Learning How to Write CPAN/CAPA Examination Questions

Thursday, April 7, 2022
12:30 PM – 5:00 PM
Franklin Hall, Level 4, 411-412

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Participant Requirements

- *You may not participate in this item writing workshop if you are planning to take the CPAN or CAPA exam within the next 12 months.*
- *The first part of this session will be teaching concepts that are applicable to both the certification exams and creating the practice exams. We will break after the first part to allow the practice exam participants to exit the session.*
- *Those staying for the full session cannot be a current ABPANC Certification Coach, involved in teaching CPAN or CAPA examination review courses, or be involved with the practice exam.*
- *All workshop participants must sign a nondisclosure/confidentiality agreement and may not record/photograph any materials or content associated with the workshop.*

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Presenters

Graze Bautista, MSN RN CPAN CAPA
ABPANC Board Director and Exam Liaison

Maureen Diver, MSN RN CAPA
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Charlotte Maiden, MSN RN CPAN CAPA
CAPA Exam Co-Chair

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Senior Psychometrician at PSI

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Objectives

1. Identify key steps on CPAN and CAPA examination development process.
2. Describe the basic principles and components of item writing
3. Develop at least two items for validation/addition to the ABPANC item bank

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ABPANC Mission

Elevating perianesthesia nursing excellence, knowledge, and patient advocacy through certification.

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ABPANC Vision

Recognizing and respecting the unequaled excellence in the mark of the CPAN and CAPA credential, perianesthesia nurses will seek it, managers will require it, employers will support it and the public will demand it.

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Exam Development

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A Quality Exam Starts with…

A Role Delineation Study (RDS)

- ✧ Defines the current practice for perianesthesia nurses.
- ✧ Is used to establish the Exam Blueprint / Content Outline.
- ✧ Identifies the testable content for the CAPA and CPAN exams.

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The Examination Blueprint

- ✧ Guides item development, categorized into five domains:
  - Domain 1 - Anesthesia
  - Domain 2 - Physiology
  - Domain 3 - Perianesthesia Monitoring & Intervention
  - Domain 4 - Perianesthesia Care Considerations
  - Domain 5 – Professional Nursing Practice & Guidelines
- ✧ All exam items must align to the Blueprint.
- ✧ If a topic isn't on the Blueprint, we can't test on it.

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ABPANC Examination Blueprint

Beginning 2023

Domain	CPAN	CAPA
Anesthesia	24%	20%
Physiology	18%	16%
Perianesthesia Monitoring & Intervention	35%	30%
Perianesthesia Care Considerations	14%	25%
Professional Nursing Practice & Guidelines	9%	9%

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The Items…

- ✧ Test knowledge of meaningful perianesthesia nursing practice.
- ✧ Are classified according to the Exam Blueprint.
- ✧ Are reviewed and pretested to ensure validity and statistical significance before they are placed on an exam.

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Item Writers…

Item Writers are:

- Subject Matter Experts!
- Certified CPANs or CAPAs or both!
- The authors of both the CPAN and CAPA exams.

Item Writers can participate in the exam process by:

- Submitting items remotely into the online Item Writing System.
- Becoming members of the exam development committees.

Item Writers gain:

- 2 CEUs per item submission (up to 60 CEUs per recertification period).
- Expertise and camaraderie among peers.

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Anatomy of an Item

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Anatomy of an Item

All **Items** have a **PREMISE (STEM)** and **FOUR MULTIPLE-CHOICE options:**

- One choice is the **KEY** (correct response).
- Three choices are the **DISTRACTORS** (incorrect responses).

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Item Stem

- ✧ The stem should be a clear, concise, and complete statement of the question or problem.
- ✧ Ambiguous terms and excessive verbiage should be avoided.
- ✧ A well-informed candidate should have a good idea of what the answer is after just reading the stem; without looking at the choices provided.
- ✧ The stem can be structured as:
  - Direct questions,
  - Incomplete statements, or
  - Issue/scenario descriptions.

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Format of the Stem

Direct Question

What action should the perianesthesia nurse take if a patient stops breathing upon admission to the PACU?

1. Call for help and begin airway resuscitation efforts.*
2. Notify the attending.
3. Insert a nasal airway and apply the pulse oximeter.
4. Write an event note.

