Exploring question-feedback models in online assessment resources

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Workshop structure

• Introduction – Presentation – quick overview

• Questions and feedback
  1. Diagnostic test – Demonstration - hands on
     – Discussion
  2. Sequencing questions – Demonstration - hands on
     – Discussion
  3. Resistor network – Demonstration - hands on
     – Discussion

• Tools and sustainability

• Discussion – how could you use these models in your teaching?
Background

• 4 small projects
  • Using QTI V2.1
  • Formative assessment
  • Diagnostic test
  • Explore possibilities of QTI assessment resources

• PhD research – prototype authoring tool
Preparation for Demos

• Go to http://qti-support.gla.ac.uk/ltidemo
• Enter your name and email address – this info is only used for the current session, it isn’t stored
• Click on “QTIWorks demonstration examples”
• You should see a list of links to demo resources – if not, let me know!
Demo 1: Diagnostic Test

• Questions
  • Randomised Maths questions
  • Multiple choice
    • Correct answer
    • 2 distractors
    • “I’ve forgotten…”
    • “I’ve never seen this before”

• Feedback
  • Links directly to online revision material
  • Different for each selected answer
  • Correct answer gets a link too, to reinforce student’s reasoning

• Test Feedback
  • Contains the links relating to the student’s responses
  • Can be downloaded for future reference

• Try a short diagnostic test on adding fractions – “Diagnostic Test Demo - Adding Fractions”
Discussion 1: Diagnostic Test

• Questions?
• Application to your teaching?
Demo 2: Sequencing Questions

- Questions
  - Ordering exercise
  - With distractors—options that should not be in the sequence

- Feedback
  - Allows for options that can occur in alternative order
  - Marks for selecting correct options
  - Marks for correct order (this option before/after that)

- Usage
  - Previously delivered as scanned paper-based exercise, now via Moodle
  - Authoring tool developed, enabling students to create their own questions (demo later)
  - Students can upload their questions for others to try

- Try some Sequencing Questions on the demo page (you can try each one several times—click Reinitialise to start again, options are reordered each time)
  - “Sequencing Question Demo - Malaria”
  - “Sequencing Question Demo - Student as Author”
  - “Sequencing Question Demo - Mathematical Proof”
Discussion 2: Sequencing Questions

• Questions?
• Application to your teaching?
Demo 3: Randomised Diagrams

• SVG diagrams work in QTI, can show randomised values
• Questions
  • Resistor network – randomised resistor values
  • Try the demo question “SVG Demo - Resistor Network” – click Reinitialise for new values
    • Show resistor values on diagrams
    • Can choose
      • Description of how to do the question
      • Worked solution
      • Work through steps, or
      • Give final value immediately
  • Feedback
    • Diagrams show resistor values at each stage
    • Original QTI question by Dick Bacon
• Laplace Transforms - randomised graphs (step functions)
• Try the demo questions “SVG Demo - Laplace Transform ....” – click Reinitialise for new values
  • Show graph
  • Identify function or give Laplace transform – maths expression input
  • Feedback
    • Show interpretation of input
    • Report on errors identified in maths expression
Discussion 3: Randomised Diagrams

• Questions?
• Application to your teaching?
Student & Staff Experience - Biology

• Sequencing questions in Biology used for many years as exam questions
  • Paper-based, off-line marking by scanning
  • Automated but slow feedback

• Try online sequencing questions via Moodle
  • Model question developed and tested
  • Immediate feedback, retry, etc...
  • Authoring tool developed, made available this year after exams

• Little feedback from students
  • Generally positive about online sequencing questions
  • Only one had tried authoring – intro during class time would help
Tools and Sustainability

• Authoring tool demo
  • Authoring tool at http://learn.gla.ac.uk/niall/QTIWizards/
  • Download Sequencing Question authoring instructions at http://e-learning-services.org.uk/media/media/documents/SeqQuesAuthoringToolIntro.pdf

• Create sequencing questions; choice-with-certainty, etc., coming soon
Discussion

• How could you use these resources in your teaching?