Idaho Educational Technology Assessment Overview

==========

Table of Contents

Introduction

Educating America Inc. (EAI) offers an assessment developed and tested by Boise State University that has been taken by over 19,000 teachers nationally, and is recognized by the U.S. Department of Education as one of two teacher technology proficiency exams appropriate for national evaluation. The Idaho Educational Technology Assessment (IETA) is aligned with standards established by the International Society for Technology (ISTE) and National Educational Technology Standards (NETS). It is one of the only assessments that have large-scale capabilities, and objective correct-answer scoring. It uses objective, multiple-choice exams, which help measure technology knowledge and skill in nine major areas, including Word Processing, Spreadsheets, Multimedia, and the Internet. Upon completion, schools receive a compilation of test results, including comparative data with other schools in the country. Schools are then able to make well-informed decisions about the long-term and sustainable education and technology goals and objectives.

Questions and Answers

Why was the exam created?
The Idaho Legislature has contributed over 50 million dollars toward the infusion of computer technology into public school classrooms in Idaho. In addition, legislators have given teacher training institutions in Idaho over 4 million dollars. Because of this investment, legislators want to know if teachers are adequately trained to take advantage of this infusion of technology. Universities and school districts, which are responsible for providing training, need a way to measure progress. Without some assessment, they are "shooting in the dark" as they work toward the goal of training their teachers. To begin to answer Idaho legislators' questions and to provide some guidance for teacher technology re-training, Boise State University and Southwest Idaho school districts have planned, coordinated, developed, and tested the "Teacher Technology Competency Examination."

Who chose the topics and who wrote the questions?
BSU personnel, master teachers, technology coordinators and administrators wrote questions based on the original competencies. Since then they have been refined and expanded. The competencies have been reviewed in each region of the state by teams of educators led by Idaho Council for Technology in Learning (ICTL) representatives from each university. The competencies have also been articulated with ISTE (International Society of Technology in Education) standards as directed by the State Board of Education. New questions are added through test writing sessions, which involve administrators, teachers and technology coordinators throughout the State.

How can teachers pass the exam?
Listed below are the competencies teachers must have to pass the examination. Questions on this assessment are not software or platform specific. If teachers understand or know how to do each competency, they will pass the test.

How long is the exam?
The assessment usually takes teachers an hour to an hour and a half to complete.

How is the validity and reliability of the exam tested?
Every six months the assessment is reviewed and updated by technology representatives throughout Idaho. These representatives, who include technology coordinators, administrators and master teachers from various districts around the state, meet in January and July of each year to create new questions for the test. After new questions are created, they are edited and reviewed by the same group several times. After the group has agreed that the questions are appropriate and accurate, the questions are sent to English teachers to be edited for spelling, grammar, and format. With the editing done, questions are then sent to a different group of teachers who review the questions with relevance to ISTE standards or, in the words of statisticians, check for content validity. It is this review group that finally chooses the test questions. Only those questions that correspond with the ISTE standards remain on the final form. Once this process is finished the test is piloted.

During piloting, reliability statistics are computed. Reliability means that the test measures responses consistently. The Teacher Technology Competency Exam uses the Kuder-Richardson 20 alpha. Adequate alphas range between .70 and point 100.

What is the philosophy underlying this exam?
The software listed in the competencies are the standard tools used by business, industry, and science to record, store, transmit, and manipulate information to solve a problem or to produce a product. These tools are useful for teachers and students for the same reasons that they are useful in the workplace. Technology integration into the public school curriculum represents a "value added" dimension to the use of computers in classrooms. Although these tools are sometimes taught as classes by themselves, it is the unanimous opinion of the educators that produced this test that their most appropriate use is to speed or deepen student learning in the content areas. There is no value in teaching a student to use a word processor, the Internet, etc., unless the student learns to apply the tool to solve a problem or produce a product. These problems or products would most logically be associated with public school curriculum content areas. As students use databases to make conclusions about history or spreadsheets to solve complex math equations, they develop many of the same skills that they will be using after graduation in the workplace.

What does the exam measure?
The technology literacy of the teachers and their knowledge of how technology can be used in the classroom.

What does the school receive?
The Idaho Technology Competency Exam Office prepares a detailed report for participating school districts following the completion of testing within those districts. The report can be customized to the schools needs and includes:

- A detailed written explanation of the district results
- List of the Essential Computer Skill Competencies upon which the ITCE is based
- District and building reports showing the percentage of examinees scoring at or above passing in each competency category
- District reports profiling the district examinees as they scored within each competency category
- Copy of the letter sent to examinees who do not pass the exam
- Copy of the letter sent to examinees who do pass the exam

The Competencies

Introduction
The competencies listed in the following text consist of both **knowledge** and **skills**. The test will ask questions about both knowledge and skills. For example, a knowledge question might look like this.

Using a drill and practice program is most appropriate for:

a. Students learning new concepts
b. Students practicing concepts they have learned
c. Simulations of real world activities

A skill question would look like this.

