

Objectives and Methods for Secondary Teaching

WALTER D. PIERCE
MICHAEL A. LORBER

Illinois State University

PRENTICE-HALL, INC., Englewood Cliffs, New Jersey 07632

Library of Congress Cataloging in Publication Data

PIERCE, WALTER D (date)

Objectives and methods for secondary teaching.

Includes bibliographies and index.

I. High school teaching. I. Lorber, Michael A.,
(date) joint author. II. Title.

LB1737.A3P55 373.1'1'02 76-26662

ISBN 0-13-628958-4

*To our wives, Pam and Ellen,
whose patience is infinite*

©1977 by Prentice-Hall, Inc.,
Englewood Cliffs, New Jersey 07632

All rights reserved. No part of this book may
be reproduced in any form or by any means
without permission in writing from the
publisher.

Printed in the United States of America

10 9 8 7 6 5 4 3 2 1

PRENTICE-HALL INTERNATIONAL, INC., *London*
PRENTICE-HALL OF AUSTRALIA PTY. LIMITED, *Sydney*
PRENTICE-HALL OF CANADA, LTD., *Toronto*
PRENTICE-HALL OF INDIA PRIVATE LIMITED, *New Delhi*
PRENTICE-HALL OF JAPAN, INC., *Tokyo*
PRENTICE-HALL OF SOUTHEAST ASIA PTE. LTD., *Singapore*
WHITEHALL BOOKS LIMITED, *Wellington, New Zealand*

Preface

Many educators have come to realize that a potential solution to several pervasive needs in education today can be found in competency-based education. In their attempts to make the transition from the traditional approaches commonly used in teacher education to those used in competency-based education, teacher educators and students often find themselves attempting to use a basic secondary-education methods text that emphasizes the teaching *process* with a supplementary paperback that focuses on the teaching *product*.

This text is designed to include the elements commonly found in secondary methods texts, but it is written with an internal consistency that agrees with and actively incorporates fundamental principles espoused by the competency-based education movement. It therefore includes such things as sample precise instructional objectives for the users of this book at the beginning of each chapter (other objectives can be built by the reader as his or her needs dictate), model self-instructional packages, and a basic schematic model for understanding competency-based education as it influences the practicing teacher. In addition, practical matters, such as the

teacher's role in discipline and an approach to continuous self-improvement, are included, with emphasis on aspects relating to competency-based education.

Another unique feature of this book is a new approach to classifying objectives in the affective domain, which is useful in a practical approach because it assists in solving the teacher's often-felt dilemma when dealing with affective domain objectives. The relationship between the cognitive domain and affective domain is discussed in a way so as to make affective domain objectives more useful.

This book was made possible through the assistance of many people. Specifically, we wish to thank Dr. Charles Gray for his efforts with the affective domain chapter; Dr. Leo Eastman, who foresaw the development of competency-based education and proceeded in that direction early in the movement; and Dr. Albert Upton, whose patience in explaining what should be obvious is limitless. Finally, we thank the Professional Sequence staff at Illinois State University for their many ideas and contributions.

W.D.P. / M.A.L.

Contents

PREFACE, ix

I* A THEORETICAL FOUNDATION FOR INSTRUCTION, *I

Objectives, 2 Four-Stage Models of Instruction, 2

A Logical Instructional Model (LIM), 4 State Precise Instructional Objectives, 5

Preassess, 6 Instruct, 7 Evaluate, 9

Extent of the Use of the Logical Instructional Model, 10 Summary, 11

Selected Readings, 12

***2* OBJECTIVES, AIMS, PURPOSES, GOALS**

What Are We Really After? 13

Objectives, 14 Educational Goals, 14 *Early Educational Goals, 14*

Today's Needs, 15 Attempts to Develop Aims, 17 *The Committee of Ten, 18*

The Committee on College Entrance Requirements, 19

The Commission on the Reorganization of Secondary Education, 19

The American Youth Commission, 20

The Educational Policies Commission (1938), 21

The National Association of Secondary School Principals, 21
The Educational Policies Commission (1961), 21 *The Effect of Broad Aims, 22*
Summary, 25 *Selected Readings, 26*

