📖 BEFORE YOU READ . . .

In previous chapters, behavioral and cognitive theories of learning and research on effective instruction were discussed. Chapter 9 shows how instruction is adapted in the classroom to enhance learning. Some of the most effective strategies used to accommodate instruction to individual needs are listed below.

Accommodating instruction to meet individual needs is a product of quality instruction, which is taught at the appropriate level with adequate incentives and time to learn.

Accommodating instruction to meet individual needs includes the use of within-class ability grouping, in which students form mixed ability cooperative learning teams that do not segregate lower achievers from their classmates.

Accommodating instruction to meet individual needs includes the use of mastery learning, where a pre-established mastery criterion is identified along with opportunities for correction when the criterion is not met and enrichment when it is met.

Accommodating instruction to meet individual needs includes the use of individualized learning strategies (often seen as computer-based instruction and cross-age or adult one-on-one tutors) to address learning differences.

CHAPTER OUTLINE

WHAT ARE ELEMENTS OF EFFECTIVE INSTRUCTION BEYOND A GOOD LESSON?
       A. Carroll's Model of School Learning and QAIT

HOW ARE STUDENTS GROUPED TO ACCOMMODATE ACHIEVEMENT DIFFERENCES?
       A. Between-Class Ability Grouping
       B. Untracking
       C. Regrouping for Reading and Mathematics
       D. Nongraded (Cross-Age Grouping) Elementary Schools
       E. Within-Class Ability Grouping

WHAT IS MASTERY LEARNING?
       A. Forms of Mastery Learning
       B. Research on Mastery Learning

WHAT ARE SOME WAYS OF INDIVIDUALIZING INSTRUCTION?
       A. Peer Tutoring
       B. Adult Tutoring

HOW IS TECHNOLOGY USED IN EDUCATION?
       A. Types of Computer Applications in the Classroom
       B. Research on Computer-Based Instruction

WHAT EDUCATIONAL PROGRAMS EXIST FOR STUDENTS PLACED AT RISK?
       A. Compensatory Education Programs
       B. Early Intervention Programs
       C. Comprehensive School Reform Programs

📖 **AS YOU READ . . .**

WHAT ARE ELEMENTS OF EFFECTIVE INSTRUCTION BEYOND A GOOD LESSON?

      1. Draw a diagram or concept map showing the significance of and inter-relationship among the following terms: (1) **strong incentive**, (2) **appropriate levels of instruction**, (3) **high quality of curriculum**, (4) **high quality of lesson presentation**, (5) **effective instruction**, and (6) **optimal use of time**.

HOW ARE STUDENTS GROUPED TO ACCOMMODATE ACHIEVEMENT DIFFERENCES?

      2. Give examples of the two major types of ability grouping. What does the research literature say about the effectiveness of ability grouping?
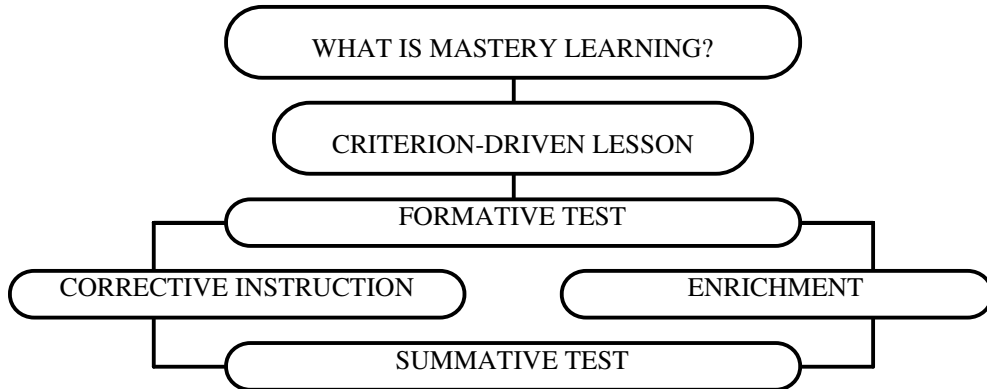
      between-class ability grouping:

      within-class ability grouping:

      What does the research literature say?