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Format of the Stem

Incomplete Statement

If the perianesthesia nurse discovers a patient in respiratory failure upon admission, the perianesthesia nurse should:

1. Call for help and begin airway resuscitation efforts.*
2. Notify the attending.
3. Insert a nasal airway and apply the pulse oximeter.
4. Write an event note.

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Stem Do's

- ✧ Use the third person.
  - "the perianesthesia nurse"
  - A patient post … (not name)
- ✧ Test knowledge, avoid teaching.
- ✧ Ask questions specific to perianesthesia nursing, not general nursing care.
- ✧ Be patient focused.
- ✧ Remain free from bias or stereotyping.

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Test Knowledge – Don't Teach!

Foley catheters drain a patient's bladder. The perianesthesia nurse palpates a distended bladder. The perianesthesia nurse anticipates an order to:

1. Insert a Foley.
2. Increase IV fluids.
3. Administer Lasix.
4. Discharge the patient home.

The perianesthesia nurse palpates a distended bladder and anticipates an order for:

1. A Foley insertion.
2. An IV fluid rate change.
3. Strict I&O records.
4. A Lasix IV.

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Perianesthesia Specific

- Items should be written to test perianesthesia nursing concepts and expertise.
- Look at the example below. Is this question perianesthesia nursing specific?

Example:

A fever is present when a patient's body temperature exceeds:

1. 98.0ºF/36.7ºC.
2. 98.6ºF/37.0ºC.*
3. 99.0ºF/37.2ºC.
4. 100.5ºF/38.1ºC.

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Not Patient Focused

- Items should be written to test perianesthesia nursing and be patient focused.
- Look at the example below. Is this question perianesthesia patient focused?

Example

The legal basis for establishing minimum wages and overtime pay for hospitals is the:

1. Equal Employment Opportunity Act.
2. Fair Labor Standards Act.*
3. Labor–Management Relations Act.
4. Equal Pay Act.

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Bias and Stereotyping

- **Bias** → No item should have a characteristic that results in differential performance for individuals of the same ability but from different ethnic, gender, cultural, or religious groups.
- **Stereotyping** → Tests should be free of material that may be offensive, demeaning, or emotionally charged.

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A Few More Rules…

- Don't use a word in the stem that appears in the correct answer.

  What part of the oxygen *mask* is attached to the patient?

  1. Face mask
  2. Humidifier
  3. Mist
  4. Nasal cannula

- Don't use region-specific terminology or practices.
  - "Stretcher" in the East / "Gurney" in the West
  - "Soda" in New York / "Pop" in Texas

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A Few More Rules…

- Don't use "WOULD," use "SHOULD."
  - Use "SHOULD" to say that something is the right thing to do, the correct choice.
  - "WOULD" implies something that is possible/could be, but might not be.
- Don't use absolute terms ("No," "All," "Never," "Always")

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Gender Neutral

Unacceptable	Best Practice
Brother / Sister	Sibling
Mother / Father	Parents
Boyfriend / Girlfriend / Husband / Wife	Partner / Significant Other / Spouse

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Descriptive Person Language

Unacceptable	Best Practice
Blind	Visually Impaired
Handicap/Handicapped	Disability/Disabled
Crippled	Disabled
Retarded	Learning Disability
Deaf	Hearing Impaired

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Negative Stems

Restrict the use of negatives in the stem.

- Requires that the answer be a false statement or incorrect response.
- Candidates are likely in the habit of searching for true statements, so this may introduce an unwanted bias.
- These types of stems tend to confuse the examinee and thus tend to make the items less effective in assessing subject matter knowledge and understanding.

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Distractors

Distractors are as important as the key.

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Distractor Do's

1. Well-constructed distractors reduce the ability of uninformed candidates to guess correctly.
2. Good distractors help discriminate between examinees who have mastered the knowledge and those who have not.
3. Candidates should get the item correct because they have mastered the knowledge being tested.
4. It is a common mistake to make the correct answer clear and concise, while distractors are vague and ambiguous.