3 WRITING AND USING PRECISE COGNITIVE INSTRUCTIONAL OBJECTIVES, 27

Objectives, 28 *Generating Objectives, 28* *Gathering the Content Base, 28*
The Parts of Cognitive and Psychomotor Objectives, 29
Observable Behavior, 29 *Conditions, 31*
Minimum Acceptable Standard, 32 *Review, 35*
Practice in Working with Objectives, 35
Practice Exercise 1: Characteristics of Objectives, 35
Self-Test: Rewriting Poorly Stated Objectives, 37
Self-Test: Characteristics of Objectives, 38
Classification of Objectives, 39 *The Levels Within the Cognitive Domain, 40*
Practice in Classifying Objectives in the Cognitive Domain, 43
Practice Exercise 2: The Domains, 43 *Practice Exercise 3: Cognitive Levels, 44*
Testing Objectives for Clarity, 45 *The Use of Precise Instructional Objectives, 46*
Summary, 47 *Selected Readings, 48*

4 WRITING AND USING OBJECTIVES IN THE AFFECTIVE DOMAIN, 50

Objectives, 50 *Pros and Cons of Affective Domain Objectives, 51*
Individual Affective Objectives Versus Group Affective Objectives, 53
Parts of Affective Objectives for Individuals, 53
Parts of "Basic" Affective Objectives, 54
Observable Behaviors for Affective Objectives, 55
Conditions for Affective Objectives, 56
Criteria for Affective Objectives, 57 *The Complete Group Affective Objective, 58*
Practice in Writing Basic Affective Domain Objectives, 59
Exercise 1: Individual Basic Affective Domain Objectives, 59
Exercise 2: Group Basic Affective Domain Objectives, 60
Classifying Affective Domain Objectives to Aid Teaching, 66
Pierce-Gray Classification of Affective Objectives, 66
A Model of the Relationships Between the Cognitive and The Affective Domains, 72
The Pierce-Gray Classification and Approaches to Value Education, 74
Formal Assessment of Affective Objectives for Groups, 74 *Summary, 76*
Selected Readings, 76

5 PREASSESSMENT The Great Time Saver, 78

Objectives, 79 *Understanding the Adolescent: Psychological Preassessment, 79*
Adolescence, 79 *Needs of the Adolescent, 80*

Sources of Information in Assessing Students, 83 *Cumulative Records, 83*
The Student as a Source, 85
 Strategies for Blending Psychological Preassessment and Instruction, 85
 Preassessment Procedures for Specific Instructional Objectives, 86
 Student Reaction to Preassessment Tests, 88
 How Much Preassessment at One Time? 89 Summary, 90
 Selected Readings, 91

6 SELECTING INSTRUCTIONAL PROCEDURES, 92

Objectives, 93 Types of Instructional Experiences, 93
Formal and Informal Lectures, 93 Questioning, 98 Discussions, 101
Brainstorming, 108 Demonstrations, 108
Modified (or "British-Style") Debates, 110 Panel Discussions, 111
Sociodramas, 112 Guest Speakers, 112 Field Trips, 113
Small Group Activities, 115 Out-of-Class Assignments, 117
 Summary, 119 Selected Readings, 120

7 INSTRUCTIONAL MEDIA AND MATERIALS, 121

Objectives, 122 General Utilization Factors, 122 Aids to Teaching, 124
Materials That Are Read, 124 Audio Aids, 127 Visual Aids, 129
Audio-Visual Combinations, 134 Computer-Assisted Instruction, 137
Biofeedback and the Chemical Transfer of Knowledge, 139 Summary, 140
 Selected Readings, 140

8 EVALUATION, 142

Objectives, 142 The Grading Dichotomy, 143
 Basic Evaluation Considerations, 144 *Honesty, 144 Variety, 144*
Frequency, 145 Purpose, 146 Review, 147 Reliability and Validity, 147
 Criterion- vs. Norm-Referenced Tests, 148 Paper and Pencil Tests, 149
Teacher-Made Objective Tests, 149 Teacher-Made Essay Tests, 157
Quick Reference Guidelines—Teacher-Made Tests, 160
Validity and Use of Teacher-Made Tests, 161 Standardized Tests, 161
Types of Standardized Tests, 162 General Utilization Factors, 165
 Alternate Evaluation Procedures, 165 Calculating Grades, 167
Grade Calculation Schemes, 167 Grading and Subjectivity, 176
 Reporting Grades, 176 Summary, 178 Selected Readings, 179

