Opening up multiple choice: Assessing with confidence

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Closed multiple choice question

What is the meaning of this road sign?

- Youth hostel
- Hazardous load
- Motorway diversion

Benefits
- Objective marking
- Reliable marking
- Easy to implement

Drawbacks
- Distractors may be trivial
- Distractors may engender misconceptions
- Working backwards

Open confidence-based question

What is the meaning of this road sign?

Confidence: Low
Medium
High

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

- Youth hostel
- Hazardous load
- Motorway diversion

Benefits
- Open question
- Encourages reflection & self-assessment

Drawbacks
- 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