UPDATE ON MULTIPLE CHOICE QUESTIONS

Useful resources on MedEdWorld

Dr Catherine Kennedy, AMEE Projects Officer

GLOSSARY

Multiple Choice Questions: ‘Multiple Choice Questions (MCQs) have been a common means of written assessment in medical education for many years. They are suitable for use in areas where objectively correct answers can be ascertained, such as the basic sciences and some clinical scenarios. In general MCQs are designed with a stem – a question or scenario – and a set of responses. MCQs can be implemented in a variety of ways including:

• Single best option - a student is expected to select the best response from a range of 4-5 possible options;
• Multiple true/false questions – a student has to assess a number of statements relating to the question as either being true or false;
• Extended matching questions – students answer a series of questions relating to a scenario by selecting responses from an extended list of approximately 20 options.

MCQs have a range of advantages, such as enabling examiners to cover a large degree of content, and are increasingly easy to administer and score using computers. However, designing valid questions and responses is a demanding skill that can be time consuming, and criticism has been made that they do not assess higher-order learning and analytic skills. Further discussion of MCQs and their advantages and disadvantages can be found in our Glossary.


WEBINARS

Hour-long interactive presentations with experts in medical education

Developing High-quality Single-Best-Answer MCQs to Assess Application of Knowledge Using Patient Vignettes
Presenters: Kathy Holtzman and Dave Swanson
Host Institution: National Board of Medical Examiners, USA

This webinar focuses on writing high-quality MCQs using patient vignettes that go beyond testing recall of isolated facts to assess application of basic science and clinical knowledge in decision making.

The manual provides an overview of item formats, concentrating on the traditional one-best-answer matching formats. It reviews issues related to technical item flaws and item content; statistical indices of item quality after test administration; and standard-setting.


An update and development of Developing and Developing Multiple-Choice Items (3rd Ed.) (Haladyna, 2004), this book provides a comprehensive resource for the development and validation of multiple-choice question items and constructed response question formats.


This book addresses major issues in constructing test items by highlighting: the characteristics and functions of test items; editorial guidelines for writing test items in all of the commonly used item formats; methods for determining the quality of test items; procedures for ordering items in a test; item scoring schemes; and computer-generated items.


This guide examines the more commonly used methods of standard setting, illustrates the procedure used in each with the help of an example, and discusses the advantages and disadvantages associated with the use of each.


This paper provides a simple guideline that will assist with the production of high-quality multiple-choice papers.


This article reviews the literature on MCQ testing and the perceptions that they can be ‘unfair’. The article explores these concerns before making a series of practice points for conducting fair and defensible MCQ examinations.


This paper describes a strategy to develop an EB/CDM MCQ test database guided by educational theory and used psychometric analyses, including reliability, validity, and item analyses, to judge the strategy’s success.


This study was designed to assess the effectiveness of Modified Essay Questions (MEQs) to measure higher-order cognitive skills in an undergraduate institution.


Clinical practitioners require insight, the ability to judge their personal capability, and foresight the ability to predict the potential consequences of the actions they suggest.


This article describes an empirical study contrasting the quality of three 60 item multiple-choice test forms within the Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG) Fetal Surveillance Education Program (FSEP).


Date: 2012
Author: Intercollegiate Speciality Boards
This guide provides a range of useful information for the development of MCQs, including Single Best Answer (SBA) and Extended Matching Item (EMI) formats.

This software offers a toolkit for developing, managing and maintaining examination questions, as well as generating detailed analysis on question performance.

Questionmark www.mededworld.org/Learning-Technology/Equipment-Items/Questionmark-Enables-measurement-of-knowledge,-ski.aspx
Questionmark’s technologies and services enable organizations to measure knowledge, skills, and attitudes securely for certification, regulatory compliance and successful learning outcomes.

Hot Potatoes www.mededworld.org/Learning-Technology/Equipment-Items/Hot-Potatoes.aspx
The Hot Potatoes suite includes six applications, enabling you to create interactive multiple-choice, short-answer, jumbled-sentence, crossword, matching/ordering and gap-fill exercises for the World Wide Web.

MCOs http://www.mededworld.org/Forums/f129/14388/MCOs.aspx
Post your queries, ideas and suggestions on MCOs here for discussion with colleagues.

You can also add your recommendations on topics to a forum for upload to the MedEdWorld site.
MedEdWorld was launched by AMEE to help all with an interest in health professions education learn, connect and debate key issues in medical education. Join the MedEdWorld Community by registering as a user for free or joining as a member at:

www.mededworld.org

AMEE members have full and free access to MedEdWorld. Simply login with your AMEE username and password.