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Writing Questions for Continuing Professional Development Manuscripts

Clinical and Experimental Dermatology (CED) has an important focus on dermatological education. Here we discuss some recommendations for writing suitable multiple-choice questions (MCQs) to accompany articles within the Continuing Professional Development categories and aim to highlight their importance.

“Assessment drives learning”¹ is an oft-quoted phrase in medical education, but it assumes that assessment is appropriate and correctly mapped to the desired learning outcomes. Assessment can broadly be divided into that for progression (also known as high-stakes or summative) and that for learning (low-stakes or formative). The aims of assessment for learning include helping the learner to recognise knowledge gaps, encouraging reflection on the material covered to enable deeper learning, embed the content in the memory, and reinforce important learning outcomes of the activity. To answer a question should require completion of a task that allows the reader meaningfully to organise the knowledge into a format with which they are comfortable². We acknowledge that when assessment is optional, some learners may lack the motivation to participate. We remind readers of CED that CPD points can be claimed by completing the end-of-article MCQs.

All too often, the assessment component of an educational programme is produced as an afterthought once the bulk of the content has been decided. We sometimes observe a similar phenomenon in submitted manuscripts, in which the main paper is of excellent quality, but the accompanying MCQs appear to have been put together in a hurry and may

be either flawed or too easy to test the average reader. We hope that our next section will help to guide authors to prepare top-quality MCQs.

A single-best-answer MCQ (SBA) is typically composed of a scenario to set the scene, a lead-in question and a set of five options. One option must be clearly most correct, whilst the four others – the distractors – must be reasonably plausible. The question must map to the desired learning outcomes, a process known as “blueprinting”³. We recommend thinking about the most important learning points to be transmitted from the article and focus on these. The answer must also be contained within the article. In a more sophisticated approach, the text will not directly state the answer but an understanding of it will allow the reader to synthesise the correct response.

Negatively phrased questions (e.g. “which of the following does not occur...” or “the following are true except...”) should be avoided. These tend to act as multiple true/false items rather than SBAs, and can be confusing.

Answer options should be listed in alphabetical order: this avoids the problem of either the top option tending to be the correct one, or authors compensating for this and making the second response correct. Take care also to make the options similar in length – a classic error is to lavish more attention on the correct response, making it longer and more specific (and sometimes even more grammatically correct) than its distracting counterparts⁴. CED also requires an explanation for each possible answer, whether correct or incorrect. Please include these, or your manuscript will be returned to you for correction.

Finally, it should be acknowledged that writing good MCQs is difficult. It is often helpful to go back after a day or two to check the items, and then ensure that co-authors have analysed and approved them.

By following a few simple steps when writing questions, the primary aim of CPD can be reinforced:

- Decide the learning outcomes in advance of writing the manuscript
- Pay special attention in the text to points you want to get across
- Map the questions to reinforce the learning outcomes
- Put answers in alphabetical order after writing them
- Select incorrect answers carefully to drive home learning points

- Check the questions and ask co-authors specifically to do so too

Example MCQs

Question 1

After preparing a workshop on atopic dermatitis for medical students, a dermatology registrar wishes to ensure that the accompanying questions ask about topics mentioned in the curriculum and in the learning materials. The learning outcomes in the curriculum were scrutinised before writing the questions.

What term is used when the question is tailored to a learning outcome?

- a. Blueprinted
- b. Focused
- c. Increased reliability
- d. Increased validity
- e. Top loaded

Answer

- a. Correct. Blueprinting is defined in the above text and refers to mapping a test item to an intended learning outcome.
- b. Incorrect. Whilst focused might be applied and would seem reasonable, it is not the official term or the best response.
- c. Incorrect. Reliability refers to the reproducibility of an assessment method and not tailoring to the curriculum.
- d. Incorrect. Validity refers to how well a test measures what is intended to be assessed.
- e. Incorrect. Top loaded is another term used in education, referring not to assessment but to advanced information delivery to allow for more details to be made clear later.

Question 2

Which of the following characteristics is most desirable in an SBA question?

- a. At least one plausible distractor
- b. Distractors which are partially true
- c. More detail in the correct response than the distractors
- d. Negatively phrased question
- e. Randomised order of the options

Answers

- a. Incorrect. If only one distractor is plausible, the question acts as a best-from-two decision rather than the intended best-from-five, making it much easier. Question writers should aim for all four distractors to appear plausible at some level.
- b. Correct. Unlike multiple true/false questions in which options must be wholly true or wholly false, shades of grey are useful in an SBA, though one option must clearly be the most accurate response.
- c. Incorrect. Including more detail or specificity in the correct response than the distractors can make the answer stand out to the experienced test-taker. Options should be of similar length and complexity.
- d. Incorrect. Negatively phrased SBAs usually act as true-false questions; they can test knowledge, but are not good for assessing understanding or synthesis of information.
- e. Incorrect. Options are conventionally listed in alphabetical rather than random order.

References

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