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Distractor Rules…

1. There must be ONLY one clearly correct answer.
   - ☐ An obviously incorrect answer.
   - ☐ Almost correct…but has a trick in it.
   - ☐ The other obviously incorrect answer.
   - ☐ The correct answer for this test.
2. Do not use "All of the above" or "None of the above" as a distractor.
3. The correct key and at least one other distractor must be parallel in:
   - length
   - grammatical structure
   - terminology/technical terms

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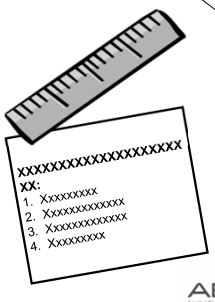
Distractor Length…

- Ideally the distractors should be equal in length, or two pairs of equal length
- The longest choice is most often the correct response

xxxxxxxxxxxxxxxxxxx xxx:
1. Xxxxxxxxx
2. Xxxxxxxxxxxxxxxxxxxxx
3. Xxxxxxxxx
4. Xxxxxxxxx



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Grammar…

The perianesthesia nurse palpates a distended bladder and anticipates an order for a:

1. Foley Insertion.
2. Intravenous fluid rate change.
3. Strict I&O records.
4. Administration Lasix IV.

The grammar doesn't flow from the incomplete statement stem to the distractors.

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Effects of Guessing

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Effects of Guessing

In a multiple-choice question with four possible responses:

- ✧ Three good distractors give an examinee a 25% chance of guessing correctly.
- ✧ One bad distractor = 33%.
- ✧ Two bad distractors = 50%.
- ✧ Three bad distractors = 100%.

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Clues That Help Candidates Guess Correctly

- ✧ The type of format chosen for the question.
- ✧ The format of the question asked (STEM).
- ✧ The way the correct answer (KEY) is written.
- ✧ The way the incorrect answers (DISTRACTORS) are written.

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The IGNU Test

The fribbled breg will minter best with an:

a. Derst.
b. Morst.
c. Sortar.
d. Ignu.

**The word "an" implies that the answer begins with a vowel.*

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The IGNU Test

The purpose of the cluss in furmpaling is to remove:

a. cluss-prags.
b. tremalis.
c. cloughs.
d. plumots.

**word from correct answer is in the stem.*

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The IGNU Test

Trassign normally occurs when:

a. The lusp dinks the vom.
b. The viskal flans, if the viskal is zortil and the chackbe is plaffed.
c. The belgo frulls.
d. The dissles lisk tarious.

**Does one answer stand out because it appears longer and more technical?*

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The IGNU Test

The sigla frequently overfesks the trelsum because:

a. All siglas are mellious.
b. Siglas are always votial.
c. The trelsum is usually tarious.
d. No trelsa are feskable.

**Is the word treslum only in one of the answer choices? Are all distractors using absolute terms except for one answer? The stem uses the term "frequently," but all distracters have absolute terms except for c. which states "usually."*

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The IGNU Test

What causes are indicated when trossels are gruven?

a. The sab foped and the doths tinzed
b. The kredgs roted with the rots
c. The rakogs were not accepted in the sluth
d. The polats were thenced in the sluth

**Sab foped and the doths tinzed has to be correct, because the stem is asking for* causes*, and only option A has two components.*

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The IGNU Test

The mintering function of the ignu is most effectively carried out in connection with:

a. A razma tol.
b. The groshing stantol.
c. The fribbled breg.
d. The frally sush.

**Remember the previous question mentioned the fribbled breg will minter best with an ignu? It provides the correct answer to this question.*

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We want our candidates to get an answer correct based solely on their knowledge of the material.

Exams with poorly written items allow candidates who do not have the adequate knowledge to:

- ✧ Get more answers correct based on guessing,
- ✧ Achieve higher scores than their ability warrants,
- ✧ (Sometimes) pass when they should have failed.

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Your Item Is Almost Ready for Submission

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So You Wrote Your First Item!!!

It's time to *Review* before you submit!!

1. Is the item too easy or difficult?
2. Is the answer clear to a prepared candidate?
3. How challenging are the distractors?
4. Are the distractors plausible?
5. Does the item measure universal or specialized knowledge?
6. Is there only one clearly correct answer?

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Item Review

1. Is the context, setting, content, and terminology appropriate and familiar to the candidate population?
2. Are the word choice, acronyms, phrasing appropriate?
3. Is the reading level of the language appropriate?
4. Is the item free from bias and stereotyping?
5. Is there an appropriate reference?