WHAT IS MASTERY LEARNING?

3. Define *mastery learning*. What is its underlying philosophy and assumptions? In what context is mastery learning appropriate? Explain **formative assessment**, **summative assessment**, and **corrective instruction**. The diagram below will help you with your answer.

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        ┌──────────────────────────────┐
        │  WHAT IS MASTERY LEARNING?   │
        └──────────────────────────────┘
           ┌────────────────────────┐
           │ CRITERION-DRIVEN LESSON │
           └────────────────────────┘
           ┌────────────────────────┐
           │     FORMATIVE TEST      │
           └────────────────────────┘
   ┌──────────────────────┐   ┌──────────────────────┐
   │ CORRECTIVE INSTRUCTION│   │      ENRICHMENT       │
   └──────────────────────┘   └──────────────────────┘
           ┌────────────────────────┐
           │     SUMMATIVE TEST      │
           └────────────────────────┘
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WHAT ARE SOME WAYS OF INDIVIDUALIZING INSTRUCTION?

4. Describe peer and adult tutoring as appropriate ways of individualizing instruction.

Peer Tutoring	Adult Tutoring

Educational Psychology: Accommodating Instruction to Meet Individual Needs

HOW IS TECHNOLOGY USED IN EDUCATION?

      5. The use of technology in education, particularly computer-based instruction (CBI) applications, is rising rapidly. Research has shown CBI to be effective and efficient for many learning situations. List several types of computer-based instruction in the space below. Give an example of an appropriate learning situation for each type, and give an example of an inappropriate learning situation for the application.

CBI Application	Example of appropriate use	Example of inappropriate use
Drill and practice		

WHAT EDUCATIONAL PROGRAMS EXIST FOR STUDENTS PLACED AT RISK?

      6. Define *at risk* and *placed at risk*. What conditions place students at risk? Give examples of **compensatory education programs**, **early intervention programs**, and **comprehensive school reform programs**.

SELF-CHECK

DIRECTIONS: Below are questions related to the main ideas presented in the chapter. Correct answers or typical responses can be found at the end of the study guide chapter.

1. The QAIT model of effective instruction includes which of the following components?

    A. quality of instruction, appropriate levels of instruction, incentive, time
    B. quantity of knowledge, assessment of learning, instructional time, teaching effectiveness
    C. quality of curriculum, affective outcomes, inclusion, tutoring
    D. question, assess, intervene, teach

2. Match the following elements from Carroll's model of instruction with its example.

_____ Students have prerequisite skills.   A. aptitude

_____ The teacher sets aside extra class time.   B. understand instruction

_____ Students are eager to study until the   C. perseverance
        skills are mastered.

                                                                    D. quality of instruction
_____ The lesson is presented in such a way
        that students learn quickly.

3. Which of the following statements represents a basic assumption of mastery learning?

    A. Levels of achievement vary, while learning time is constant.
    B. Achievement level and learning time are flexible.
    C. Achievement level and learning time are fixed.
    D. Learning time varies, while level of achievement is constant.

4. All of the following are central features of mastery learning except

    A. norm-referenced tests that compare students to each other.
    B. formative quizzes that provide feedback on the student's progress.
    C. summative exams that assess performance at the conclusion of a lesson.
    D. corrective instruction that is given when mastery is not achieved.

5. Placing students in mixed-ability groups and holding them to high standards while providing a variety of instructional approaches is called

    A. compensatory education.
    B. remediation.
    C. individualized instruction.
    D. untracking.

6. Describe how within-class and between-class ability groupings are different.

7. Which of the following statements about peer tutoring is accurate?

    A. Peer tutoring is an ineffective strategy for teaching secondary-level students.
    B. Peer tutoring increases the achievement of both the tutees and the tutors.
    C. Peer tutoring yields greater achievement gains for tutees than for tutors.
    D. Peer tutoring is an ineffective strategy for teaching elementary-level students.

