PLACE®

STUDY GUIDE

51 Instructional Technology

PLACE®

Program for Licensing Assessments
for Colorado Educators®

Readers should be advised that this study guide, including many of the excerpts used herein, is protected by federal copyright law.

TABLE OF CONTENTS

TEST FIELD 51: INSTRUCTIONAL TECHNOLOGY

PART 1: GENERAL INFORMATION ABOUT THE PLACE®
AND TEST PREPARATION

Part 1 of this study guide is contained in a separate PDF file. Click the link below to view or print this section:

General Information About the PLACE and Test Preparation

TEST FIELD 51: INSTRUCTIONAL TECHNOLOGY

INTRODUCTION

This section includes a list of the test objectives, immediately followed by a set of practice multiple-choice questions. For test areas that include a performance assessment (Basic Skills, all languages other than English, Special Education Specialist: Visually Impaired), one or more practice performance assignments (as applicable) will also be included.

TEST OBJECTIVES. As noted earlier, the test objectives are broad, conceptual statements that reflect the knowledge, skills, and understanding an entry-level educator needs to teach effectively in a Colorado classroom. The list of test objectives represents the **only** source of information about what a specific test will cover.

PRACTICE MULTIPLE-CHOICE QUESTIONS. The practice multiple-choice questions included in this section are designed to give you an introduction to the nature of the questions included on the PLACE test. The practice questions represent the various types of multiple-choice questions you may expect to see on an actual test; however, they are **not** designed to provide diagnostic information to help you identify specific areas of individual strengths and weaknesses or to predict your performance on the test as a whole.

When you answer the practice multiple-choice questions, you may wish to use the answer key to check your answers. To help you identify how the test objectives are measured, the objective statement to which each multiple-choice question corresponds is listed in the answer key. When you are finished with the practice questions, you may wish to go back and review the entire list of test objectives and descriptive statements for your test area.

TEST FIELD 51: INSTRUCTIONAL TECHNOLOGY

Subarea	Approximate Percentage of Questions on Test
Foundations of Instructional Technology	20%
Learning Environments and Experiences	50%
Professional Practice and Productivity	30%

FOUNDATIONS OF INSTRUCTIONAL TECHNOLOGY

Understand the role of technology and its social, ethical, legal, and human issues.
Includes the evolving roles of technology in society and its potential for the future; strategies for promoting the legal, ethical, and responsible use of technology and information systems (e.g., observing copyright laws, citing electronic sources, following acceptable use policies); strategies for promoting the safe use of technology (e.g., protecting students from inappropriate information and interactions, security and confidentiality of personal data); awareness of health problems related to the use of technology; strategies for applying technology to enable and encourage learners with diverse backgrounds, characteristics, and abilities to receive an optimal education; and facilitating equitable access to technology for all students.

Understand the basic operations and support of technology in an educational setting.
Includes types and characteristics of technology systems found in the educational environment; terminology related to technology; basic systems support (e.g., installation, maintenance, troubleshooting); strategies for identifying and troubleshooting common problems; and the identification and use of available support resources and information to resolve technical problems.

LEARNING ENVIRONMENTS AND EXPERIENCES

Understand principles of planning and designing learning environments and experiences supported by technology.
Includes the application of educational technology and information literacy principles associated with the development and implementation of short- and long-term instructional planning; the application of current research on teaching and learning with technology to design effective learning environments and experiences; the development and use of technology-enhanced experiences that address content and student technology standards; the design and use of developmentally appropriate learning opportunities that incorporate technology, including the use of learner-centered strategies that address the diverse needs of all learners; design principles for developing instructional materials; and strategies for identifying, locating, and evaluating technology resources.

Understand the use of technology to facilitate the development of problem-solving capabilities, higher-order thinking skills, and creativity.

Includes methods and strategies for using technology resources to solve problems and make informed decisions; methods for designing instruction that employs technology to develop strategies for solving real-world problems; strategies for applying technology in the development of students' higher-order thinking skills and creativity; and the use of technology to organize, analyze, apply, synthesize, and evaluate information.

Understand how to implement and manage effective learning environments supported by technology.

Includes strategies for the management of diverse student learning in a technology-enhanced environment; strategies for improving student learning through the use of technology-supported assessment; strategies for modifying instructional delivery to meet the needs of all students, including the use of adaptive and assistive devices; and methods for developing and modifying lessons to fit the classroom and the available technology.

Understand the use of technology for research, collaboration, and communication (information literacy).

Includes methods and strategies for teaching the use of technology to conduct research, including locating, evaluating, and collecting information from a wide variety of sources; for teaching the use of a variety of media and formats to effectively communicate information and ideas to multiple audiences; and for teaching the use of technology to collaborate, publish, and interact with peers, experts, and other audiences.

Understand the use of technology to enhance student productivity.

Includes methods and strategies for teaching students how to increase productivity by using technology to process data, report results, construct technology-enhanced models, prepare publications, and produce other creative works.

PROFESSIONAL PRACTICE AND PRODUCTIVITY

Understand the use of technology to enhance professional productivity.

Includes strategies for identifying, retrieving, indexing, and sharing information resources; strategies for using technology to collaborate with peers, parents, and stakeholders in support of student learning; the selection and evaluation of appropriate tools for instruction, materials creation, and classroom management; and the application of distance learning options.

Understand applications of technology in assessment and evaluation.

Includes the use of technology to assess student learning of subject matter and the collection and analysis of data, interpretation of results, and articulation of findings to inform instructional practice and maximize student learning.

Understand strategies and resources for professional development in instructional technology.