9 INDIVIDUALIZING INSTRUCTION, 180

Objectives, 180 The Systems Approach to Individualization, 181
 The Status of Self-Instructional Packages—Model Package 1, 184
Part 1: Objectives for Model Package 1, 184 Part 2: Self-Preassessment, 184
Part 3: Learning Activities, 185 Part 4: Evaluation Procedures, 203

Building a Self-Instructional Package—Model Package 2, 205

Part 1: Objective for Model Package 2, 205 Part 2: Self-Preassessment, 205

Part 3: Learning Activities, 206 Part 4: Evaluation, 215 Summary, 216

Selected Readings, 216

10 UNIT PLANNING, 217

Objectives, 217 Planning Units, 218 *What is a Unit Plan? 218*

Generating Appropriate Objectives, 218 Writing a Rationale, 219

Specifying Content, 221 Collecting Mediated Instructional Aids, 222

Selecting Instructional Experiences, 223

Organizing the Parts of a Unit: An Abbreviated Model, 223

Deciding on Optional Activities, 225 Planning for Evaluation and Future Use, 226

Summary, 226 Selected Readings, 227

11 LESSON PLANS, 229

Objectives, 229 Pros and Cons of Lesson Planning, 230

Lesson Plan Components, 231 *Objectives, 231 Content, 233*

Teaching-Learning Activities, 234 Materials, 235 Evaluation, 235

Time, 235 Miscellaneous Components, 235 Writing a Lesson Plan, 236

Summary, 237 Model Lesson Plans, 240 Selected Readings, 248

12 DISCIPLINE, 249

Objectives, 249 Four Positions Concerning Disciplines, 250

Maslow's Hierarchy, 251 *Physiological Needs, 251 Safety Needs, 253*

Love Needs, 255 Esteem Needs, 256 Self-Actualization Needs, 258

Helpful Guidelines for Precluding Discipline Problems, 259

Behavior Modification: Operant Conditioning, 263

Behavior Modification: Reality Therapy, 266

A Discipline Procedure Involving the School Disciplinarian, 269

The Six Steps in a Model Discipline Procedure Involving the

School Disciplinarian, 270 Potentially Dangerous Problems, 272

Hyperactivity and Chemotherapy, 277 Summary, 273 Selected Readings, 274

13 EXAMINING INNOVATIONS IN EDUCATION, 276

Objectives, 277 The Process of Change, 277

Current Educational Emphases, 278 *Accountability, 278*

Alternative Schools, 282 Community Education, 284 Educational Parks, 285

Schools-Within-a-School, 285 Differentiated Staffing, 286

Modular Scheduling, 287 Self-Paced Instruction, 288

The "Systems" Approach, 288 Summary, 291 Selected Readings, 291

14 IMPROVING CONTINUOUSLY AS A TEACHER
Student Learning as a Criterion For Good Teaching, 293

Objectives, 295 Criteria for Judging a Self-Improvement Model, 296
The Steps of the Self-Improvement Model, 296 *Step 1: Objectives, 296*
Step 2: Preassessment, 297 Step 3: Learning Activities, 298
Step 4: Evaluation, 300 Evaluating the Model, 301
Summary, 305 Selected Readings, 306

**Appendix A: SOURCES FOR PRECISE
INSTRUCTIONAL OBJECTIVES, 307**

Appendix B: SAMPLE UNIT PLAN, 309

Appendix C: SAMPLE SELF-IMPROVEMENT LESSONS, 322

INDEX, 335

1

A Theoretical Foundation For Instruction

Among the most intriguing questions confronting the educator bent upon improvement is where to start. One could focus first on the processes within the classroom and the transactions between pupil and teacher, or on the rationale behind any particular educational endeavor. After careful consideration of various starting points, however, it becomes apparent that the components of any logical instructional process are intertwined and inseparable. Hence, one starting point that makes good sense is to attempt to conceptualize a complete process initially and subsequently to examine its parts in relation to the whole.

The procedure most often used in this regard is to focus initial and continued attention on the activities involved in teaching-learning situations. Concern about instructional activities not only dominates most texts dealing with education, it frequently dominates everyday discussions among teachers. It is not uncommon, for example, for students to hear one teacher ask another, "What are you doing in class today?" The question seems perfectly appropriate to students because when they get home and their parents inquire about school, their parents are likely to approach the matter in exactly the same way, i.e.; "What did you do in school today?"

