Examining Park’s (2005) Computer Modified Multiple-Choice Testing Procedure
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Background

- Testing can be used to enhance retention of information.
- Previous research has shown that production tests, such as cued recall (CR), produce better long-term retention on a final test than recognition tests, such as multiple-choice (MC).
- However, educators often prefer to use multiple-choice tests because they are objective and easy to grade.
- Recently, Park (2005) introduced a hybrid procedure called Computer Modified Multiple-Choice Testing (CMMT) that combines the mnemonic benefits of a cued recall test with the objectivity of a multiple-choice test.

**Purpose:** The present research was designed to replicate and extend Park’s (2005) findings.

Method

**Materials:**
E1: 60 general knowledge questions
E2: 12 short prose passages (approx. 300 words / passage) and 48 questions about the passages (4 / passage)

**General Procedure:**

**Day 1:** Study texts (E2 only) and take initial test (w/ confidence judgment)

**Initial Test Procedures:**
- MC: 1. Present Q + Alternatives 2. Press Spacebar 3. Enter Response (5 sec limit) 4. Rate confidence (20-100)
- CMMT: 1. Present Q only 2. Press Spacebar 3. Present Q + Alternatives and Enter Response (5 sec limit) 4. Rate confidence (20-100)
- CR: 1. Present Q only 2. Press Spacebar 3. Enter Response (20 sec limit) 4. Rate confidence (0-100)

**MC and CMMT:** E1 = 4AFC, E2 = 5AFC

**Day 8:** Take final test (w/ confidence judgment)

**Note:** Subjects were no longer required to press spacebar

**Design/Manipulations:**
1. Type of Initial Test: MC, CMMT, CR (between-subjects)
2. Testing Condition: (within-subjects)
   - No Test (subset of items never tested on initial test)
   - Test w/ No Feedback (“loading next item” presented for 8 seconds)
   - Test w/ Feedback (immediate feedback presented for 8 seconds)
3. Type of Final Test: MC, CR (within-subjects)

Conclusions

- On both the final CR and MC tests, taking an initial test with feedback led to better performance than taking a test without feedback, regardless of initial test format (and a benefit of taking an initial test relative to no test also emerged in E2).
- On the final CR test, both the initial MC and CMMT test conditions produced better final test performance than the CR condition without feedback, but the initial CMMT and CR test conditions led to better performance than the MC condition with feedback.
- On the final MC test, taking an initial MC, CMMT, or CR test all produced similar final test performance without feedback, but the initial CR test condition led to best performance with feedback.
- Overall, taking an initial CMMT test produced better retention relative to multiple-choice and similar retention relative to cued recall on a delayed final test when feedback was given.

**Practical Implications for Education:** The results indicate that CMMT produces slightly better retention than MC when feedback is given, making it a viable option for the classroom.

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