

Opening up multiple choice: Assessing with confidence

Jon Rosewell

Dept Communication & Systems, MCT


J.P.Rosewell@open.ac.uk



The Open University

Closed multiple choice question

What is the meaning of this road sign?




- Youth hostel
- Hazardous load
- Motorway diversion

Benefits	Drawbacks
Objective marking Reliable marking Easy to implement	Distractors may be trivial Distractors may engender misconceptions Working backwards

Open confidence-based question

What is the meaning of this road sign?



Confidence: ▼

Score:	correct	wrong
1	0	
2	-2	
3	-6	

- Youth hostel
- Hazardous load
- Motorway diversion

Confidence must be set **before** options are revealed

Benefits	Drawbacks
Open question Encourages reflection & self-assessment	Intimidating? Depends on personality? Open variant not always applicable

Multiple Choice Questions (MCQ)

Basic fare of e-assessment:

- Robust, easy to implement
- But pedagogically not ideal

Open questions:

- Pedagogically preferable
- Difficult to provide robust and valid marking

Confidence-Based Marking (CBM)

Student selects:

- Answer **and** level of confidence/certainty

Marks awarded:

- Confidently correct: Full credit
- A tentative correct answer: Some credit
- Cocksure & wrong: Penalty!

CBM motivations

- Rewards care and effort
- Greater engagement
- Encourages reflective learning & self-assessment

Open CBM: two-stage question

Initially:

- Question (but no MCQ options)
- Student sets confidence level

Next:

- MCQ options revealed

Finally:

- Marking and feedback as for normal MCQ / CBM

Open CBM advantages

Mechanically, question remains simple MCQ

- Answer matching trivial
 - Easy to implement
 - Possible to reuse existing question banks
- But* have transformed closed to open question
- Student must formulate answer first
 - Must decide answer without +ve or -ve clues
 - Cannot work backward
 - Will not be led into misconceptions

Therefore must answer the question as set

Project plan

- Implement open CBM question type in OpenMark
- Trial in T216 *Cisco networking* as formative quizzes
- Paired design: same bank of questions presented:
 - in MCQ format
 - in Open CBM format

Measures:

- Assignment scores
- Time spent on task
- Interviews to probe attitudinal aspects

Possible benefits

- Better engagement
- More reflective learners
- Improved learning