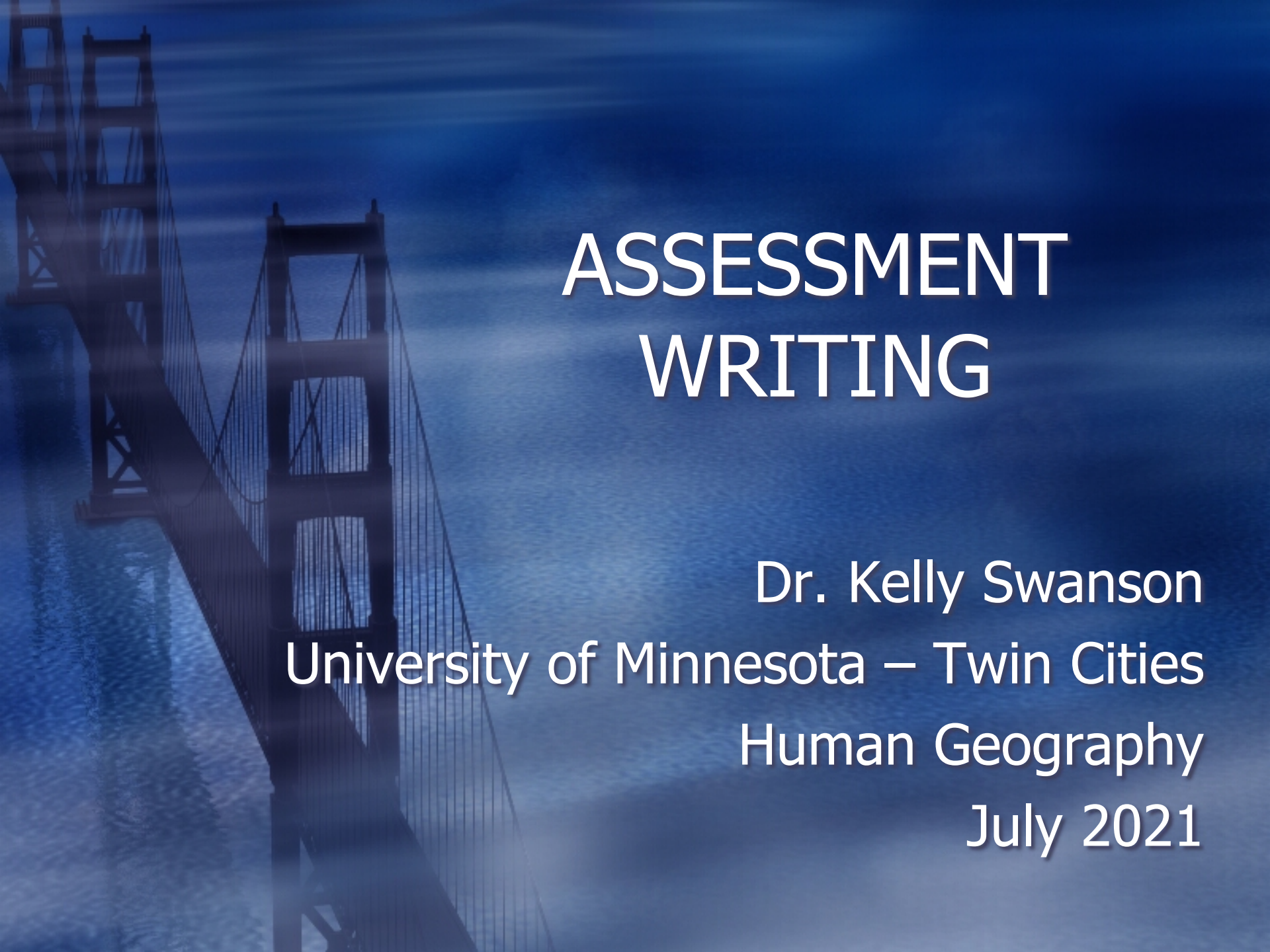

ASSESSMENT WRITING

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Need for Assessment

- How do we measure learning?
- What is an A, B, or F?
- Standardization gives teachers some data to work with.
- Good assessments measure student learning.
- NGS goal - 80% of students are geographically literate by the time they graduate.

