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### American Board of Radiology Mission

“To serve patients, the public, and the medical profession. . .”

“By certifying that its diplomates have acquired, demonstrated, and *maintained* a requisite standard of knowledge, skill, and understanding. . .”

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### Development of Part 1, Part 2 & CC Exams

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### Length of The Exam

#### Psychometric analysis

- Enough questions to get a valid result
- Not too many to fatigue the candidate

A good exam is a careful statistical sample of all subject areas

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### Development of a Question

**Content Expert Drafts Question**

- Research
- Appropriate Reference

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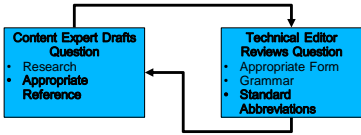
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### Development of a Question




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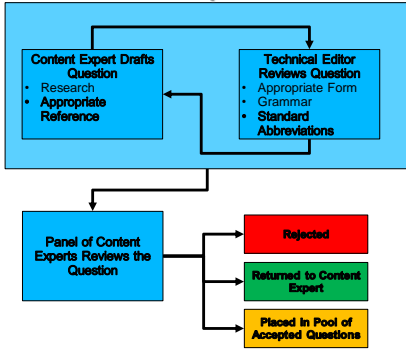
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### Development of a Question




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### Cost for Question Development

ABR Office cost = \$171 per question  
 Volunteer Time = **Priceless**

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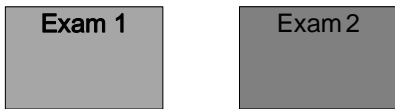
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### How do we know two exams are the same?




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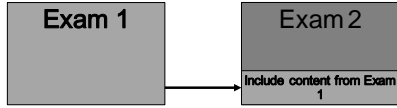
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### How do we know two exams are the same?




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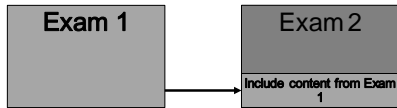
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### How do we know two exams are the same?



Have content experts evaluate both exams

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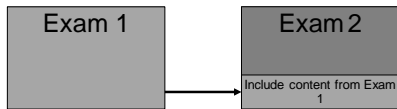
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### How do we know two exams are the same?



Do a statistical analysis of both exams to establish reliability

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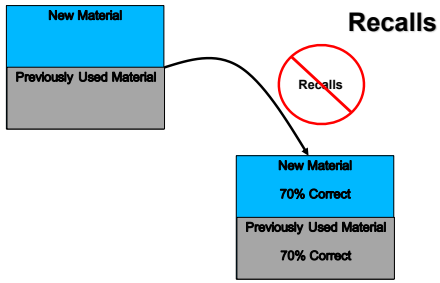
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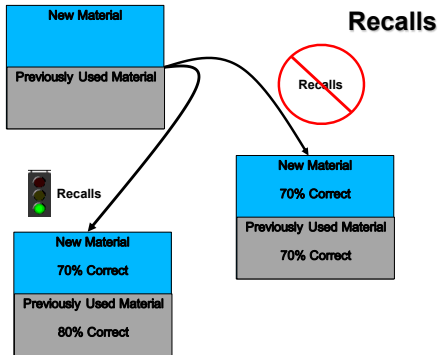
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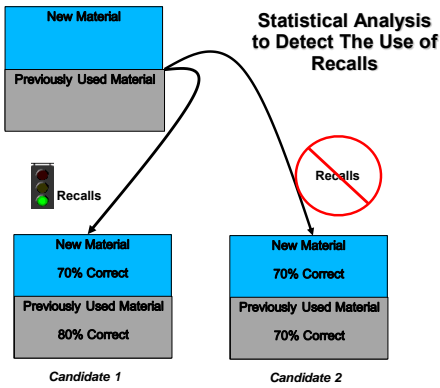
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### Exam Development and Assembly



Every exam has a blueprint which describes the content of the examination

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### Key Factors in Creating the Blueprint

- Practice profile surveys
- Published practice documents
  - AAPM Task Group Reports
  - NCRP Reports
  - .....
- Content expert input

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### Forms of the Blueprint

**Exam Development Blueprint**

This blueprint is designed to provide a study guide for candidates & A guide for what content should be used in question writing

*This blueprint is published*

**The Test Assembly Blueprint**

Uses the ED Blueprint but has specific information on content details. i.e. Approximately 7 questions on brachytherapy

*This blueprint is not published*

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### Small Section of Exam Development Blueprint

**Q02 Radiation Biology**  
 Physics and chemistry of radiation interactions with matter  
 Sources of ionizing radiation  
 Types of ionizing radiation  
 Particulate radiations  
 Linear energy transfer  
 Radiation dose and units  
 Principles of radiation dosimetry

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### Exams Sample the Overall Content Domain

Enough items to produce similar results at each administration

Cannot sample every point in the blueprint

The Test Assembly Blueprint is a general guide for assembling the test and is not published.

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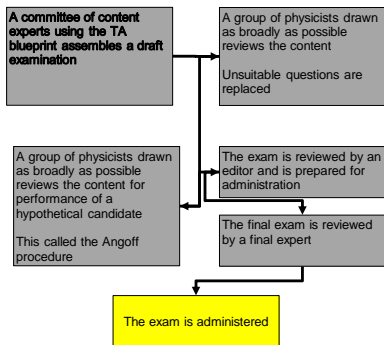
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### Test Assembly




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### How are the passing scores determined?

Set by psychometric analysis

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### Two Major Types



ABR Exams are CRITERION REFERENCED



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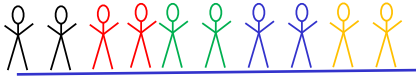
### Norm Referenced

Used for ranking candidates

Set a passing score

Examples:

- College courses,
- Scholastic Aptitude Test,
- Graduate Record Exam



Increasing Competence →

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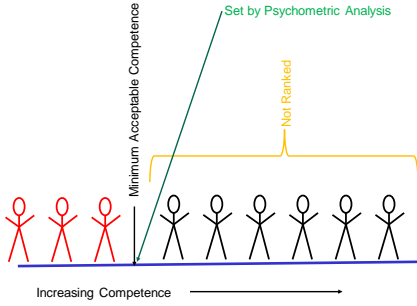
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### Criterion Referenced




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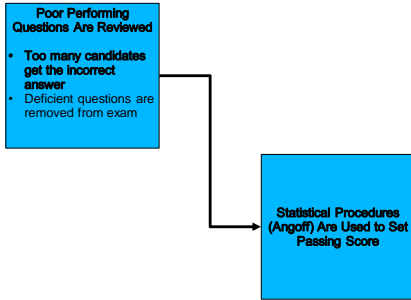
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### Establishing the Passing Score




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Thank you for your attention!

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