

No Learner Left Behind: Elements and Exercises to Improve Examination Results

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I. ENHANCING EXAMINATION RESULTS

BACKGROUND

The competency of medical knowledge is assessed formally by written or oral examination. In pre-clinical years, most students are examined on basic science knowledge and to a lesser degree on clinical application of that knowledge. During the clinical years, medical students learn to care for patients in a clinical setting and examinations often reflect what they are learning. By the time medical students enter residency, they have taken a multitude of tests (including shelf examinations and the USMLE/COMLEX), but many still struggle with performing adequately on in-training examinations (ITE) and on specialty board examinations. The ITE is quite predictive of eventual success on board certification and can be used to identify residents who may need additional help on examination skills prior to taking their board examinations. While residency is not meant to teach to an examination, the goal of most if not all physicians is to become board-certified in their chosen specialty.

II. CASE

You are the pediatric program director for a mid-sized residency program that has an excellent board examination pass rate. You have just received the scores from the ITE that was administered in July. You are meeting next week with Jane, a second-year pediatric resident who is planning on going into pediatric cardiology.

Jane scored very well on her USMLE tests and was near the top of her class in medical school. She did not do very well on the ITE her intern year, only scoring 50. Last year you met and discussed the results. Jane believed her score was due to fatigue, she was on a busy inpatient rotation that month. She also acknowledged she had only 12 weeks of pediatrics during her 3rd and 4th years of medical school.

This year, Jane improved her score, but only to 120. Her class average was 280. You are aware that ITE scores predict board passage and that her current score indicates less than a 50% likelihood that Jane will pass the board exam on her first attempt.

What would you do to diagnose the issues related to Jane's second year ITE score?

What tools could you use for diagnosis and for remediation?

What resources could you use for diagnosis and for remediation?

III. EXERCISES FOR LEARNERS WITH DIFFICULTY WITH EXAMINATIONS

1. DIAGNOSING and REMEDIATING THE LEARNER WITH PROBLEMS ON EXAMINATIONS

EXPLANATION: This exercise should be completed with the learner when the results of the in-training examination or other examination are lower than expected, or are low enough to predict problems with board certification examination passage.

TOOL: Diagnosing the Learner with Poor Performance on an Examination

THE STEPS:

- Meet in a private setting, one on one with the learner
- Use the checklist as a reference for understanding the poor score on the examination

Diagnosing the Learner with Poor Performance on an Examination

Use the SOAP format for diagnosis and remediation of difficult learner

S – Subjective: We are meeting today to discuss the results of the ITE. How did the test go for you that day?

O – Objective: Show score and discuss the mean

A – Assessment: Do you have ideas as to why your score was lower than the mean? May include checklist and further testing

P – Plan: Come up with a plan to address the issue identified in “A”

(Alternative: switch the “S” and “O” and give test score before asking the subjective question)

Checklist for Poor Score on ITE

- Lack of motivation to do well on exam (didn't realize ITE were significant)
- Post-call
- Other life issue (stress, problems at home, ill, etc): _____
- Didn't have (or make) time to study adequately
- Fund of knowledge
- Learning disability * (Not related to intelligence, but rather a area of relative weakness in information processing)
 - Possible features:
 - History of difficulty taking standardized tests
 - MCAT Scores above the mean in science, but below in reading skills
 - Poor reading comprehension
 - Poor spelling
 - Illegible handwriting
- Attention problems
- Test anxiety
 - Possible features:
 - Answer more questions incorrectly at beginning of test (while most anxious)
 - String of questions answered incorrectly when extremely anxious
- Test taking skills
 - May use test-taking checklist to quickly assess

Test-taking Skills Checklist

- Read the directions carefully
- Read **all** of the stem and **every** alternative
 - Anticipate the correct alternative before actually looking at the alternatives
 - Eliminate the obviously incorrect alternatives
 - Eliminate any alternatives that do not agree grammatically with the stem

Ex: A mothers may give birth to a child who is small for gestational age because:

 - a. she never ate a cheeseburger*
 - b. she smoked a pack of cigarettes a day during pregnancy*
 - c. her birthweight is below the 10th percentile for babies of the same GA*
 - d. none of the above*
 - e. all of the above*

(a obviously wrong although could relate to anemia, b correct, c refers to baby, not mom and the stem refers to mom)
- Consider "all of the above" and "none of the above." Examine the "above" alternatives to see if all of them or none of them apply totally.
- Note negatives. If a negative such as "none", "not", "never", or "neither" occurs in the stem, know that the correct alternative must be a fact or absolute. Read these at least twice to assure full understanding.
- Note superlatives. Words such as "every", "all", "none", "always", "must", "completely" and "only" are superlatives that indicate the correct answer must be an undisputed fact.
- Note multiple ideas or concepts within a true/false or all/none of the above statement. All parts of the statement must be true or the entire statement is false.
- Answer all questions in order without skipping or jumping around. Identify doubtful answers by marking in the margin and recheck these as time permits after all questions have been answered.
- Do not linger too long on any one question. Mark your best guess and move on, returning later if you have sufficient time.
- A positive choice is more likely to be true than a negative one.
- Consider ethnicity, race, gender, geography and occupation when you read case studies.
- If an answer seems obvious, it probably is.

IV. RESOURCES

Diagnosis:

1. On-campus resources
 - a. Dean's office
 - b. GME office
 - c. Teaching learning centers
 - d. School of Education
 - e. School of Psychology
2. Psychological services (i.e. Employee Assistance Program [EAP])

Assistance with Issue/Remediation:

1. On campus resources
 - a. Dean's office
 - b. GME office
 - c. Teaching learning centers
 - d. School of Education
 - e. School of Psychology
2. Psychological services (i.e. Employee Assistance Program [EAP])
3. Board preparation courses
4. Board review books
5. AAP PREP questions (<http://www.aap.org/profed/prep.htm>)
6. ABP website (<https://www.abp.org>)
7. Study tips lists and websites (see next page)
8. Anxiety reduction resources (see toolkit)

Study Tips Checklist

Study guides:

- Use study guides that have many test questions
 - A study demonstrated that students who studied only using review material and not test questions were overconfident in their knowledge.
- When reviewing using test questions, do not only look for the right answer, but understand why the other options are not correct (this technique will increase your learning by 5!)
- When studying, group facts or ideas together that are similar in meaning. While learning each group, pay special attention to the differences among the facts and ideas within each group.

Study Groups:

- One way to run study groups is to have each member formulate test questions.
- Practice working with the results of physical examination findings and diagnostic studies. (especially dermatologic findings, CXR, AXR, peripheral blood smears, UA)

At the exam:

- Spend a few minutes organizing yourself. Determine how many questions you should have answered at the midpoint of the exam.
- Do not study the night before the exam or between the first and second day. This may cause retroactive inhibition, in which longer-term knowledge is replaced by short-term memory.
- Do not look up items during the breaks. Finding out you were wrong may affect your self-confidence.

How to Reduce Test Anxiety

- Exercising for a few days before the test will help reduce stress.
- Get a good night's sleep before the test.
- Stay relaxed, if you begin to get nervous take a few deep breaths slowly to relax yourself and then get back to work.
- Read the directions slowly and carefully.
- Write down important formulas, facts, definitions and/or keywords in the margin first so you won't worry about forgetting them.
- Don't worry about how fast other people finish their test; just concentrate on your own test.
- Focus on the question at hand; don't let your mind wander on other things

* Modified from <http://www.testtakingtips.com/anxiety/index.htm>

V. SELECTED REFERENCES ON IMPROVING EXAMINATION RESULTS

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