Geography Assessment Measurement

- Cannot think of score as a grade. 90% is not an A-
- Student is scored not graded. Keeps subjectivity out of the equation. Ensures reliability.
- Ideally, the test should be normed.
- Normed tests compare students to their peers.

Assessment Measurement

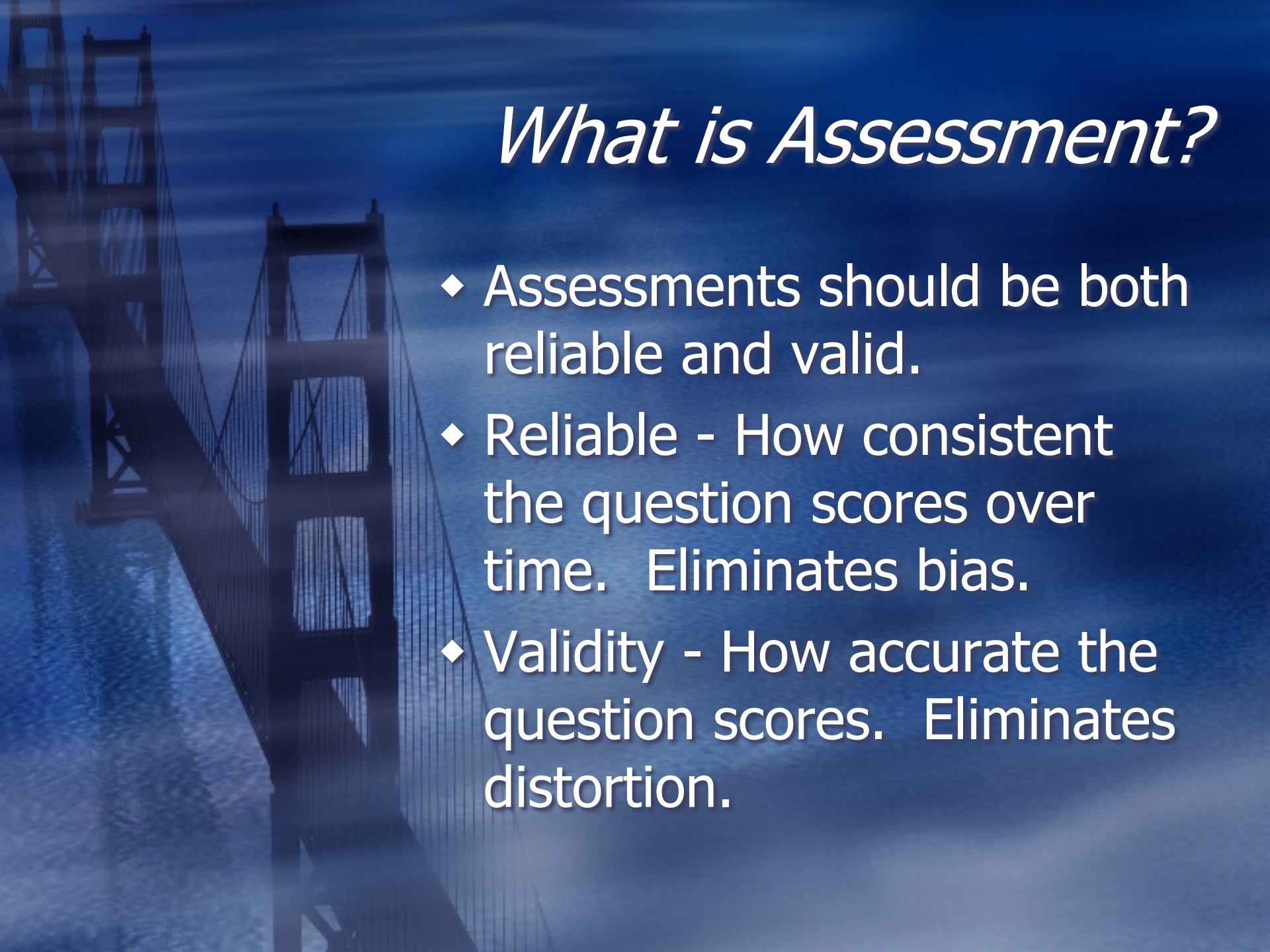
- Four Outcomes of Any Question

  A. Student knows the questions and correctly answers it.

  B. Student knows the question but incorrectly answers it.

  C. Student does not know the question and correctly answers it.

  D. Student does not know the question and incorrectly answers it.



What is Assessment?

- Assessments should be both reliable and valid.
- Reliable - How consistent the question scores over time. Eliminates bias.
- Validity - How accurate the question scores. Eliminates distortion.

Scale Comparison

- Reliability versus Validity
- Scale weighs you in the morning five minutes apart at 130 each time. It is reliable.
- Problem: You actually weigh 145 pounds even though the scale says you weigh 130 pounds. It is not valid.
- University of South Florida.

Reliability versus Validity

- Question or exam can be reliable but not valid.
- Question or exam can be valid but not reliable.
- Question and exam should aim to be both reliable and valid.

Assessment Measurement

- Item Difficulty
- Sometimes referred to as the P value.
- Measures between 0-100%
- Questions should not be too easy or too difficult.

Geography Assessment Measurement

- Students must score 60% on each benchmark to be proficient.
- Students at 50% are approaching proficiency.
- Students scoring at 85% are exceeding proficiency.
- Students must score 3/5 on each benchmark to appear proficient.

Geography Assessment Measurement

- Each exam has a minimum of 5 questions per benchmark to measure knowledge and proficiency in each benchmark.
- Benchmarks are set to the Minnesota Standards.
- New standards in 2012 meant new questions and new measurements.

Assessment Measurement

- Item Discrimination
- How well the question discriminated against those who scored well and those who scored low based on their level of knowledge or ability.