8. Individualized instruction methods, in which students work on self-instructional materials at their own levels and rates, are called

    A. early intervention.
    B. programmed instruction.
    C. cooperative learning.
    D. ability grouping.

9. Which of the following statements about the use of the Internet in classrooms is accurate?

    A. Most research studies show that the Internet is a powerful and cost-efficient learning tool.
    B. The Internet limits students' abilities to communicate with others.
    C. There is little research on the achievement outcomes of Internet involvement.
    D. Research demonstrates that the Internet decreases a student's achievement level.

10. Educational programs for students who are at risk that prevent or remediate learning problems and target students from poor or disadvantaged backgrounds include all of the following except

    A. compensatory education.
    B. special education.
    C. Title I.
    D. intervention programs.

📖 AFTER YOU READ . . .

PRACTICE TEST

DIRECTIONS: Each chapter heading from the text is listed below and followed by a series of related questions worth a total of ten points. Respond to each question, check your answers with those found at the end of the study guide chapter and determine your score. Consider nine points per heading to be mastery.

WHAT ARE ELEMENTS OF EFFECTIVE INSTRUCTION BEYOND A GOOD LESSON?

Multiple Choice

1. (1 point)   _____   All of the following elements are necessary for effective instruction except

A. high quality, developmentally appropriate lessons.
B. adequate incentives for students to learn.
C. appropriate amounts of time for students to learn.
D. whole group, teacher-led activities.

2. (1 point)   _____   Which statement best depicts Carroll's model of effective instruction?

A. Learning is the product of aptitude and ability.
B. Achievement refers to the time needed to learn in relation to the time actually spent learning.
C. Learning is a measure of the quality of instruction.
D. A learner's aptitude restricts the amount of information that he or she is capable of learning.

3. (1 point)   _____   According to Carroll, which one of the following learning elements is under the direct control of the student?

A. time to learn
B. quality of instruction
C. aptitude to learn
D. level of instruction

4. (1 point)   _____   A teacher blends strong knowledge of the content with developmentally appropriate teaching strategies, at a developmentally appropriate level, and provides students with adequate practice time for learning. Which part of the QAIT model of effective instruction remains?

A. perseverance
B. quality of instruction
C. incentive
D. opportunity

Matching

5. (4 points) _____ A teacher creates lessons that match students' prior knowledge and ability.

A. quality of instruction

_____ A teacher gives recognition to students who work diligently to learn the presented material.

B. appropriate level of instruction

_____ A teacher creates lessons that will be interesting, informative, well-organized, and clear to students.

C. incentive

D. time

_____ A teacher recognizes that not all students will complete assignments simultaneously.

Short Answer/Essay

6. (2 points) Explain the difference between student-controlled elements (from Carroll's model) and teacher-controlled elements (from the QAIT model) that guide effective instruction.

_____

_____

HOW ARE STUDENTS GROUPED TO ACCOMMODATE ACHIEVEMENT DIFFERENCES?

Multiple Choice

7. (1 point) _____ Which example best describes between-class ability grouping?

A. A second grade teacher divides the class into the yellow, blue, and green math groups.
B. Following a math placement test for ninth graders, students with low scores are assigned to remedial math, students with average scores are assigned to pre-algebra, and students with high scores are assigned to algebra I.
C. A teacher's fifth grade class is made up of three cooperative learning groups, each having an equal number of high, mid, and low achievers.
D. Secondary students are allowed to choose courses from a variety of electives and are then assigned to the choices.

8. (1 point) —————— Which example best describes within-class ability
grouping?

A. From scores received on an aptitude test, a counselor assigns tenth grade
students to either a college preparatory or a general education track.
B. An elementary school groups its students according to their reading level,
not their grade level, so that like-ability students are together in a room for
reading instruction.
C. Gifted learners from a middle school are brought together for two hours each
week for additional science and math instruction.
D. A teacher assigns students to class teams, each consisting of mixed abilities,
where students work on reading vocabulary.

9. (1 point) —————— Research shows that all of the following statements are true
for between-class ability grouping, except

A. between-class ability grouping is more advantageous for low-track class
members than for high-track class members.
B. a problem with between-class ability grouping is that placement in a group
is often made on the basis of standardized test scores, not course achievement.
C. placing low-achieving students together in one group decreases the
possibility that they will be exposed to positive role models.
D. teachers assigned to work with low-track classes exhibit less enthusiasm and
organization than teachers assigned to work with high-track classes.