To start a new word processing file:

a. Select <Open> <New> from the menu
b. Select <New> from the file menu
c. Select <Page Setup> from the tools menu

You will do well on skill questions if you have spent some time working with word processing, database, spreadsheet, telecommunications and presentation software applications.

Other kinds of questions have to do with how computers apply to the teaching/learning process.

If you wanted your students to use a computer tool that could substitute for pencil and paper outlining that would include not only text, but also graphics, audio, and video, you would use:

a. A database
b. Presentation software
c. Spreadsheet
d. Tutorial

Where can study resources be found for the Teacher Competency Exam?

A sample assessment can be accessed at this site as well as additional resources.
http://coehp.boisestate.edu/itce/default.htm

The Educational Technology Assessment Competencies

The Computing Environment

Monitor	Mouse
Fixed Disk Drive/Hard Disk Drive	Keyboard
Modem	LAN
WAN	File Server
	Work Station
CD-ROM	Floppy Disk Drive
Zip Drive	Printer
Serial Port/Model Port	Parallel Port/Printer Port
Printer Setup	Assistive Devices for Students with Special Needs
Help/Contents/Find	ISP
Adaptive Hardware	Root Directory
Tree Analogy of Directory Structure	Change Directory/Folder
Branch/Subdirectory	Remove directory/Folder
Create Directory/Folder	Erase/Delete Files
Find files in Nested Directories/Folder	Minimize and Maximize a Window/Screen
Open and Close a Window/Screen	Multitask/Open Multiple Applications Simultaneously
Calculate if a File or Set of Files Will Fit on a Disk	Knowledge that System Should be Protected from Viruses
Knowledge of Viruses/Trojan Danger	Menu
Disk/Diskette Copy/Backup	Dialogue Box
Icon	Formatting Diskettes of Varying Densities

Floppy Disk/Drive Care and Maintenance	ASCII or Text file
Access Computer files on a Network	Open/Close a File
Common Graphic File Extensions	Save As Vs. Save
Inserting/Ejecting Diskettes	File Type
Resizing an application or Group Window/Screen	Changing File Type with Save As
Copyright	Software Installation Concerns
Basic Hardware Troubleshooting	Computer Ethics

Word Processing

Cut	Copy
Paste	Search/Find
Search and replace	Select or Highlight
Delete Text	Undo
Open and Close Documents	Indent
Hanging Indent	Bullets
Number Pages	Insert or Import Clip Art
Create a Header or Footer	Clipboard
Merge Database Records into Documents	Bold, Italics, and Underline
Fonts	Spacing
Columns and Numbering	Justification
Spell Check	Thesaurus
Print Preview	Centering
Page Setup	Inserting Table/Spreadsheet Cells/Charts

Using a Word Processor to Support Instruction in a Content Area	

Instructional Software

Tutorial	Drill and Practice
Simulation	Reference
Recognizing Good/Bad Instructional Software	Choosing an Appropriate Application to Meet the Instructional Objective
Deciding When to Use Instructional Software in the Teaching/Learning Process	Evaluating the Effectiveness of Instructional Software with an Individual Student

Telecommunications

The User Id in an Email Address	The Domain in an Email address
The Domain in a Web Address	The File Location Path in a Web Address
Email Etiquette	Web Safety/Security
Acceptable Use Policies	SPAM
Newsgroups	List Subscription Procedures
Email Discussion Group Etiquette	Purpose of File Compression
Internet	Browser
Search Engines/Procedures	Use Telecommunications for Research/Enhance Classroom Resources
Use Telecommunications to Communicate Outside of the Classroom	Appropriate use of the Telecommunications Models
Use Telecommunications to Provide Students with Opportunities for Interaction/Collaboration	Selecting Appropriate Web Sites

Outside of the Classroom	
Appropriate student Use of Telecommunication Tools (Lists, Chat Groups, Search Engines, etc.)	

Presentation Software

Objects	Properties/Attributes
Hypertext	Branching/Linking
Field	Button/Icon
Widget/Wizard	Template
Foreground	Background
Scaling Graphic Objects	Palettes (Color, Line, Polygon, etc.)
Shrink/Zoom Out	Grow/Expand/Zoom In
Digitize Sound/Video	Scan Documents/Images
Digital Camera	Capture Graphics from Video
Insert a Video Clip into a Presentation	Storyboard/Story Outline
Fill	Magnify/Zoom In
Advantages/Disadvantages of Different Graphic Formats	Create a Graphic Image
Import/Insert an Object (Image, Sound, etc.)	Create a Storyboard of An Electronic Presentation of Content Material Relative to the Needs of the Student
Create an Electronic Presentation of Content Material Relative to the Needs of the Student	Create a Student Activity in which Students Storyboard and then Construct an Electronic Presentation
Knowledge of appropriate Screen Design Techniques	