- Measured from 0.00-1.00
- The higher the number the better the correlation between that question and the overall exam.

Assessment Measurement

- Item Difficulty (Easy, Medium, Difficult)
- Easy - Majority of the student should get it correct.
- Medium - Average number of students should get it correct.
- Difficulty - Top students should get it correct.

Assessment Measurement

- Cognitive Dimension (Know, Understand, Apply)
- Know - Recalled information from student.
- Understand - To grasp what is meant. To think about and use concepts.
- Apply - Doing geographic problem solving.

Equator Questions

- Questions that will be used on two different tests that measure the knowledge of the student.
- On the Geography Exam there are 3-6 equator questions on both Exam A and B.
- Question that had a high discrimination value.

Good Assessment Items Should .....

1. Contain three parts
   A. Stem
   B. Correct Answer
   C. Incorrect but plausible answers

Good Assessment Items Should…

2. Be clear
3. Focus on a single concept or idea
4. Should ask a question. End in a question?
5. Have one clear answer.
6. Contain choices that are equal in length.

Good Assessment Items Should ……

- 7. Contain plausible distracters
- 8. Vary between knowledge and higher-order based questions
- 9. Questions should be positive. Try to avoid the “NOT” questions
- 10. Avoid “all of the above” or “none of the above” choices.

Good Assessment Items Should……

11. Contain 4 or 5 possible choices
12. Not contain humor in choices.
13. Not contain clues to the correct answer.
14. Vary the correct answer - not always C as the correct answer.
15. List choices numerically or logical order.

Good Assessment Items Should……

- 16. Format choices vertically not horizontally.
- 17. Can be used with comprehension item set, pictorial item, or problem-solving set.
- 18. Test what you want the student to know.
- 19. Measure what the students know.

Good Assessment Items Should……

- 20. Minimize reading in the stem or answers.
- 21. Use correct grammar, punctuation; Capitalization, and spellling
- 22. Avoid window dressing or additional verbiage
- 23. Avoid trick items but use common distracters.

