

Immediate Feedback Assessment Technique in GIS Class

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IF-AT

- a new type of multiple-choice procedure
 - provides immediate informational feedback to students for each question
 - permits the allocation of partial credit when used in classroom assessment exercises
- based on solid psychological principles
 - Immediate feedback is beneficial for learning

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Participating Institutions

- More than 400 instructors with positive results in classroom assessment, test preparation and professional training
- Tested effectively at levels of college
 - About 50 colleges and universities
 - ✓ University of Wisconsin
 - ✓ University of Florida
 - ✓ Rutgers University
 - ✓ Iowa State University
 - ✓ Arizona State University
 - ✓ ...

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Scratch Quiz

IMMEDIATE FEEDBACK ASSESSMENT TECHNIQUE (IF-AT)

Name: _____ Test # _____
Subject: _____ Total: _____

SCRATCH OFF COVERING TO EXPOSE ANSWER

	A	B	C	D	Score
1.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
2.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
3.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
4.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

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4.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

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2.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
3.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
4.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

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Learning Process

- The student receives the test
 - All answers are covered
- The answer to question 1 is "D."
 - The star underneath "D" informs the student that he/she is correct and immediately reinforces his/her learning
 - Most importantly, the student exits this question with knowledge of the correct answer
- The correct answer to Question 2 is "B."
 - The student narrows it down to "A" or "B" and scratches "A."
 - The blank rectangle immediately indicates that "A" is incorrect.
 - Knowing now that "A" was incorrect and reinforcing "B" as the correct answer in his/her mind, the student chooses "B"
 - Again, the student exits this question with knowledge even though it took more than one attempt to answer correctly. (In addition, partial credit can be awarded for answering correctly on the second attempt.)

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Scratch Quiz

Geography 373-01: QUIZ 6 Basic Spatial Analysis

Name: _____
Date: Wednesday, March 23, 2005

Make a group of 3. Everyone in a group will get the same grade.
Write the score in the right column (First guess: 10, Second guess: 5, Third guess: 0, Fourth guess: -1, Fifth guess: -2, No scratch at all: 2)

Q1. According to the book, how many ways of calculating the distance between two points in a vector format?

- A. 5
- B. 4
- C. 3
- D. 2
- E. 1

Q2. Which one gives the shortest distance between two points in a vector format?

- A. Manhattan distance
- B. Euclidian distance
- C. Network distance
- D. Great circle distance
- E. Stream distance

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of Choices Matters?

- Case I: 4 choices
 - First guess: 10
 - Second guess: 5
 - Third guess: 0
 - Fourth guess: -1
 - No scratch at all: 2
- Case II: 5 choices
 - First guess: 10
 - Second guess: 5
 - Third guess: 0
 - Fourth guess: -1
 - Fifth guess: -2
 - No scratch at all: 2

Different Levels of Class Matter?

- Introduction to GIS
 - Average: 80 %
- Advanced GIS
 - Average: 82 %

Traditional Quiz vs. IF-AT

- QUIZ 6, 7 in Introduction Class
 - Improved 15%
- QUIZ 2 in Advanced Class
 - Improved 10%

Pros & Cons

- Pros
 - Great for quiz
 - Open discussion
 - Continuous thinking process
 - Immediate learning process
 - No grading
- Cons
 - Cannot be used in exam test
 - ✓ Recycle
 - ✓ Lack of variety

Findings

- Students prefer scratch choices to traditional multiple choices
 - According to students
 - ✓ Quick learn
 - ✓ Learn with fun
 - ✓ Like partial credit
 - ✓ Students blame themselves rather than materials or instructors
 - ✓ The student thinks about the question again
 - ✓ Their misunderstandings are immediately replaced with knowledge
 - ✓ The chance of repeating mistakes in the future is decreased