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Referencing

- ✧ All items must have at least one reference from the approved list of references before the item can be submitted.
- ✧ The reference must support the stem and correct answer.
- ✧ We rely on subject matter experts to construct good distractors; you will most likely not find a reference to support a wrong answer.
- ✧ Isolate the key principle tested as the first step in locating a reference.
- ✧ Use the reference list provided for the reference code –don't forget to add a page number!

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Item Classification

- ✧ All items are classified before submission to the bank.
- ✧ Items are classified into:
  - Categories (CAPA question/CPAN question/BOTH)
  - Cognitive Levels
  - Rubrics

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Rubrics

- ✧ A *rubric* is a unique content classification number which directly links the item to a specific component of the exam blueprint (Domain, Task, Knowledge).
- ✧ There are two parts to the rubric:
  - Primary Rubric (topic or domain)
  - Secondary Rubric (interventions/action)

ALL ITEMS MUST HAVE A PRIMARY and a SECONDARY Rubric!!

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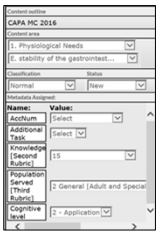
Rubrics

The perianesthesia nurse administers Narcan to a 45-year-old patient to reverse the effects of:

a. Opioids.
b. Benzodiazepines.
c. Antihistamines.
d. Antihypertensives.



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Cognitive Levels

1. ***Recall***: recalling a fact or understanding a principle.
2. ***Application***: relating two or more facts to a situation or analyzing a group of facts.
3. ***Analysis***: evaluating a situation using facts or making recommendations based on analysis and evaluation of facts.

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Cognitive Level 1: Recall

Recall (or Knowledge) items primarily test the recognition or recall of information; an effort of memory.

"What is X?"

Examples of verbs that are helpful to identify this cognitive level are:

- define, describe, identify

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Recall Example

The dissociative state attributed to ketamine anesthesia can be modified by the administration of:

a. Benzodiazepine.
b. Antagonist.
c. Anticonvulsant.
d. Antiarrhythmic.

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Cognitive Level 2: Application

Application items primarily test the interpretation or evaluation of information.

"Given the following information about Y, what is X?"

Examples of verbs that are helpful to identify this cognitive level are:

- interpret, apply, illustrate, calculate

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Application Example

A patient, post-nasal surgery, has frequent belching and swallowing. The perianesthesia nurse suspects:

a. Hemorrhage.
b. Nausea with impending emesis.
c. Obstruction of turbinate's.
d. Pain.

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Cognitive Level 3: Analysis

Analysis items primarily test the ability to analyze information.

Emphasis on the inter-relationships of multiple sources of data.

"Given the following information about Y and what is already known about Z, what is X?"

Examples of verbs that are helpful to identify this cognitive level are:

- organize, evaluate, compare

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Analysis Example

Following a 4-hour hepatic embolization, the patient is complaining of pain and discomfort in his lower abdomen. Intraoperative IV fluids exceeded 2 liters of Normal Saline, the patient has not voided. The perianesthesia nurse anticipates an order for:

a. A bladder scan.
b. A chest x-ray.
c. Additional fluids.
d. A narcotic.

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Recall Item

Signs and symptoms of fat embolism include:

a. Tachycardia, tachypnea, chest pain, and anxiousness.
b. Frothy sputum, bradycardia, and tachypnea.
c. Tachypnea, stridor, tachycardia, and a feeling of impending doom.
d. Difficulty taking a deep breath, floppy respirations, and decreasing SaO2.

Now switch signs and symptoms to stem…

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Now an Application Item

A patient, post-femur fracture repair, has a heart rate of 122, respiratory rate of 32, and complains of chest discomfort and feeling anxious. The perianesthesia nurse suspects:

a. Fat embolism.
b. Pulmonary embolism.
c. Shock syndrome.
d. Neuromuscular blockade reversal.

Analyze and Interpret Symptoms

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Now an Analysis

A patient, post-femur fracture repair, develops a heart rate of 122, respiratory rate of 32, complains of chest discomfort and feeling anxious. The perianesthesia nurse anticipates **FIRST** administering:

a. Oxygen and keeping the patient quiet.
b. Aspirin and morphine.
c. Midazolam and IV fluid bolus.
d. Morphine and obtaining a 12-lead ECG.