10. (1 points) —————— Which of the following is a true statement regarding
effective within-class grouping, according to the research
presented in the text?

A. Students of all achievement levels benefit from within-class ability groups.
B. Teachers' expectations of advanced students are lower in homogeneous
ability groups than in heterogeneous ability groups.
C. Within-class ability groups have stigmatizing effects on low-achievers.

Short Answer/Essay

11. (6 points)   List three types of between-class ability grouping strategies and three types of
within-class ability grouping strategies used in reading or mathematics.

——

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WHAT IS MASTERY LEARNING?

True or False

12. (1 point) —————— One widely used means of adapting instruction to the needs
of diverse students is called mastery learning.

Multiple Choice

13. (1 point) _____ Which statement best describes the basic underlying idea of mastery learning?

A. Making academic comparisons between students foster healthy competition.
B. Grading on the curve is the best approach for assessing student achievement.
C. Whole group instruction that focuses mainly on low achieving students will assure that all students grasp lesson concepts.
D. Students should possess prerequisite skills prior to addressing more advanced skills, regardless of the time it takes to learn the prerequisite skills.

14. (1 point) _____ What is the term used to describe a pre-established standard that a student is required to meet in order to be considered proficient in a skill?

A. mastery criterion
B. remediation
C. enrichment

15. (1 point) _____ An instructional event that helps to broaden the knowledge level of students who have reached mastery level for a given outcome is called

A. an achievement test.
B. a corrective lesson.
C. an enrichment activity.

16. (1 point) _____ What is the term used to describe an instructional event that helps a student to reach mastery level when he or she was unable to do so initially?

A. achievement outcome
B. corrective instruction
C. enrichment activity
D. summative evaluation

17. (1 point) _____ Which of the following statements is a criticism of mastery learning?

A. Mastery learning effects on student achievement are consistently negative.
B. Mastery learning techniques force teachers to become less clear about objectives and how to teach them.
C. Mastery learning involves a trade-off between the amount of content covered and the degree to which students can master each concept.
D. Mastery learning is least effective when used to teach basic skills that form the foundation for later learning.

Short Answer/Essay

18. (4 points)   According to Bloom, how is mastery learning different
                 from traditional teaching approaches?

_____
_____
_____
_____

WHAT ARE SOME WAYS OF INDIVIDUALIZING INSTRUCTION?

True or False

19. (1 point)   _____   All of the following are examples of individualized
                                 instruction except

                                 A. peer tutoring
                                 B. programmed instruction
                                 C. cross-age tutoring
                                 D. norm-referenced evaluation

20. (1 point)   _____   According to research cited in the text, which type of
                                 tutoring situation is most effective?

                                 A. same-age peer tutoring
                                 B. cross-age, same-ability tutoring
                                 C. same-ability peer tutoring
                                 D. cross-age, cross-ability tutoring

21. (1 point)   _____   Adult tutoring has all of the following features, except that
                                 it

                                 A. is one of the most effective instructional strategies known.
                                 B. is expensive.
                                 C. makes use of volunteers.
                                 D. is ineffective with low achievers.

Short Answer/Essay

22. (6 points)   What issues should be kept in mind as you develop a
                 tutorial program?

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HOW IS TECHNOLOGY USED IN EDUCATION?

Short Answer/Essay

23. (10 points)   Give five examples of computer-based instruction, and explain how they might be used in the classroom.

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WHAT EDUCATIONAL PROGRAMS EXIST FOR STUDENTS PLACED AT RISK?

True or False

24. (1 point)   _____   Compensatory education is designed to prevent or remediate learning problems among students who are from low income families or who attend schools in low income communities.