A more appropriate question, however, would be, "What will your students be able to do after instruction that they were unable to do prior to instruction?" But this question is not usually addressed. Many students and teachers seem to accept the idea that activities such as talking about the economy or going on a field trip are of prime importance in and of themselves. The fact that they are vehicles by which skills and information are acquired is usually overlooked. This is not to say that instructional activities are not important; a major portion of this book is devoted to helping teachers improve learning activities. What is even more important, however, is understanding how to select particular activities and how the activities can be made into an effective instructional program. This understanding can be facilitated by an exploration of a theoretical foundation for instruction, and it is the function of this chapter to provide an overview of the theoretical model discussed in the remaining chapters of this text.

OBJECTIVES

The student will:

1. When given a blank schematic of the Logical Instructional Model, label each stage in writing and without error. (Knowledge)
2. Explain orally the function of each stage of the Logical Instructional Model and its relationship to the other stages. (Comprehension)
3. Observe a one-hour lesson and specify, in writing, which stages of the Logical Instructional Model were manifested in the lesson and which specific activities support those assessments. (Analysis)
4. Design a unique schematic that depicts the educational process and defend the logic of the model by explaining, in less than three pages, the interrelationships of its stages. (Synthesis)

FOUR-STAGE MODELS OF INSTRUCTION

In recent years a number of educators have developed models of instruction that consist of four basic elements: (1) preparation of precise instructional objectives: (2) preassessment of students to determine their abilities relative to the objectives: (3) instructional activities to insure achievement of the objectives: and (4) evaluation to determine whether students are able to achieve the objectives.

In 1970 Popham and Baker in *Systematic Instruction*,¹ and Kibler, Barker, and Miles, in *Behavioral Objectives and Instruction*,² depicted these

¹James Popham and Eva Baker, *Systematic Instruction* (Englewood Cliffs, N.J.: Prentice-Hall, 1970), pp. 13 and 18.

²Robert J. Kibler, Larry L. Barker, and David T. Miles, *Behavioral Objectives and Instruction* (Boston: Allyn & Bacon, 1970), p.3.

four stages in schematic diagrams. Popham and Baker used the diagram in Figure 1 to show the model and its self-correcting features.

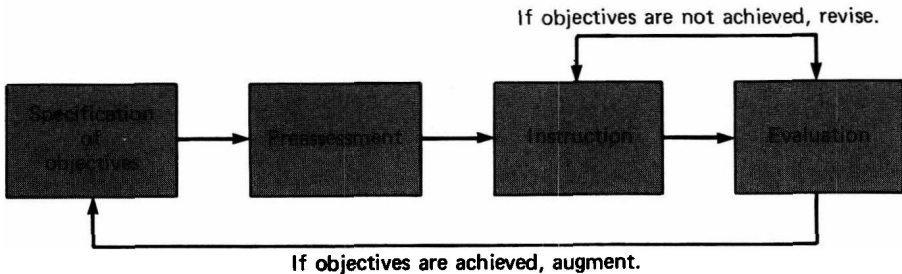


FIGURE 1 A Goal-referenced Instructional Model with Courses of Action Dictated by Evaluation of Results

The diagram by Kibler, Barker, and Miles is very similar. Using the title “General Model of Instruction” and somewhat different labels, they included a “Feedback Loop” to examine the first three stages when such an examination was indicated by the results of the evaluation. The “General Model of Instruction” is diagrammed in Figure 2.

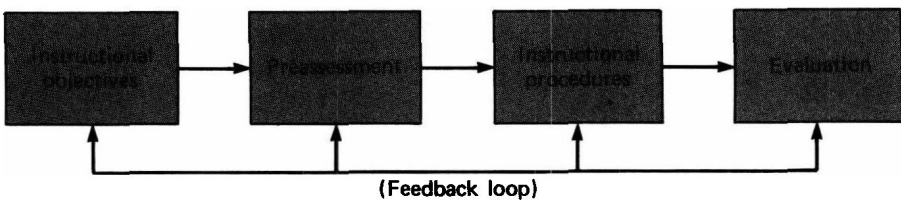


FIGURE 2 A General Model of Instruction

As basic and revealing as they are, both schematics leave a number of questions unanswered. Both, for example, imply that instruction must follow preassessment. This ignores those instances in which preassessment indicates that students already possess the competencies sought. In the model diagrammed in Figure 1 it is assumed that if the objectives are not achieved the fault lies in the instruction. Although this point is taken up in accompanying materials, the model itself could be interpreted as not considering those instances in which students enter the class without the beginning competencies necessary for success. The model diagrammed in Figure 2 carries a number of implications in the “Feedback Loop,” but if students are unable to achieve the objectives no specific course of action is implied other than a

general reassessment of each and every stage of the model. A more precise and detailed model might be even more helpful.

