

Joint Commission on National Dental Examinations (JCNDE) - Update on the National Board Dental Examination

Test Development Activities

ADEA Annual Session and Exhibition
March 17, 2009

TEST DEVELOPMENT ACTIVITIES

- ◆ Test Construction Meetings
- ◆ Maintenance/Communication
- ◆ Quality Control
- ◆ Resources
- ◆ Service
- ◆ Research

TEST CONSTRUCTION COMMITTEES

- ◆ Component A Committees:
 - Discipline-Based Items
 - Testlet Items

- ◆ Component B Committees:
 - Case Selection
 - Component B
 - Consultant Review

TEST CONSTRUCTION MEETINGS

◆ Part I

- 5 test construction committees

◆ Part II

- 12 test construction committees

◆ Dental Hygiene

- 6 test construction committees

TEST DEVELOPMENT ACTIVITIES

MEETINGS

- ◆ Conduct 30+ meetings a year
- ◆ Make all meeting arrangements
- ◆ Prepare all meeting materials

TEST DEVELOPMENT ACTIVITIES MAINTENANCE/COMMUNICATION

- ◆ Maintain item banks
- ◆ Scan and edit case images
- ◆ Position case materials in templates
- ◆ Compile multiple examination editions
- ◆ Prepare files to test delivery vendor
- ◆ Communicate with testing staff
- ◆ Train staff and test constructors
- ◆ Respond to external requests
- ◆ Investigate breaches in test security

TEST DEVELOPMENT ACTIVITIES

QUALITY CONTROL

- ◆ Test Development - Quality Review
- ◆ Post Examination Analysis
Process
Item Drift
Compromises
Examination Republication
- ◆ Candidate Survey Results and EIRs

TEST DEVELOPMENT ACTIVITIES

RESOURCES

- ◆ Test Development Resources
 - Orientation Manual
 - Test Item Development Guide
 - Case Development Guides
 - Reference Text Lists
- ◆ Test Specifications
- ◆ Examination Development/Review Process

TEST DEVELOPMENT ACTIVITIES SERVICE

- ◆ Joint Commission
- ◆ ASDA
- ◆ ADEA
- ◆ ADA internal support areas
- ◆ Dental community

TEST DEVELOPMENT ACTIVITIES RESEARCH

IDEA (Innovative Dental Assessment) Grants:

- ◆ Research on Examination Length/Distractors
- ◆ A Testing Mechanism to Integrate Basic / Clinical Sciences
- ◆ Resistance of Test Models to Cheating
- ◆ Interactive Virtual Reality Patient Scenarios

TEST DEVELOPMENT ACTIVITIES RESEARCH

Joint Commission:

- ◆ Restructure of Part I and Part II
- ◆ Development of a Pilot Examination
- ◆ Modification of the Test Specifications
- ◆ Restructure of Test Committees

PROCESS OF ITEM DEVELOPMENT

- ◆ Generate test specifications
- ◆ Develop test items
- ◆ Review test items
- ◆ Pretest new items
- ◆ Analyze item performance
- ◆ Administer items in operational exam
- ◆ Evaluate item performance

TEST SPECIFICATIONS

The test specifications are an outline for the structure and content of an examination.

The test specifications become the blueprint for selecting items for an examination.

CONSTRUCT TEST ITEMS

Part I

5 test construction committees

Part II

12 test construction committees

Dental Hygiene

6 test construction committees

Use Test Item Development Guide
as a source for writing items.

REVIEW OF TEST ITEMS

Review and revise items by proofing the item against our item guidelines.

Document the item: cognitive level, etc.

Verify answer

Verify the content

Conduct a sensitivity check

PRETEST NEW ITEMS

New items are piloted or pre-tested to a sample of students to secure performance statistics.

Items can be pre-tested as embedded items in an examination or as a separate subtest.

ANALYZE ITEM PERFORMANCE

Review item performance for acceptable item statistics.

Good performance enhances the quality of the examination and the item pool.

Pre-testing directly impacts the reliability of the scores.

ITEM DIFFICULTY (P)

The percentage of candidates who answer the item correctly.

.90 or higher	Easy
.40 - .89	Moderate
.08 - .39	Hard

ITEM DISCRIMINATION (R)

The relation between candidates answering the item correctly and their overall test performance.

.26 or higher	High
.08 - .25	Medium
.07 or lower	Low

EXAMINATION ITEM STATISTICS

Difficulty	Hard	Medium	Easy
Discrim. High	10	55	12
Medium	23	170	30
Low	13	26	11

ADMINISTER IN AN OPERATIONAL EXAMINATION

A predetermined number of pre-tested items with acceptable performance statistics are administered in a large-scale examination.

EVALUATE ITEM PERFORMANCE

Review the item performance information to determine the future use of an item.

Retain

Revise and retest

Retire

THE ITEM DEVELOPMENT PROCESS

- ◆ test specs
- ◆ item creation
- ◆ item review
- ◆ item pretest
- ◆ item review
- ◆ administer in exam
- ◆ item review



EXAMINATION DEVELOPMENT - 1

Each test construction committee selects items for an examination according to their test specifications

EXAMINATION DEVELOPMENT - 2

Multiple examination editions are drafted by each test construction committee for their respective discipline.

Each drafted edition is reviewed and finalized at the next test construction meeting.

EXAMINATION DEVELOPMENT - 3

A Consultant Review Committee reviews the final examination editions - both discipline- and case- or testlet-based materials.

EXAMINATION DEVELOPMENT - 4

After review by Consultant Reviewers, all finalized examination editions are compiled, published, and sent to the test vendor.

EXAMINATION DEVELOPMENT - 5

The test vendor compiles the examinations on their test delivery system.

The examinations are sent to us on their proprietary software for a series of internal reviews.

EXAMINATION DEVELOPMENT - 6

Internal reviews are conducted by staff to ensure:

- ◆ case or testlet materials are linked to the correct items.
- ◆ images, special characters and formats display properly.
- ◆ items are intact and score information is correct.
- ◆ there are no technical issues with the software.

EXAMINATION DEVELOPMENT - 7

After multiple internal reviews and revisions, test development and psychometric staff report to a Prometric Test Center to review all the examinations prior to dissemination.

EXAMINATION DEVELOPMENT - 8

The examinations are disseminated to Prometric Test Centers for live administration.

Staff collect and compile all examination materials and review information into a central file.

EXAMINATION DEVELOPMENT - 9

The final stage is waiting for test center feedback from candidates.

Though multiple reviews are conducted of the examination materials, the unexpected error may occur.



EXAMINATION DEVELOPMENT - 10

- ◆ select items for examination editions
- ◆ draft and finalize examination editions
- ◆ consultant review of examinations
- ◆ compile and publish examinations
- ◆ test vendor compiles examination
- ◆ internal reviews of examinations
- ◆ test center review of examinations
- ◆ live administration
- ◆ feedback

TEST DEVELOPMENT CHALLENGES

- ◆ Monitoring for examination breaches
- ◆ Investigating materials for compromises
- ◆ Redeploying examinations after a breach
- ◆ Expanding our item banks
- ◆ Securing quality case materials
- ◆ Maintaining our item banks
- ◆ Meeting multiple examination deadlines

TEST DEVELOPMENT STAFF

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QUESTIONS ??

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