Short Answer/Essay

25. (2 points)   Explain why the term *at risk* was replaced by the term *placed at risk.*

_____
_____
_____

Matching

26. (4 points)   _____   programs designed to overcome problems associated with low socioeconomic status   A. early intervention

                 _____   programs that emphasize infant stimulation, parent training, and other services from birth to age five   B. compensatory

                                                                                                                                          C. Title 1

                 _____   programs that are federally funded for schools to provide extra educational services   D. pull out

                 _____   programs in which students are placed in separate classes for remediation

Short Answer/Essay

27. (3 points)   Write a brief description of the Reading Recovery program,
early intervention, and Success for All.

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Now check your answers and total your points. Answers are found at the end of the study guide chapter.

SCORING	POINTS NEEDED FOR MASTERY	POINTS RECEIVED
WHAT ARE ELEMENTS OF EFFECTIVE INSTRUCTION BEYOND A GOOD LESSON?	9	
HOW ARE STUDENTS GROUPED TO ACCOMMODATE ACHIEVEMENT DIFFERENCES?	9	
WHAT IS MASTERY LEARNING?	9	
WHAT ARE SOME WAYS OF INDIVIDUALIZING INSTRUCTION?	9	
HOW IS TECHNOLOGY USED IN EDUCATION?	9	
WHAT EDUCATIONAL PROGRAMS EXIST FOR STUDENTS PLACED AT RISK?	9	

SELF-CHECK ANSWERS   Chapter 9

1. A. The QAIT model of instruction includes quality of instruction, appropriate levels of instruction, incentive, and time.

2. A, B, C, D. Aptitude means that students have the prerequisite skills necessary to understand new information. Understanding instruction is the degree to which the teacher monitors how well students are learning. Perseverance refers to the students' level of motivation. Quality of instruction refers to the set of activities that make up teaching.

3. D. Mastery learning allows learning time to vary while keeping the level of achievement consistent. This provides for student differences. The basic idea behind mastery learning is to make sure that all students have learned a particular skill to a pre-established level of mastery before moving on to the next skill.

4. A. Norm-referenced tests that compare students to each other are not central features of mastery learning. In mastery learning the goal is to have the student compete with himself or herself in terms of mastering the material.

5. D. Untracking focuses on having students in mixed-ability groups and holding them to high standards while providing many ways to reach those standards.

6. Within-class ability grouping is a system of accommodating student differences by dividing a class of students into two or more ability groups for instruction in certain subjects. Between-class ability grouping is the practice of grouping students by ability level in separate classes.

7. B. Research evaluating the effects of peer tutoring on student achievement has generally found that this strategy increases the achievement of both tutees and tutors.

8. B. The term programmed instruction refers to individualized instruction methods in which students work on self-instructional materials at their own levels and rates.

9. C. There is little research on the achievement outcomes of Internet involvement, and there is criticism that the Internet is a costly frill that can allow corporate interests to further penetrate schools. Despite the critics, the Internet is fast becoming a fixture in schools for its access to libraries, museums, and global communications. Some researchers suggest that questions about achievement are the wrong questions to ask concerning the use of technology in schools. Rather, we should be looking at access, engagement with new information, increase in problem-solving skills, and so on.

10. B. Compensatory education programs, Title I, and early intervention programs are designed to assist students placed at risk.

9. Traditional classrooms can impede the use of mastery learning because they are based on time (the amount of information a student can learn during a unit, a quarter, a semester, a year) rather than the learning itself (learning all the information, regardless of the time it takes).

10. One factor that would make a peer tutoring program effective would be to use high school students as tutors for middle school students. A second factor would be to adequately train and monitor the tutors.

PRACTICE TEST ANSWERS   Chapter 9

1. D; Whole group, teacher-led activities are not essential elements of effective instruction.

2. B; Achievement equals time needed in relation to time spent.

3. C; aptitude to learn

4. C; incentive

5. B, C, A, D; Appropriate level of instruction requires consideration of students' needs and abilities. Incentive means to give recognition. Quality of instruction includes planning lessons that are interesting, well-organized, and clear. Time refers to recognizing that students will not all complete the assignments simultaneously.

6. Student -controlled elements include aptitude, ability to understand instruction, and perseverance. Teacher-controlled elements include quality of instruction, appropriate levels of instruction, incentive, and time.

