

Title: Evolution of item bank management for student assessment

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What problem was addressed: Through career of all health profession educators they prepare hundreds of exams and design thousands of questions. Nevertheless, this fortune of questions are hardly analyzed nor categorized or saved. A great waste of time, money, and efforts without much improvement in question quality is the evident result of that.

Modern technology now provides multiple solutions for analysis of exams, categorization of questions, saving questions, and electronic easy release of exams in a standardized manner which saves great effort, time, and money plus ensures continuous improvement of assessment quality. However, these tools are costly and greatly unfamiliar to medical educators, especially in a developing country with low resources like Egypt.

What was tried: A novel "Measurement and Evaluation Center" (MEC) was founded aiming to develop assessment process at our faculty of Medicine using local low-resourced modern technology.

The center started by small training room equipped with five computers licensed for locally developed electronic item bank database (Intelligent Item Bank IIB) and single basic optical mark reader (OMR) and analyst for multiple choice questions.

A plan was set for one academic year, started by faculty board approval and call to attend half-day training workshop about exam analysis parameters (classic test theory) produced by OMR. This training was entitled "Are our exams good enough?" and for the first time, parameters like test reliability, difficulty index, discrimination index, distractors' efficiency, and detailed item categorization both numerical and with graphs were clarified and discussed.

Two motivated trainees were selected as MEC team who volunteered to share exam feedback analysis, training, and item bank structuring.

Five workshops were held attended by 70 staff members. Majority of trainees (91%) were highly satisfied (9/10) and greatly motivated (8/10) to share actively in the second half-day workshop about electronic item banks to upload previously categorized items and release exams electronically.

Then, an official invitation for departments to start to structure central item banks for which two pioneer departments sought active share (Anesthesia department and Pharmacology department), who loaded 557 items and 732 items respectively from which three exams and seven exams released in consequence.

What lessons were learned: MEC was a pioneer to use available low-cost technology tools for the first time; the impact of MEC's novel concepts of electronic mark reader, exam analysis, item categorization and storage, plus electronic exam release were accepted by a wide range of faculty members as a practical upgrade and useful change. On the other hand, many true challenges were faced, including unexpected hard resistance to collect questions centrally, exam security threats, missing authority support, low financial resources, difficulty to recruit and sustain team, and finally unavailability of sound Egyptian experts in medical education related item psychometric analysis and item banks electronic trouble shooting.

A future sustainability plan is already set. It includes structuring more item banks, uploading more questions, improving item banks training, and seeking financial support to upgrade item bank software with better technical support.

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