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PSI *Dimensions* Online Item Submission

prod1.lxr.com

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Accessing the *Dimensions* System: Steps 1 - 2

https://prod1.lxr.com/

Step 1

Click this link: https://prod1.lxr.com/

Supported internet browsers are Internet Explorer, Edge, Apple Safari, and Google Chrome.

Step 2

Enter your user name and password.

You will have received a username and password from a PSI staff member.

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Item Authoring in *Dimensions:* Steps 3 - 4

Step 3

Click on Authoring.

Subsequent logins will take you to the page you were on when you clicked Sign Out.

Step 4

Click the blue plus to start a new item.

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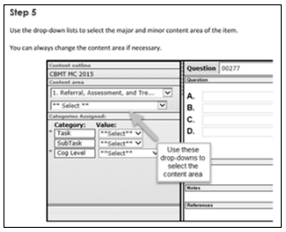
Item Authoring in *Dimensions:* Steps 5 - 6

Step 5

Use the drop-down lists to select the major and minor content area of the item.

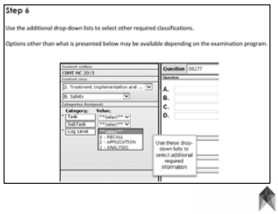
You can always change the content area if necessary.



Step 6

Use the additional drop-down lists to select other required classifications.

Options other than what is presented below may be available depending on the examination program.



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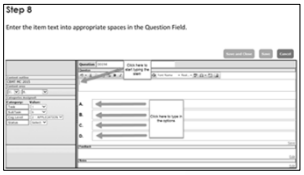
Item Authoring in *Dimensions:* Steps 7 - 8

Step 7

Click the Edit button in the Question Field to open the item editor.

Step 8

Enter the item text into appropriate spaces in the Question Field.



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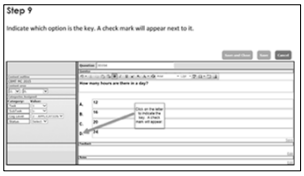
Item Authoring in *Dimensions:* Steps 9 - 10

Step 9

Indicate which option is the key. A check mark will appear next to it.

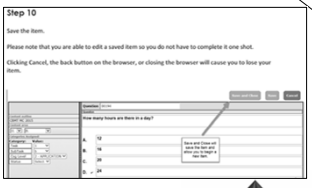


Step 10

Save the item.

Please note that you are able to edit a saved item so you do not have to complete it one shot.

Clicking Cancel, the back button on the browser, or closing the browser will cause you to lose your item.



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Your Item Is in the Bank: Now What??

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PSI: Test Development
Specialists and Psychometricians

- PSI is a company that works closely with ABPANC to ensure that a high-quality exam is created and meets accreditation standards. PSI maintains the item bank.
- The Certification Council works together with PSI to develop the CPAN® & CAPA® certification exams.
- The Item Review Committee with guidance from PSI reviews, revises, and approves items for the item bank.
- The Exam Review Committee reviews and approves the exam forms that PSI psychometricians and test developers assembled according to the blueprint.

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Item Writing Review

- Items in the Bank go through several stages of review to ensure they adhere to item writing guidelines (i.e., structure, grammar, adherence to style guidelines, etc.) and reflect current, best practice.
- Every item that is submitted is appreciated and valued!
- Expect that your item will change as it passes through the peer review process.
- You may not even recognize your item after a review! But, please remember that your input is valuable and although your item looks different, the concept is preserved!

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Journey of an Item

Item is written and submitted

⇩

Items reviewed and edited by panel of Subject Matter Experts at Workshop

⇩

Items selected to be pre-tested

⇩

Exam administered

⇩

Item statistics reviewed

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Remote Item Writing Drive

July to August 2022

⇩

Write items remotely from the convenience of your home using the *Dimensions* system.

⇩

Earn 2 contact hours per question submitted (up to 60 contact hours per 3-year recertification period)

⇩

June/July: Item writer training webinar and item writing assignments.

⇩

July to August 2022: Submit new items in *Dimensions*.

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Thank you!

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