Good Assessment Items Should……

- 24. Avoid trivial content
- 25. Avoid opinion-based questions.

Adapted from:

1. The Learning and Leadership Center by Douglas Reeves. 2008
2. Haladyna, Downing, & Rodriguez. 2002

Poor Question

What geographic theme focuses on the connections between places on the earth's surface?

- A. Location
- B. Place
- C. Movement
- D. Human-Environment Interaction
- E. Region

Explanation

- Two possible answers are correct. Connections could mean transportation as well as criteria for determining regions.
- Correct Answer - C
- Item Difficulty - 25%
- Discrimination Value - 0.28

Poor Question

A decline in a country's crude birth rate would result in an increase in which of the following?

A. Total Fertility Rate
B. Life Expectancy Rate
C. Crude Death Rate
D. Doubling time
E. Natural Increase Rate

Explanation

- There is no correct answer! The students could not chose between the correct options because there were none.
- Correct Answer - None
- Item Difficulty - 14%
- Discrimination Value - 0.10

Poor Question

Which of the following countries has the HIGHEST natural increase rate?

A. China
B. Australia
C. Canada
D. Uganda
E. Norway

Explanation

- Measures whether the student can identify where Uganda is rather than whether the natural increase rate is high in Sub-Saharan Africa.
- Correct Answer - D
- Item Difficulty - 22%
- Discrimination Value - 0.23

Poor Question

In which region does MOST of the population live in cities?

A. East Asia
B. South Asia
C. Southeast Asia
D. Europe
E. Sub-Saharan Africa

Explanation

- Question doesn't specify between percentage or aggregate numbers of people. Each changes the answer.
- Correct Answer - D
- Item Difficulty - 30%
- Discrimination Value - 0.21

Poor Question

Pastoral nomadism is a common agricultural practice in which of the following regions?

A. Dry regions of Africa and Asia
B. Tropical regions of Africa and Asia
C. The hinterlands of Australia
D. Native American reservations
E. Mountain regions where people move in pursuit of rain.

Explanation

- Multiple answers. Could argue four of the answers are correct.
- Correct Answer - A
- Item Difficulty - 37%
- Discrimination value - 0.30

Poor Question

Which of the following is NOT a reason why residential areas are typically separated from industrial areas?

A. Residents do not like the traffic associated with industrial areas.
B. Residents have easy access to employment opportunities.
C. Residents do not like the pollution associated with industrial areas.
D. Residents do not like the noise associated with industrial areas.
E. Residents consider industrial areas

Explanation

Too many NOT's in the stem and distracters. Do two negatives equal a positive in the question? It's confusing to read.

Correct Answer: B

Percent Correct - 50%

Discrimination Value - 0.36

Good Question

- The location of the earliest cities was dependent on which of the following?
- A. Flat land suitable for railroads
- B. Arable land and defensible sites
- C. Mild climates and proximity to oil fields.
- D. Paved Roads
- E. Nearby factories

Good Questions

Item Difficulty - 56% (Answer B)

- Discrimination Value - 0.64
- Question shows those who got the question correct did well on the overall urban exam.
- Breakdown:
- A - 19%
- C. 13%
- D. 5%
- E. 7%

Good Questions

- Which country controlled most of the land in Latin America from 1500-1750?
- A. France
- B. Germany
- C. Brazil
- D. England
- E. Spain

Good Question

- Item Difficulty - 57% (Answer E)
- Discrimination Value - 0.68
- Breakdown:
- A. 10%
- B. 9%
- C. 4%
- D. 20%

Good Question

- What is the defining characteristic of multinational corporations?
- A. They generate a higher income than half of the world's countries.
- B. They operate in more than one country.
- C. They take advantage of natural resources in their home country.
- D. They do not benefit from globalization
- E. They are decreasing in number.