7. B; Using test scores to place students in different classes is an example of between-class ability grouping.

8. D; A within-class ability group would consist of students who are at different levels of ability working together.

9. A; Between-class ability grouping is advantageous for high-track class members.

10. A; Within-class ability groups can benefit all students.

11. Between-class ability groups include college preparatory or general track, math placement, or gifted programs. Within-class ability groups include reading groups, math groups, or study groups.

12. True; Mastery learning is used to adapt instruction to individual needs.

13. D; Students should possess prerequisite skills prior to learning new skills.

14. A; mastery criterion

15. C; an enrichment activity

16. B; corrective instruction

17. C; The central problem of mastery learning is that it involves a trade-off between the amount of content that can be covered and the degree to which students master each concept.

18. Bloom proposed that rather than providing all students with the same amount of instructional time and allowing learning to differ, perhaps we should require that all or almost all students reach a certain level of achievement by allowing instructional time to differ.

19. D; norm-referenced evaluations

20. D; cross-age, cross-ability tutoring

21. B; The main drawback to adult tutoring is its cost.

22. Tutors need to be prepared and trained in specific instructional practices. Roles and expectations for both tutors and tutees must be clearly defined. Tutors and tutees need to be supervised and receive appropriate feedback on their work, particularly in the early stages of tutoring. Classroom teachers must work with tutors to create sound procedures for reporting and recording the progress of tutees.

23. Any five of the following are acceptable, examples will vary:
Drill and practice: Good drill and practice programs allow for some learner control in terms of progressing through new materials. Other programs can become little more that electronic flash cards that seemingly promote memorization rather than learning. All drill and practice programs provide some level of feedback and a great deal of patience: students may run the drills as many times as necessary.
Tutorial programs: These are more than tutorials and are intended for use in teaching new material. Virtual Intelligence is often programmed into tutorials so that the program can make adjustments to the student's learning style, needs, and mastery of new material.
Instructional games: games can be close to simulations or they may mimic television game shows with educational content.
Simulations: Used mainly as a substitute for "real world" situations, simulations are next-best when the real object is not available or students do not yet have the necessary practice in new skills to handle the real object or learning situation. Examples include using a driving or flight simulator, practicing physics laws with simulated planets, or experiencing the wild west on the Oregon trail.
Word processing: students and teachers use word processing as a fast means of writing. Studies show that writing quality is slightly improved when using a word processor, usually due to the ease of editing and formatting.
Spreadsheets and databases: The best use for both is in record keeping for teachers, converting raw scores to percentiles or calculating scores, etc.
CD-ROM: music, pictures, short movies (less capacity than a DVD). Teachers use all of these in classroom settings to illustrate and support new knowledge gains. CD-ROM technology allows all of these to be placed on one convenient medium for use with a computer.
Hypertext and hypermedia: the "hyper" in hypertext and hypermedia allow for non-linear movements through information. Hypermedia and hypertext are best used for supporting higher order thinking and problem-solving strategies.
Videodisc and DVD: use of "video" in a non-linear format provides support for constructivist learning, as is the case with the Jasper Woodbury Series.
Integrated learning systems: systems linked in order to monitor progress. An example of an integrated system would be computers linked to a proprietary software application that would allow two-way visual and auditory interaction between several sites and an artist at a major museum.
Computer programming: learning math by programming a "turtle" in LOGO
Internet use: Examples are access to libraries, museums, databases, and global communications.

24. True. Compensatory education programs are for students placed at risk.

25. The term *placed at risk* has replaced the term *at risk* because it emphasizes the fact that the risk is often an inadequate response to a student's needs by school, family, or community.

26. B, A, C, D Early intervention programs target infants and toddlers. Compensatory education programs prevent or remediate learning problems for students who are from lower socioeconomic status communities. Chapter 1 programs are federally funded and target low income and disadvantaged students. Pull-out programs place students in separate classes for remediation.

27. Early intervention programs target at risk infants and toddlers to prevent the possible later need for remediation. Reading Recovery programs provide one-to-one tutoring from specially trained teachers to first graders who are not reading adequately. Success for All programs provide one-to-one tutoring, family support services, and changes in instruction that might prevent students from falling behind.