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Multiple choice question responses: beyond just right or wrong

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Multiple choice questions (MCQs) are a tempting alternative to constructed response questions, especially when large numbers of students are being examined, because of their potential to save labour during marking [1]. However, one major criticism of the MCQ is that it lacks a mechanism to award 'partial marks'. Moreover, it is limited in its ability to assess understanding, or the candidate's ability to produce anything.

The candidate who chooses a partly correct answer is indistinguishable from an entirely incorrect choice, yet these are usually awarded the same marks in most MCQ-based examinations – i.e. zero. There exists a way to award different marks to each option in an MCQ, depending on the seriousness of the error resulting from the choice. Alternative options are distractors intentionally designed to follow logically from an anticipated error, which makes it possible to award a different mark to each distractor according to the magnitude and/or importance of the error concerned. The magnitude and/or importance of error is linked to the question of whether the mistake is one of principle, procedure, execution or communication.

The feasibility of doing this depends on the practicalities of marking – it is possible to do it manually, although the extra labour almost defeats the purpose of using MCQ as an assessment method. Computer-based systems need to be more sophisticated than the norm if they are to cope with the demand presented here.

In the School of Physics at Wits, the assessment of MCQ responses is being evaluated using a marking programme developed by one of our co-authors, which allows the execution of MCQ examinations as described above. A number of examples will be demonstrated and discussed.

References

[1] Dufresne et al., *The Physics Teacher*, 40 (2002) 174.

Apply to be considered for a student award (Yes / No)?

No

Level for award (Hons, MSc, PhD, N/A)?

N/A

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