

STUDENTS PREFER THE IMMEDIATE FEEDBACK ASSESSMENT TECHNIQUE¹

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Summary.—Students responded to a questionnaire after completing classroom examinations using either Scantron forms or the Immediate Feedback Assessment Technique. Factor analysis of students' responses yielded six scales unrelated to students' grades and not differing by sex, course, or instructor. Students evaluated on the latter technique scored significantly higher on scales measuring ease of understanding and ease of completing response requirements, perceived fairness of and preference for an answer-until-correct procedure, and enhanced involvement in the test-taking process.

Epstein and his colleagues recently reported on the effectiveness of an answer-until-correct test, the Immediate Feedback Assessment Technique (Epstein, Epstein, & Brosvic, 2001; Epstein, Lazarus, Calvano, Matthews, Hendel, Epstein, & Brosvic, in press). The technique was designed for use with both small and large groups across a wide range of assessment situations, especially academic settings in which the multiple-choice test is the modal medium for assessing students' learning.

The answer-until-correct procedure actively engages learners in the correction of initially inaccurate responses, plays a crucial role in the acquisition of information, aids incorporation of accurate information into cognitive processes, and permits retrieval of correct answers during retention tests. In our prior studies (Epstein, *et al.*, 2001; Epstein, *et al.*, in press) students evaluated with Scantron forms typically have significantly lower retention and repeat more initial mistakes on subsequent examinations than students tested initially with the answer-until-correct technique. In the present study, we compared the satisfaction of students evaluated in psychology courses with either the Immediate Feedback Assessment Technique or Scantron forms.

METHOD

Participants

Questionnaires were complete by 159 undergraduates enrolled in psychology courses. The modal participant was a Euro-American women enrolled in the liberal arts program.

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Measures

Participants responded to multiple-choice examinations during one semester using one of two response formats, the Scantron form used for control purposes or the Immediate Feedback Assessment Technique. Responses on the former were made by darkening a predetermined space with a pencil. The latter is a multiple-choice answer sheet with 50 rows of rectangular answer spaces, e.g., A, B, C, D, E, which is nearly identical in layout to the Scantron form. Participants scrape off an opaque, waxy coating covering an answer space to record an answer. If a symbol, e.g., a star, is printed beneath the covering the student receives instant feedback that a correct choice was made. Absence of a symbol provides instant feedback that an incorrect choice was made. However, rather than simply exiting the question, the participant reviews the remaining response options and continues to respond until the correct answer is discovered. At the end of the semester all participants completed a 15-item questionnaire assessing perceptions of the testing process and materials, using for each item anchors of 1: much less and 5: much more.

RESULTS

Test grades did not differ between the response formats by sex, course, or instructor (all t s < 0.92). Responses to the 15 items were simplified using factor analysis with orthogonal rotation. Six factors were identified (all Cronbach alphas $\geq .65$), with a summary scale formed by averaging responses to the items with a minimum loading of .5.

Test anxiety (1 item) assessed anxiety during testing. Enjoyment of testing (2 items) assessed satisfaction with response format and amount of pleasure experienced during testing. Time requirements (2 items) assessed amount of time needed to prepare for and complete the test. Clarity of response requirements (2 items) assessed ease of understanding and ease of completing response requirements. The desirability of the response format (2 items) assessed the fairness of and preference for response format. The benefits of the testing process (6 items) assessed concentration expended and logical thinking required during the test, perceived learning during the test, retention of learning after the test, reduced potential for cheating, and immediate feedback on test performance.

The scales measuring enjoyment of testing, benefits of testing, and desirability of the response format were intercorrelated (all Pearson r s $> .48$, p s $< .05$). Potential differences in responses to the six factor scales between the two response formats were assessed using between-group t tests. Mean responses on the scales measuring test anxiety, time requirements, and satisfaction with response format did not differ by response format (all t s₁₄₆ < 0.60). Mean responses on the scales measuring the clarity of response re-

quirements (IF AT: $M=3.9$, $SD=.7$; Scantron: $M=3.0$, $SD=.9$), the desirability of the response format (IF AT: $M=4.2$, $SD=.5$; Scantron: $M=3.6$, $SD=.9$), and the benefits of testing (IF AT: $M=4.1$, $SD=.7$; Scantron: $M=3.0$, $SD=1.0$) were significantly higher for students evaluated with the Immediate Feedback Assessment Technique (all $t_{145} > 3.01$, all $ps < .05$).

DISCUSSION

The design of the answer format did not affect responses on the scales measuring the amount of time required to prepare for and complete a test, the amount of enjoyment during the testing process, or the amount of anxiety experienced during testing. The answer-until-correct format of the Immediate Feedback Assessment Technique showed higher reported clarity and ease of completing response requirements, concentration and logical thinking during testing, perceived fairness of and learning during testing and retention of learning, and reduced perceived potential for academic dishonesty. Collectively, these responses indicate that students recognized the advantages of an answer-until-correct process that makes test-taking part of the learning process. These perceptions were confirmed by the enhanced retention and correction of initially inaccurate responses reported in our prior studies (Epstein, *et al.*, 2001; Epstein, *et al.*, in press).

REFERENCES

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Accepted May 6, 2002.