Developing Content for Credentialing Exams – An Item Writing Mindset

Jeff Kelley, Ph.D., Psychometrician

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Overview

- Item Difficulty and the Target Audience
- Matter of Opinion/Facility Specific Items
- Item Plausibility
- Non-Standard Item Generation Strategies
- Other Topics in Item Writing (time permitting)

What is the point of a credentialing test?

- To separate the people who are ready for the credential (pass)...

- from the people who aren't (fail).

What is the point of *an item* on a credentialing test?

- Same thing.
- The candidates who are ready for the credential should get the item right.

- The candidates who are not ready for the credential should get the item wrong.

Item Difficulty

- Classroom Test Decisions:
  - A, B, C, D, F
- Credentialing Test Decisions:
  - Pass or Fail
- Classroom mindset: Write some hard items that “challenge the A students”
- Credentialing mindset: Write items *hard enough* to distinguish minimally qualified candidates from those who are not ready for the credential

Item Difficulty - Too Hard

Item Wrong

Item Right

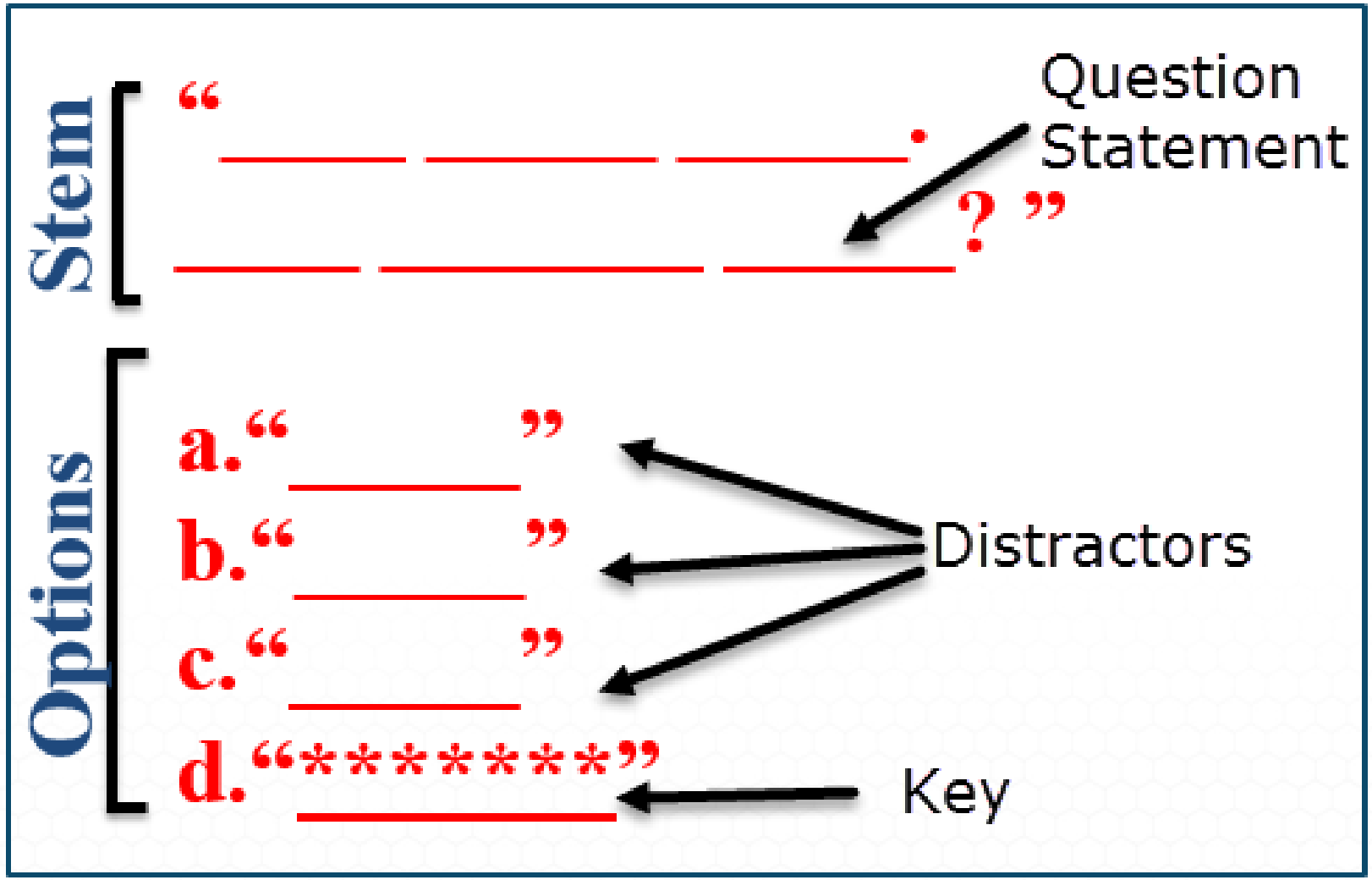
- Items that are too hard give us a misleading decision concerning many candidates who are ready for the credential.