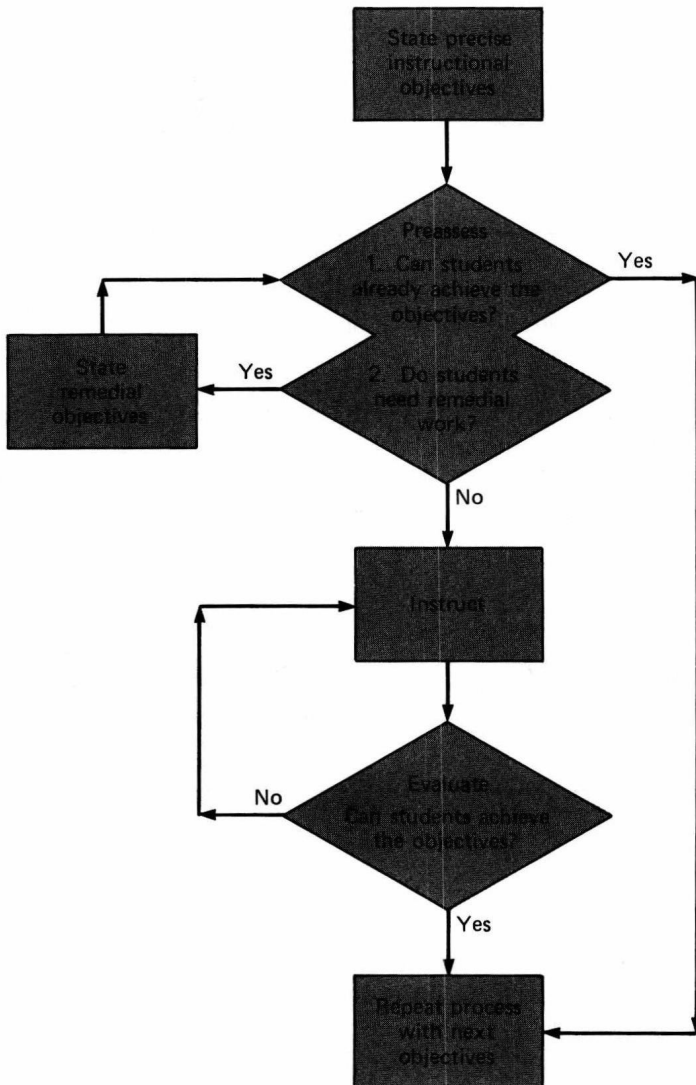


FIGURE 3 The Logical Instructional Model

A LOGICAL INSTRUCTIONAL MODEL (LIM)

The Logical Instructional Model, diagrammed in Figure 3, builds upon the excellent work already done by Popham and Baker, and by Kibler, Barker,

and Miles. It is an attempt to diagram schematically a theoretical foundation for the instructional process that is more complete and more self-explanatory than preceding models. The remainder of this chapter is devoted to providing an overview of this model, and the following chapters are largely devoted to building the understandings and skills necessary to making the model a viable and sound basis for instruction.

State Precise Instructional Objectives

Although it may sound like a contradiction in terms, the place to begin planning an instructional procedure is with the instructional results. The first and most important point to be considered is *what students should be able to do after instruction*. Making this decision is the single most complex and difficult step in planning for instruction.

In every community there are political, sociological, psychological, practical, and subject-matter considerations that must be taken into account when curricula are being built and objectives decided upon. What individual teachers must do is sort out the various factors, classify them into a priority (or pressure) order, and use them to assist in the selection or writing of precise instructional objectives that will satisfy students, parents, administrators, boards of education, and themselves. This is no simple task, especially considering that most teachers have had little, if any, formal training in the writing of precise instructional objectives.

School systems throughout the country are going about the task of acquiring precise instructional objectives in a variety of ways. Some, for example, are purchasing compilations of objectives and asking their teachers to choose and alter objectives rather than write them originally. Other school systems are asking teachers to write objectives for their own classes, while still others are organizing teachers according to subject matter or grade levels and asking them to write objectives on a collective basis.

Below are specific, but typical, kinds of questions teachers must ask themselves as they begin to focus on their objectives.

