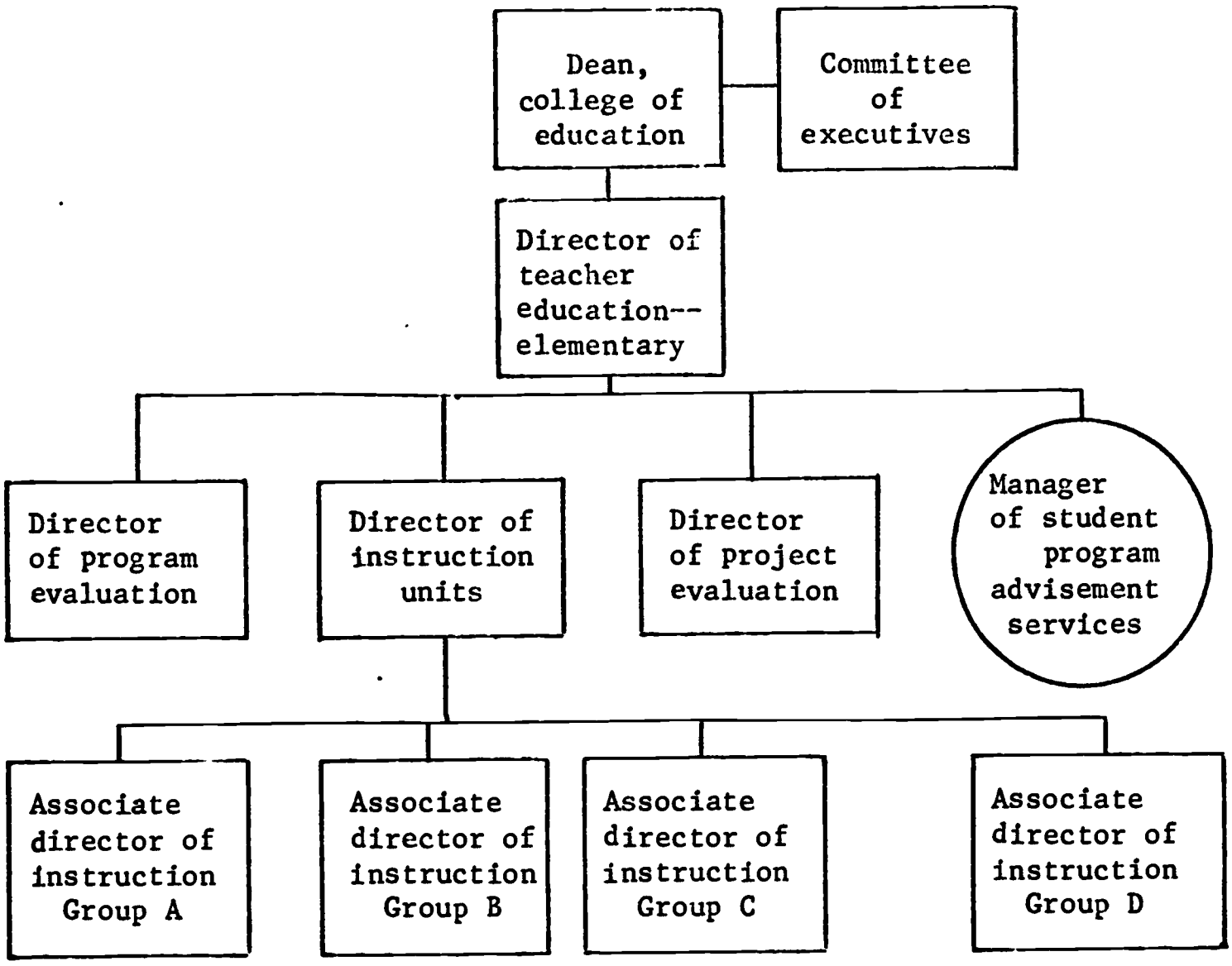

FIGURE 7

DIAGRAM OF SPECIFICATIONS FOR BASIC ADMINISTRATIVE ORGANIZATION

OTHER FEATURES OF THE MODEL PROGRAM

There are special features of this model program which are not directly evident from the summary of specifications presented thus far. These features include: laboratory experiences, student orientation and advisory program, reciprocal commitments, year-round education, staggered registration, mastery criterion, and the teach-as-taught effect.

