

# The Art of Asking Questions:

## An Analysis of First-Year Medical School Exam Questions

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### Innovation Identified

We are generating a formalized method of analyzing medical school exam questions by using Bloom's taxonomy. We plan to quantify questions from each of the first-year medical school courses and provide course directors with feedback regarding the proportion of questions that are high-order thinking (HOT) versus low-order thinking (LOT) on their exams. We will then create faculty development workshops to explain Bloom's taxonomy as it relates to exam questions. By being aware of Bloom's taxonomy and deliberately asking questions from each of the categories of the taxonomy, we hope that faculty will guide their learners to a deeper understanding of the material.

We will also analyze how students perform on HOT versus LOT questions and will provide individual students with this feedback. Based on their performance on HOT versus LOT questions, we will generate guides with specific study exercises to address their deficiencies. Finally, we will study whether student performance on HOT questions could predict future clerkship performance.

### Need/Gap Addressed

A principal goal of medical education is to develop the critical thinking skills of present and future doctors. To achieve this goal, faculty must consider seriously the questions they pose to their learners.

Unfortunately, medical faculty are not usually trained in the art of asking questions, and as a result they may not ask the types of questions that foster critical thinking. To date, there is no standard way of analyzing or evaluating the questions used during medical school examinations.

At the same time, some students may struggle with answering certain types of medical school exam questions and do not receive specific feedback on improving their study habits to address these deficiencies.

To address these needs, we will generate a formalized method of evaluating exam questions and will create faculty development workshops to aid faculty in creating better questions. We will also provide students with individualized study plans based on their gaps in exam performance.

### Stakeholder Input

Although faculty agree with the importance of developing the critical thinking skills of medical trainees, some believe that first-year medical school courses should focus on testing knowledge (LOT questions) rather than pushing their students to conduct analysis and application of learned material (HOT questions).

### Resources Needed and Potential Barriers

#### List of resources needed:

- Faculty workshops on categorizing questions and frame-of-reference training
- Generation of a database with all quiz and exam questions, with data on student performance on these questions
- Access to individual student data on how their performance of HOT versus LOT questions (optional)

#### Potential barriers:

- Faculty buy-in
- Time and resources to categorize questions

### Timeline Proposed

- Faculty training in categorizing questions and frame-of-reference training (one month)
- Obtaining database of questions from educational technology group (one month)
- Categorizing exam and quiz questions by faculty (three months)
- Implementing faculty development workshops (three months)
- Providing students with individualized feedback (three months)

### Institutional Contact

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