1. Will the objectives assist in satisfying student needs?
2. Can the students attain the objectives?
3. Are the objectives worthy of attainment?
4. Do the objectives lead to a series of increasingly more important objectives?
5. Are the objectives compatible with the overall goals of the community and school?
6. Are the objectives relevant and reflective of social and cultural realities?
7. Are the necessary human, physical, and financial resources available?
8. Have ideas for objectives been considered from sources such as students and parents?

In addition to being able to justify the inclusion of each objective, the teacher must phrase each so that it conveys the exact instructional intent. At

the very least, each objective should specify exactly what each student is to be able to do at the end of the instruction, and how well he or she must do it. In addition, most objectives will need some clarification of the exact conditions under which the specific competency will be demonstrated.

Obviously the stating of precise instructional objectives is a thought-provoking and time-consuming task, but since every other part of the instructional process depends directly on the objectives, they are all-important. If the objectives are poor the rest of the instructional process is likely to be poor also, but if the objectives are well stated, include an observable behavior, and are measurable, then the instructional process is more likely to be equally strong.

Preassess

Once the precise instructional objectives have been explained to the students, the teacher's next step should be to preassess students' abilities. Since the teacher is seeking to compare the abilities students possess prior to instruction with those they will need in order to demonstrate the specified competencies, the preassessment often consists of an equivalent form of the final evaluation instrument. Properly conducted preassessments can yield a great deal of valuable information, but they primarily provide data related to two specific questions.

The first question is: "Do students already possess the specified competencies?" In some instances it might happen that students already possess the skills and /or information necessary to demonstrate the stated competencies. In these cases it would be pointless to proceed with the planned instruction because it is not needed and would only bore the students. Once the determination is made that students can, in fact, perform as required, they may immediately move to new objectives.

The second question is: "Do students need remedial work?" In some instances preassessment might reveal that students lack the basic skills and /or information they need to begin working toward achievement of the stated objectives. The objectives, for example, might call for students to utilize the multiplication tables, but this skill might not be among the students' current abilities. In these cases the teacher has no logical alternative but to state remedial objectives that will provide students with the background necessary for further progress, and to go through the instructional model with these alternate objectives as the starting point. Students are then more likely to profit from instruction relating to the original objectives.

It is unfortunate when students need remediation because less time is then available for work toward the original objectives. In most cases, however, students will have the background necessary for further instruc-

tion and the teacher may need to provide only a brief review of background material. It is obviously crucial to determine, as accurately as possible, if students do need remediation.

The facts preassessing reveals about students may indicate that a teacher must go back and provide instruction other than that for which he or she is specifically responsible, or that the teacher must skip over instruction that has been carefully and painstakingly planned. This may explain why many teachers simply do not preassess their students; which, in turn, may account for a good deal of the frustration and boredom of which many students complain.

Instruct

By and large, teachers are paid to instruct students. The skill with which instruction is carried out depends largely on the abilities of the teacher, but there are innumerable procedures for improving instruction. Some procedures concern themselves with specific kinds of instructional activities and ways of making them more interesting and therefore more effective. Other procedures focus on basic principles of learning. In this text, specific activities and principles are both explored, and it is at the risk of redundancy (but with the hope that if they are reviewed they may be seen in a new perspective) that a few basic principles are included here. Other collections of such principles can be found in a wide variety of sources from Kibler, Barker, and Miles,³ to the Wisconsin State Department of Public Instruction.⁴

1. *Students differ in ability and rate of learning just as they differ in more observable characteristics such as height, weight, and appearance.* Not only must teachers be aware of such differences, they must make each student aware of his or her own learning characteristics.

Teachers need to help individual students overcome their weaknesses and increase their self-esteem by emphasizing their strengths. Because the weaknesses are so obvious and easy to pinpoint, many times teachers forget about the need to emphasize strengths, and they are thus less successful than they might be. Students will not respond as fully if they feel their weaknesses will continually be exposed. Provisions for fast learners to remain interested and occupied with enrichment material, and for slow learners to obtain the help they need to continue learning are necessary, although sometimes difficult to achieve in every classroom.

³Kibler, Barker, and Miles, *Behavioral Objectives*, pp. 7-9.

⁴See "Learning Principles, Wisconsin State Department of Public Instruction" in Leonard Clark, ed., *Strategies and Tactics in Secondary School Teaching* (Toronto: Macmillan, 1968), pp. 100-107.