Item Difficulty

- Classroom mindset: Write some easy items that “test something they should all know” or “keep them from getting discouraged”

- Credentialing mindset: Write items that are difficult for candidates who are unprepared for the credential, but *easy enough* for the minimally qualified

Terms



Item Difficulty – Too Easy Example

During a surgical procedure, a scalpel falls on the floor. What should the operating room staff do next?

*A. open a new scalpel package

B. pick up the scalpel within 5 seconds

C. wipe the scalpel on a sterile pad

D. rinse the scalpel with sterile saline

Item Difficulty - Too Easy

Item Wrong

Item Right

- Items that are too easy give us a misleading decision concerning candidates who are not ready.

Item Difficulty - Strategies

- Candidate eligibility requirements
  - Excellent first source to help item writers visualize the target audience
- Minimally Qualified Candidate (MQC) definition
  - Helps item writers move their thinking away from “A students” and those who are clearly unqualified and onto the real target – the MQC
- Review and discuss both with item writers
  - Post in the room or hand out

Item Difficulty - Strategies

- Sample hard/easy items with statistics
  - e.g., 10% correct, 90% correct
  - Concrete examples of what too hard and too easy look like for candidates

- Require a second item writer's opinion
  - Does your colleague agree the item is at an appropriate difficulty level?
  - Did your colleague know the answer to your item?

Item Difficulty – Item Writer Challenge Questions

- Honestly, would you have known the answer to the item you just wrote yesterday?
  - Seriously, would you have really known that?
- Do you think a minimally qualified _____ candidate will answer your item correctly?
- Do you think a _____ student in the first week of a training program will answer your item correctly?
- What percentage of all candidates taking this test do you believe will get your item right?

Matter of Opinion/ Facility Specific Right Answers

- The right answer should be established industry practice, not a matter of matter of opinion or something that varies across work settings.

- There should be no *legitimate* argument for any of the wrong answers.

Matter of Opinion/ Facility Specific Right Answers

What equipment should a phlebotomist use on an adult patient for a venipuncture with no complications?

A. *winged infusion set*

B. syringe

*C. evacuated tube

D. capillary needle

Matter of Opinion/ Facility Specific Right Answer

- Items with arguably more than one right answer produce all kinds of misleading decisions about candidates.

Avoidance Strategies

- Sample items with statistics
  - e.g., low item-total correlation
  - Concrete examples of what items look like when high ability candidates are selecting wrong answers
- Require a second item writer's opinion
  - Does your colleague agree there is only one right answer?
- Require a reference supporting the right answer

Item Writer Challenge Questions

- Is the correct answer a matter of opinion? Does it differ by facility, region, or geographic location?
- Will the wrong answers draw high ability candidates?

Item Plausibility

- We’re not trying to test general logic skills, common sense, or how good they are at taking tests.
- A credentialing exam should test knowledge and skills specific to the profession.

Item Plausibility

A health care professional caused harm to a patient through negligence. What actionable offense has the professional committed?

A. due process

B. privacy protection

C. malpractice

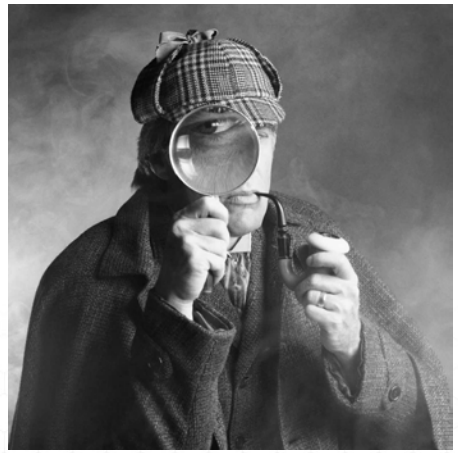
D. stare decisis

When asking for a bad thing, the wrong answers need to sound bad. They still need to be plausible, and they shouldn't be made up terms.

Item Plausibility

A provider is instructing a 25-year-old female patient who was prescribed isotretinoin for severe acne. What test will be required before the patient can begin taking the medication?