Laboratory Experiences

The model specifies the need for five kinds of laboratory facilities: (1) general resources laboratories which include facilities used by all students of universities, colleges, and schools, such as central libraries and computer instruction centers, (2) instructional units central resources laboratories which house and provide all learning materials and equipment essential for undertaking of PMs with particular areas and which are not readily or conveniently available in general laboratories, (3) instructional unit field laboratories which provide field facilities as needed, (4) clinics in which remedial services are provided when required, and (5) instructional unit interaction laboratories which arrange for such activities as special lectures, seminars, workshops, and recitals. Specifications for laboratory facilities and experiences are found in the Final Report.[18]

Student Orientation and Advisory Program

To maintain the student's security and need for social interaction as he moves at his own rate through the program, specifications call for a comprehensive orientation and student advisory program. Among other activities, program advisers must hold planned seminars weekly with advisee groups which are relatively stable in membership to discuss education problems of general and professional concern which are not likely to be covered in PMs. Also, all program advisers are required to provide liberal office hours during which individual students may consult with them on matters which are not of general interest during the regularly scheduled meetings. In this way, although the student finds himself interacting with one group one day and another the next, he maintains a home base where he is able to express himself comfortably in a group situation in which he has established social identity.

Reciprocal Commitments

Although specifications for the model program provide for reciprocal commitments, they are not adequately stressed in the Final Report, and opportunity is taken here to give more emphasis to this requirement. The model program must involve numerous local and state agencies for effective development, implementation, and sustained operation. This requires that city and county elementary school districts cooperatively participate in the training of elementary school teachers by providing exchange personnel such as coordinators, supervisors, principals, and classroom teachers to work with the model program on a shared basis. They would serve as instructors or program development specialists as they concurrently assume parttime

[18] Ibid., GPO: pp. 194-95, 222-25; ED: pp. V 11-12, V 39-42.

roles for the specialties in their local school systems. Also, these school systems would provide materials, laboratory settings, opportunities for paraprofessional employment of the students as aides or assistant teachers, and recommendation and/or sponsorship of certain students for special training. In addition, they would open the doors of their curriculum libraries and elementary school classrooms for study, reference materials, elementary school learning materials, and for such activities as observation, paraprofessional participation, supervised teaching, field studies, and demonstrations.

As for state organization involvement, commitments would be made by the regents of the university system for awarding degrees and by the state department of education for awarding teaching certificates. Also, it is required that reciprocal agreements be made to provide cooperative working relationships with the junior colleges of the state and with other interested colleges and universities. These agreements would parallel the preprofessional phase of the program in those institutions where lower division students would enter the model sequence in what has traditionally been called the "junior year."

It is also specified that agreements be made with research and development centers, regional laboratories, and other such units which are concerned with early childhood education, education of the culturally disadvantaged, education of nonEnglish-speaking children, and elementary education, and would share their research findings, programs, and facilities to the mutual advantage of these organizations and the model program operation.

As for reciprocal commitments with the project staff, the specifications call for early and explicit arrangements on authorship rights and royalties, since it is likely that eventually the learning materials produced during the development phase of the project will be published for wider distribution than the local campus. Early decisions regarding this type of commitment are likely to serve as motivating factors to staff members.