Spreadsheets

Cell	Cell Address/Location
Column Width	Formula
Function	Title
Range	Fill Right
Fill Down, Cut, Copy, and Paste	Create A Chart/Graph
X Axis and Y Axis	Label
Legend	Scale (Measurement Reference)
Sort	Insert Row/Column
Page Setup	Purpose of a Spreadsheet
Use an Electronic Grade Book	Construct Logical Questions Based on Spreadsheet Information
Construct a Correct Series of Inferential Questions for a Spreadsheet	Have Students Chart Classroom Context Activities
Can Translate Mathematical Problems to Spreadsheet Formulas	Can Illustrate Science Principles with Spreadsheet Examples

Databases

Field	Record
Query	Sort
List View	Form View and Setup
Range	Entry
Format (Date, Time, Text, Number, etc.)	Search Criteria
Conjunctions (Boolean Terms)	Ascending/Descending Sorts
"<" and ">"	Merge
Find	Purpose of a Database
Ask Logical Questions of a Database Based on Domain	Create a Student Activity Using Questioning Techniques to

Related Content	Teach Information and Concepts With a Database

Issues in Classroom Management

Select the Appropriate Application for a Student Activity	Select the Appropriate Application for an Instructional Presentation
Select the Appropriate Application to Obtain a Desired Product	Select the Appropriate Application to Enrich a Particular Topic
Select the Appropriate Application to Motivate Learners	Select the Appropriate Application to Meet Learning Styles/Individual Needs
Use Teaching Strategies that Maximize Student Access to Computers	Develop an Electronic Product That Encourages Higher Level Thinking Skills
Setting up Classroom Work Flow to Take Advantage of Technology	Understand the Need for an Alternative Lesson Plan for Use When Access to an Application is Blocked
Evaluating Student Products Produced with Technology	Use Computers in Decision Making
Knowledge of Computer Use in Business, Industry, and Society	Awareness of Technophobic Issues
Knowledge of Computer Use to Enhance Personal/Professional Productivity	Knowledge of Sources of Assistive and Adaptive Devices/Software
Knowledge of Current Instructional Models, Theories, and Philosophies	Awareness Courseware for Special Needs Students

Issues in Information Technology

Grouping Strategies	Diverse Student Populations
Gender/Equity Issues	Legal Issues Surrounding Student Use of Technology
Security Issues	Equitable Computer Access
Modeling Life Long Learning	Understand and Demonstrate Ethical Use of Information Technology in the Classroom
Develop Strategies and Alternatives to Address Technology Ethics Throughout the K-12 Curriculum	Understand Importance of Technology Ethics and How it Changes the Way we Think About Ethical Behavior
Understand the Federal Copyright, Software License, Privacy, Confidentiality, and Intellectual Property Issues and Their Application to Education	Understand the Freedom of Speech Issues and Its Application to Education
Understand the Social Ramification of How Technology Changes Communities and Education	Understand and Demonstrate Codes of Professional Conduct and Responsibility in Classroom Management in Relation to Technology

Sample IETA Questions

1. The greatest amount of data may be stored _____.

   a) on a hard drive

   b) in RAM

   c) on a floppy disk

   d) in ROM

   Correct Answer: a)

2. Students need to calculate the population statistics in their community for a report on the local economy and employment. The best tool for this activity would be _____.

   a) a local area network

   b) desktop publishing software

   c) a spreadsheet

   d) a database

   Correct Answer: c)

3. One of the first steps in organizing an electronic presentation is to _____.

   a) use a spreadsheet to structure the concepts

   b) use a "storyboard" to outline concepts

   c) use a database to summarize topic facts

   d) start experimenting with a screen design on the computer

   Correct Answer: b)

4. When an item is cut from a document it is _____.

   a) deleted permanently from the document

b) saved to the clipboard

c) moved to the end of the document

d) put in the recycle bin or trash can

Correct Answer: b)

5. All the students' names in a class have been entered into a spreadsheet application alphabetically listing their gender and grade level. To re-arrange the students by grade level use a _____ command.

a) range

b) function

c) query

d) sort

Correct Answer: d)

6. An appropriate use of a database for students would do the following EXCEPT _____.

a) determine what type of transportation to buy

b) locate where birds nest for the winter

c) determine how steam engines work

d) determine what fruits are grown in Florida

Correct Answer: c)

7. A search engine allows _____.

a) a search of the Internet by topic

b) the computer to be re-started

c) a search to be slowed down so that topics are viewed more easily

d) all of the above

Correct Answer: a)

8. Skills needed to effectively sort and query a database include _____.

a) accessing search engines and identifying key words

b) writing a formula and explaining a hypothesis

c) creating and presenting an outline

d) asking related questions, finding answers, and making inferences

Correct Answer: d)

9. In an electronic presentation which file type could be a video clip?

a) .jpg

b) .vcr

c) .tif

d) .mpg

Correct Answer: d)

10. To include the same piece of information on each page of a document, _____.

a) create a header and/or footer

b) format a lead and/or closing paragraph

c) use commercially preprinted paper

d) merge your data with a database

Correct Answer: a)