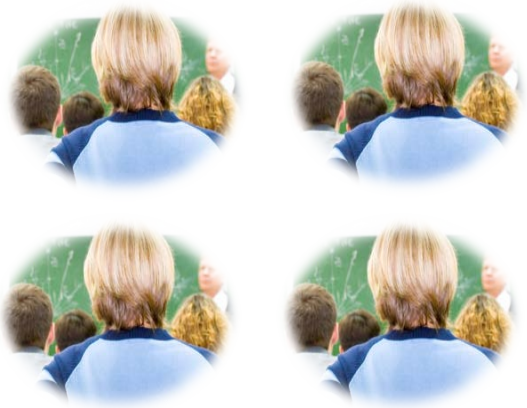
A ammonia blood level
B pregnancy
C LDL cholesterol
D tissue type



Don’t leave logical clues as to the answer.

Item Plausibility

Item Wrong



Item Right

- Items with technical or logical clues allow candidates a chance based on something other than professional knowledge.

Strategies

- Sample items with statistics
  - e.g., distractors with no one picking them
  - Concrete examples of what items look like when low ability candidates are getting them right

- Stump the Chump!
  - If the Alpine facilitator can respond correctly (without having any relevant content knowledge of the subject matter), then the item probably isn't testing professional knowledge or skills

Item Writer Challenge Questions

- Is there any way a person from outside your profession could reason their way to the correct answer or eliminate any wrong answers?

- Will all of your wrong answers be plausible enough to attract at least 3% of the candidates?

Alternate Item Development Methods – Virtual Workshop

- Advantages
  - No travel $$$
  - No travel time for item writers

- Disadvantages
  - Item submissions as homework
  - Peer interaction difficulty
  - Security issues

Alternate Item Development Methods – Crowd Sourcing

- Advantages
  - No travel $$$
  - No travel time for item writers
  - Broader pool of item writers
- Disadvantages
  - Item submissions as homework
  - Security issues
  - Peer interaction difficulty
  - Pay/No Pay decisions
  - Training verification
  - Item submission logistics
  - Item screening/review

Cognitive Complexity Framework

- Remember
- Understand/Apply
- Analyze/Evaluate
- Create

Cognitive Complexity vs. Difficulty

- Difference in Difficulty
  - Memorize pi to the second decimal place.
    - answer = 3.14
  - Memorize pi to the tenth decimal place.
    - answer = 3.1415926535

- Difference in Cognitive Complexity
  - Use pi to find the area of a circle with a radius of 1.2 inches.

Remember

Common characteristics of Remember items:

- Definitions – “What is a security protocol designed to prevent unauthorized duplication called?”
- Doesn’t pose a problem to be solved or a scenario to react to – just asks for a fact.
- Typically asking for objects, names, terms, etc. rather than actions or judgments

Understand and apply

Common characteristics of U/A items:

- Choosing a course of action in response to a basic scenario
- Inference – The problem is not directly stated – Candidate must first decide what is really happening in the stem.
- Interpretation – Candidate must decipher professional terminology, charts, diagrams, abbreviations, codes in order to answer
- Calculation – Having to do math almost always requires U/A level thinking

Understand and apply

The ability to comprehend and utilize standard concepts or processes. Example:

A 440 error code is displaying with an NAT alert during a routine system query. What should the programmer do?

A. reboot the system

B. check for a feedback loop

C. run a truncated diagnostic procedure

D. conduct a full system scan

Analyze and evaluate

Getting to the analyze/evaluate level is tough. Common characteristics of A/E items:

- Combining multiple pieces of information to arrive at a solution (e.g., troubleshooting)
- Complicating factors - variables in the scenario that change the answer

Analyze and Evaluate

The ability to integrate new information with known information in order to arrive at a reasoned conclusion or judgment. Example:

A provider performed an underhand sponogeogram using a Razenfratz procedure. The billed codes were 87569 and 25415. An EOB was returned denying the charge of 25415. Why was this charge denied?

A. 25415 should have been billed with a modifier -42.
B. Razenfratz is an inclusive component of 39657.
C. The Bonferroni adjustment is prescribed for this procedure.
D. 25419 is the proper code when an underhand technique is used.

Window dressing doesn’t make an item higher order thinking

A high-profile patient has been admitted to the hospital for treatment. In order to protect the identity of the patient, an alias name has been assigned to the account. As Privacy Officer, you are required to perform an access audit to review who has been viewing the patient information. What information is generated through this process?

A. accounting of disclosures
B. need to know access
C. unauthorized use
D. potential breaches of PHI

What is the point of *an item* on a credentialing test?

- All we have to make our pass/fail decision is a test score.
- Let's make sure every item that test score is derived from gives us the best decision possible!

QUESTIONS?

Jeff.Kelley@alpinetesting.com