Year-round Education

The model program encourages institutions of higher learning to be operative 12 months a year. With this program there is no reason for semesters, quarters, summer vacations, or spring recesses. Such a plan obviously provides for more continuous use of the student's time. It could also provide for increased utilization of the professorial staff, many of whom are "vacationed" three months of the year. Similarly, physical facilities and materials which are partially used some of the time, and over-loaded at other times, might be provided more uniform attention with considerable savings.

Year-round education with individualized instruction provides for the conservation of human resources. For example, the capable student with limited financial assistance might well be able to keep his parttime job and continue learning activities through what are now lengthy vacation periods, and the student who loses six weeks through illness could resume

his responsibilities without the serious losses which are evident under the conventional semester or quarter system.

Staggered Registration

Each fall, winter, spring, and summer, long lines of students are seen on campuses across the nation waiting to enroll in colleges and universities. Thousands of students have to be registered, advised, enrolled, and accounted for all at once. They must be processed through dormitories, lunch rooms, clinics, book stores, and ticket desks. The efforts of all administrative, instructional, technical, and clerical personnel are extended long hours in preparation for the event. Technological equipment from pencils and typewriters to calculators and computers are all required on an overload basis.

The model program is designed to encourage the practice of staggered registration. That is, insofar as enrollment in the model elementary teacher preparation program is concerned, registration of beginning students could take place whenever a suitable number (for example, 25 to 30) were ready and facilities were available. This might be monthly. Thereafter, each student would enroll in the next PM block as soon as he had completed the prerequisites.

Mastery Criterion

At the core of the model program are behaviors which are categorized and sequenced. It is the acquisition of these behaviors that determines the student's success. This is in contrast to the conventional program in which success is often determined on the extent to which a given amount of knowledge is acquired in a given amount of time.

In the model program the student must acquire a defined level of mastery of any particular behavior before he is regarded as having the prerequisites to move on to the next. Thus, the model program encourages the disposition of letter grades, grade point averages, and other symbols of achievement which are based primarily on the extent of achievement within a given time period.

Teach-As-Taught Effect

In the past many teacher education programs have been subject to the criticism that their instructors have tacitly expressed the "teach-as-I-say, not-as-I-do" principle. In many institutions of higher learning, teachers inservice, as well as students in preservice preparation, have experienced a lock-step instruction, void of provision for individual differences and based upon time criteria with rewards in the form of symbols, while at the same time, they are taught to provide for individual differences, develop intrinsic motivation, and care for personality development of the children under their supervision. Despite the fact that many (perhaps most) of these elementary school teachers endorsed the principles of sound educational procedures presented to them, relatively few were, on the basis of their experiences, able to invent and devise sufficient techniques to implement the beliefs they endorsed. Thus, many eventually retreated to teaching as they were taught.

SUMMARY

Since the model is designed on the very principles of instruction that are common to an exemplary elementary school program of instruction, it is anticipated that as these teachers take their places in educational practices upon completion of the model program, they, too, will teach-as-they-were taught. However, they will have learned, first-hand, the techniques to implement their beliefs.

BIBLIOGRAPHY

Abt, C.C., Design for an Elementary and Secondary Education Cost Effectiveness Model, Vol. 1, Model Description (Cambridge: Abts Associates, 1967). ED 014 152. EDRS Price: MF-$1.00; HC-$9.32.

Bloom, B.S., editor, Taxonomy of Educational Objectives: The Classification of Educational Goals: Handbook I: Cognitive Domain (New York: David McKay Company, 1956).

Dickson, W.J., editor, Biomedical Computer Programs, Revised Edition (Los Angeles: School of Medicine, University of California, 1965).

Johnson, Charles E., and others, Georgia Educational Model Specifications for the Preparation of Elementary Teachers, Final Report (Washington, D.C.: Government Printing Office, 1969).

Krathwohl, D.R., and others, Taxonomy of Educational Objectives: The Classification of Educational Goals: Handbook II: Affective Domain (New York: David McKay Co., 1964).

U. S. Office of Education, Request for proposal number OE-68-4, Washington, D.C., 1967.