

# What Makes EMSTesting's content **Valid and Defendable?**

## Content Creation

Each question was originally created based on the National Registry's Job Practice Analysis and the National Curriculum. Those questions and newer test items have since been cross-referenced to the National Education Standards and latest practice analysis headings.\*

All available and commonly used textbooks and manuals were referenced. When a conflict occurred, common practice or the most appropriate response was used by consensus among the educator team and medical director. The gold standard reference for drug dosages and indications for Platinum has and remains to be the American Heart Association's guidelines and questions are updated with each AHA science change. Reading levels were assigned and we attempt to keep each question within 2 grades of the expected reading level for each provider. Questions were assigned a Bloom's level and estimated cut score. Each question includes annotations with rationales to explain why the correct answer is correct and why the good distracters are not correct.

All questions have been reviewed for cut scores once over 100 candidates have responded and are adjusted based on actual results and Nedelsky method of calculating cut scores.\*\*

\*The above guidelines are standards adopted in 2002 by our group's authors and continue to be our practice when making additions and modifications of test questions (items) to our software.

\*\*EMSTesting.com offers ready made final exams that are constructed using a predetermined blueprint which draws items from an entirely different question bank than our regular test building software. This process assures all of the items are new content for students taking their capstone summative evaluation at the end of a program. These tests also undergo the same development and scrutiny as our standard test questions do.

## Other Instruments for Success

Our admission and evaluation testing assesses baseline reading levels and math abilities based on the curriculum. The site identifies learning preference and student motivation along with strategies how to utilize the data. In addition, a test anxiety assessment is offered, which automatically launches a tutorial to help them overcome this if present. This is included and preloaded on the student's dashboard for educators to implement.

Also available on the bottom of the student landing page are video tutorials on "How to take a test", "How to study", and "How to read a textbook".

## Item Analysis Guidelines

On or around the fifteenth of each month Platinum educators review a report of our Computer Adaptive Testing (EMSCAT) outcomes. As of June 2016, we have had over 34 million responses to our 4,800 question bank which aids us in our validation process. \*\*\*

In addition to the raw data analysis from the adaptive and computer based testing experiences, there are numerous channels for instructors and students to provide feedback during exams and test building to the authors of the items. Of these submissions, each are individually reviewed and if appropriate, acted on.

Item	Date	Previous Cut Score	Current Cut Score	Discrimination	Answer	A	B	C	D	Total
1787	5/8/16	0.484686397	0.482211899	0.1811	A	28773	8577	275	21029	58711

\*\*\*Test items have been answers over 80 million times combined in the computer based and computer adaptive environment.

## Test Evaluation & Feedback

The results you receive if you use the full version of EMSTesting online and students take tests online are:

- ✓ A KR20 Reliability if over 4 students have participate.
- ✓ The class average for the test-both raw score and cut score.
- ✓ The Registry, Educational Standard, and National Curricular reference for each question if applicable (not all questions have representation in all three categories).
- ✓ The National Difficulty and Discrimination.
- ✓ Item Pvalue and Point Biserial score.
- ✓ The breakdown of responses for each question.
- ✓ The number of responses from the students for questions they would like to discuss in class.
- ✓ The student reported confidence level and success rate.

Student outcome pages when enabled will show:

- ✓ Results for each student (which are available for the student & instructor).
- ✓ Individual student start and end times.
- ✓ Performance by reading level.
- ✓ Results by cut score.
- ✓ Outcome by Bloom's level.
- ✓ Ratings by National Registry Reference.
- ✓ Scores by Educational Standard.
- ✓ Performance by National Objective.
- ✓ An opportunity for students to review each question with annotation.