Good Question

- Item Difficulty - 62% (Answer B)
- Discrimination Value - 0.72
- Breakdown:
- A. 16%
- C. 11%
- D. 6%
- E. 4%

Trends in Scoring

- Little gender differences in most exams.
- Cultural differences between whites and minorities.
- Students did poorly on Economic geography exam.
- Students scored the highest on Political exam.

Future of Geography Assessment

- Data Driven assessments can and should change instruction.
- Curriculum development is meeting the shortfalls in standards where the students did poorly.
- More data is needed.
- More questions are needed.
- What is geographic literacy.

Future of Geography Assessment

- Unit 1 Assessment - Introduction to Geography
- Range 8-13%
- Average Score (Minority to White)
  45.5%-56%

Out of 427 students

ESL Percentage - 15%

Future of Geography Assessment

- Population Assessment
- Range 11-22%
- Average Score (Minority to White)
- 35%-53%
- Out of 431 students
- ESL Percentage - 13%

Future of Geography Assessment

- Economic Assessment
- Range 18% - +8%
- Average Score (Minority to White)
- 37.75%-41%
- Out of 412 students
- ESL Percentage - 1%

Future of Geography Assessment

- Agriculture Assessment
- Range 9% to -8%
- Average Score (Minority to White)
- 54.67%-55%
- Out of 199 students
- ESL Percentage - 8%

Future of Geography Assessment

- Cultural Assessment
- Range 9%-22%
- Average Score (Minority to White)
- 45.5%-58%
- Out of 307 students
- ESL Percentage - 6%

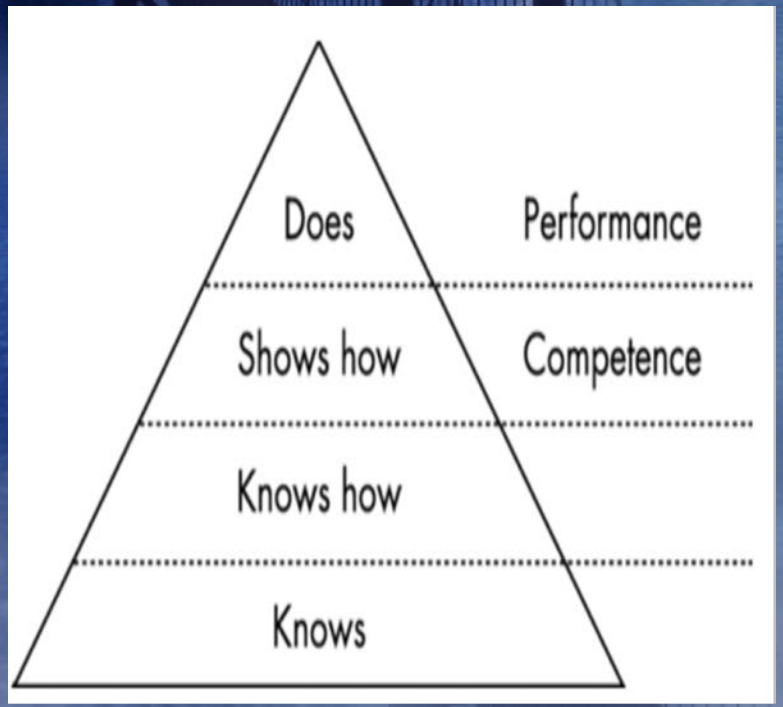
Future of Geography Assessment

- Political Assessment
- Range 5% - 21%
- Average Score (Minority to White)
- 41.25% - 53%
- Out of 315 students
- ESL Percentage - 3%

Future of Geography Assessment

- Urban Assessment
- Range 28% - (+3%)
- Average Score (Minority to White)
- 52%-62%
- Out of 203 students
- ESL Percentage - 12%

Future of Geography Assessment



- Movement from Positivistic to Socio-cognitive assessments in geography. NAEP (2018)
- Doing geography rather than memorizing geography.
- Moving up Miller's Triangle.

Future of Geography Assessment

- Questions, comments, concerns, complaints, compliments?