Includes methods for evaluating and reflecting on professional practice to make informed decisions regarding the uses of technology in support of student learning; the use of technology resources to engage in ongoing professional development, including staying up-to-date on current research and emerging technologies; appropriate activities and coursework for pursuing continuous professional development; and knowledge of professional standards and organizations in instructional technology.

1. Over the last 30 years, the emphasis for technology in schools has evolved in which of the following sequences?

    A. integration, applications, programming, computer-assisted instruction

    B. programming, computer-assisted instruction, applications, integration

    C. applications, programming, integration, computer-assisted instruction

    D. computer-assisted instruction, programming, integration, applications

2. A teacher who would like to remove obsolete spreadsheet software from a computer before installing new spreadsheet software has to decide whether to delete the program file or use an uninstall program. Which of the following would be an important advantage of using an uninstall program rather than the delete function in this situation?

    A. The uninstall program will provide a mechanism for reversing the removal in the future.

    B. The uninstall program will remove traces of the program that are outside the application file.

    C. The uninstall program will remember user preferences for use by the new software.

    D. The uninstall program will save data files that were created by the software.

3. Which of the following questions is most important to ask when evaluating the effectiveness of software used to support an instructional unit?

    A. Were the activities carried out by the students appropriate for the unit?

    B. Was the user documentation helpful to students?

    C. What support did the software provide for student assessment?

    D. Did the software help students reach the learning goals for the unit?

4. Which of the following activities is most likely to promote students' ability to synthesize information?

    A. participating in an online chat with a peer group

    B. using a spreadsheet to complete word problem calculations

    C. searching an online database to locate data for a research project

    D. conducting an online survey and interpreting the results

5. Word prediction software is most likely to be effective in a situation in which a teacher would like to:

    A. reinforce rules of grammar for a student who is resisting learning the rules.

    B. suggest alternative wording ideas to students engaged in a poetry project.

    C. encourage creative writing from a student who has poor keyboarding skills.

    D. help a student improve spelling skills related to a lesson in biology.

6. A student has asked a teacher to help plan a short video explaining why students are unhappy with the recent closing of a nearby youth center. Which of the following questions is most appropriate for the teacher to ask first?

    A. Will your video include interviews?

    B. How long will the presentation be?

    C. Who is your intended audience?

    D. What format do you intend to use?

7. A student is using a graphics program to create images for a poster advertising a school play. The student wants to place text over a portion of a photograph and is becoming frustrated because once the text is typed on the photograph, it cannot be repositioned. In this situation, the student would benefit from a lesson on which of the following concepts?

    A. layers

    B. pixel resolution

    C. anti-aliasing

    D. font types

8. As part of a unit on graphing, an Instructional Technology teacher working in a fourth-grade classroom wants to engage students in activities where they can practice using different types of graphs to represent data. In which of the following classroom activities would the data be best represented using a line graph?

    A. determining the amount of time students spend on each activity during the school day

    B. recording the temperature shown on the thermometer outside the classroom window every morning for one month

    C. counting the number of students in their class having one, two, three, or four siblings

    D. calculating the average number of absences in each classroom in the school over the course of one week

9. A science teacher asks an Instructional Technology teacher for assistance in setting up a database that will contain information about lesson plans, research projects, and science resources. Which of the following questions would be most important for the Instructional Technology teacher to ask first?

    A. How many data fields will be needed in this database?

    B. Who will be accessing this database?

    C. How often will this database be updated?

    D. What needs to be accomplished with this database?

10. A fourth-grade teacher has presented a lesson on Internet research, including methods for locating information using online search engines. Which of the following Internet activities will best help the teacher assess the students' ability to narrow the scope of an Internet search?

    A. asking students to bookmark the Web pages they found most helpful during a research assignment

    B. having students document the Web sites they visited while searching for specific information

    C. giving students an assignment in which they must locate a variety of specific facts

    D. asking students to perform searches using given search terms and compare the results

11.   Which of the following is the best
       method for evaluating a complex
       multimedia project created by a student?

       A.   assessment rubric

       B.   self assessment

       C.   multiple-choice test

       D.   peer assessment

12.   The International Society for
       Technology in Education (ISTE) posts
       the National Educational Technology
       Standards (NETS) along with national
       standards for science, mathematics, and
       language arts on their Web site. This
       practice reflects the organization's
       awareness that:

       A.   teachers and administrators with a
             variety of information needs use
             their Web site.

       B.   technology in the classroom should
             be used to enhance academic
             learning.

       C.   teachers of all subjects need to be
             aware of the standards in their
             fields.

       D.   technology is most accessible to
             students when presented in the
             context of a familiar subject.

ANSWER KEY: INSTRUCTIONAL TECHNOLOGY

Question Number	Correct Response	Objective
1.	B	Understand the role of technology and its social, ethical, legal, and human issues.
2.	B	Understand the basic operations and support of technology in an educational setting.
3.	D	Understand principles of planning and designing learning environments and experiences supported by technology.
4.	D	Understand the use of technology to facilitate the development of problem-solving capabilities, higher-order thinking skills, and creativity.
5.	C	Understand how to implement and manage effective learning environments supported by technology.
6.	C	Understand the use of technology for research, collaboration, and communication (information literacy).
7.	A	Understand the use of technology to enhance student productivity.
8.	B	Understand the use of technology to enhance student productivity.
9.	D	Understand the use of technology to enhance professional productivity.
10.	C	Understand applications of technology in assessment and evaluation.
11.	A	Understand applications of technology in assessment and evaluation.
12.	B	Understand strategies and resources for professional development in instructional technology.