Categorizing Exam Questions to Guide Student Learning

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Introduction

A structure for adding category assignments to exam questions was developed and adopted. These category assignments are used across the medical school curriculum and are linked to course learning outcomes. The category assignments are added to exam questions within the exam delivery platform ExamSoft® (ExamSoft Worldwide). Question performance by category can be assessed through Examsoft and displayed in an educational tracking and reporting program called ProgressIQ® (Academic Progress Intelligence).

The purpose for this category assignment structure was threefold:
1. To provide students, faculty, and advisors with data regarding student's strengths and weaknesses by learning outcome.
2. To provide prescriptive interventions to students based on learning outcomes strengths and weaknesses.
3. To provide learning outcomes data that are key to driving improvement of the curriculum and instructional practices.

Development and Implementation Process

- Categorization structures researched
- Categorization structure based on Step 1 Outline developed by Dr. Aleeia Johnson in ExamSoft®
- Capabilities of ExamSoft investigated
- Faculty given categorization structure options along with sample data
- MD1 faculty chose Step 1 Outline

Pilot Year

- Categorization structure used by MD1 faculty
- One-on-one trainings and follow-up used to help faculty to categorize questions
- Performance data by organ system displayed for MD1 students in ProgressIQ®
- Faculty supporting underachieving students were trained in report use
- Performance data used to support underachieving students

Data from pilot year presented to MD1 and MD2 faculty
- MD1 and MD2 faculty decided to continue with the Step 1 Outline Structure
- Step 1 Outline in ExamSoft revised to include therapeutics

Between Pilot Year and 1st Year of Implementation

- 4567 test questions categorized using the Step 1 Content Outline.
- Course Directors categorizing questions for 4 out of 6 MD1 Courses and 5 out of 6 MD2 Courses.
- 87% of MD1 and MD2 multiple choice exam questions categorized in 2018-2019.
- Student performance reports by categories generated for 21 underachieving MD1 students 11 different times throughout the 2017-2018 academic year and for 5 underachieving MD1 students 8 different times throughout the academic year in the 2018-2019 academic year.
- MD2 faculty have distributed category performance reports to students after exams in the 2018-2019 academic year.
- Faculty supporting underachieving students have requested category reports for at least 19 students in 2018-2019.
- 4 students have requested and received summative reports by category in the 2018-2019 academic year.

Future Plans

- To make cumulative reports at primary and tertiary levels available to students after every exam block in ProgressIQ® or another educational platform.
- To provide additional resources to students that are linked to the USMLE-based exam question content outline.

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Examples of Student Performance Reports for Student and Faculty Use

- Provides information to help students prepare for Step 1

Category Use

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