

Multiple Choice Question Writing: Training Medical Students to Fulfill an Essential Role in Medical Education



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BACKGROUND

Medical Education Assessment

Assessment can be grouped into two main categories, formative assessment and summative assessment. ¹

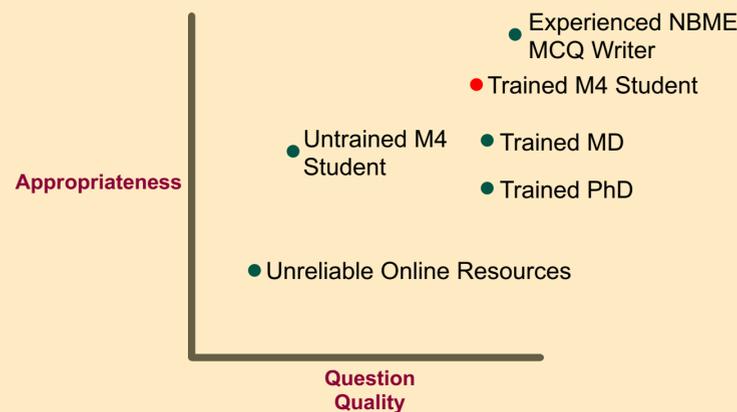
Multiple Choice Questions

Multiple choice questions (MCQs) are a cornerstone of effective medical assessment, acting as essential tools in both formative and summative assessment. ²

Assessment category	Formative	Summative
Purpose	To aid in student learning of content and concepts	To determine a student's level of knowledge and understanding
Features	<ul style="list-style-type: none"> Low stakes Provides actionable feedback 	<ul style="list-style-type: none"> Reliable and reproducible High-quality material
Beneficiaries	Students, medical educators	Patients, Administrative systems, medical societies

RATIONALE

Despite a large proportion of medical education and assessment being conducted through MCQ exams, these exams are most frequently written by PhDs and MDs who are far removed from the perspective of a medical student. They can therefore have difficulty developing questions that contain an **appropriate** amount of complexity for medical students. Conversely, questions written by medical students can be perceived to be **low quality** or non-representative of future formal assessments. ³



Demonstration of the level of question quality and appropriateness various groups of question writers are likely to achieve. Ideally, a senior medical student receiving training through this curriculum would be represented by the red point on the plot.

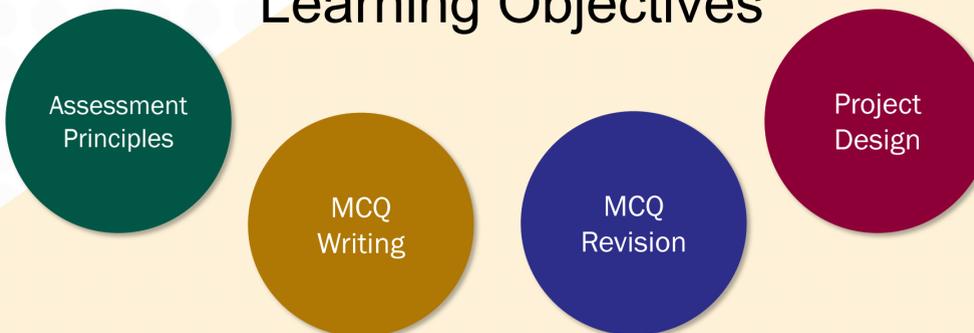
CURRICULUM PLAN

Curriculum Description

The proposed curriculum will function in the form of a one-month elective opportunity for fourth year medical students, during which they would learn medical education assessment theory and apply it through the design of MCQs. MCQs will be created in coordination with faculty, who will then utilize these high quality assessment resources in order to support junior medical student education

The curriculum will include educational papers, interactive workshops, learning exercises, and collaborative discussions in order to provide students with an understanding of medical assessment and the skills necessary to create high-quality multiple choice questions for both formative and summative assessment.

Learning Objectives



Curriculum Timeline

	Assignments
Week 1	MCQ writing tutorial, MCQ writing exercise, Outline MCQ content coverage
Week 2	Write 10 MCQs, Presentation and evaluation of peer MCQ-writing strategies
Week 3	Write 10 MCQs, Complete revision exercise, Revise self and peer MCQs
Week 4	Complete 30 MCQs, Complete revisions, Finalize MCQs with faculty advisor
Timing flexible	Essay on Assessment Principles, Statistical evaluation of MCQ dataset

WORK IN PROGRESS

In Development

- MCQ writing guidelines accumulated
- MCQ writing templates and checklists drafted
- MCQ writing tutorial exercise designed
- Faculty advisors contacted
- Course syllabus drafted

Future Directions

- Generate teaching MCQs for writing and revision exercises
- Incorporate problem-based learning (PBL) writing training as a parallel course of study within the curriculum
- Dialogue with MCQ writing organizations (e.g. NBME, Uworld, AAMC) to allow for transitions into professional MCQ writing

CONCLUSION

Upon implementation of this curriculum, prospective students will gain insight into core medical assessment principles, and develop practical skills in project management, medical assessment design, MCQ writing, and MCQ revision.

Additionally, faculty and junior medical students will gain high quality MCQ assessment content designed to their particular educational needs.

References:

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- Grainger, R., Dai, W., Osborne, E., & Kenwright, D. (2018). Medical students create multiple-choice questions for learning in pathology education: A pilot study. *BMC Medical Education*, 18(1), 201. <https://doi.org/10.1186/s12909-018-1312-1>