

DOCUMENT RESUME

ED 403 273

TM 025 944

AUTHOR Friedman-Erickson, Sharon
 TITLE To Change or Not To Change: The Multiple Choice Dilemma.
 PUB DATE Jun 94
 NOTE 10p.; Paper presented at the Annual Institute of the American Psychological Society on the Teaching of Psychology (Washington, DC, June 1994).
 PUB TYPE Reports - Evaluative/Feasibility (142) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
 DESCRIPTORS Community Colleges; *Guessing (Tests); *Multiple Choice Tests; *Responses; Testing Problems; *Test Items; Test Wiseness; Two Year Colleges; *Two Year College Students
 IDENTIFIERS *Answer Changing (Tests); Choice Behavior

ABSTRACT

Study skills books sometimes give conflicting advice concerning whether or not students should change their initial responses to multiple-choice questions about which they are unsure. In contrast, answer-changing research consistently shows that the majority of answer changes are from wrong to right. Responses of 244 community college students to 38,800 multiple-choice items were examined to determine the percentage of responses changed from wrong to right, right to wrong, and wrong to wrong. Results show that more responses were changed from wrong to right than from right to wrong or from wrong to wrong. For the 3 courses studied, 56% of changes were from wrong to right, with 24% from right to wrong, and 20% from wrong to another wrong answer. Change percentages were rather consistent among the three courses. (Contains one table and seven references.) (SLD)

 * Reproductions supplied by EDRS are the best that can be made *
 * from the original document. *

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)

This document has been reproduced as received from the person or organization originating it.

Minor changes have been made to improve reproduction quality.

Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

PERMISSION TO REPRODUCE AND
DISSEMINATE THIS MATERIAL
HAS BEEN GRANTED BY

SHARON FRIEDMAN-ERICKSON

To Change

1

TO THE EDUCATIONAL RESOURCES
INFORMATION CENTER (ERIC)

ED 403 273

To Change or Not To Change:

The Multiple-Choice Dilemma

Sharon Friedman-Erickson

Houston Community College System

Presented at the 1st APS Annual Institute on the
Teaching of Psychology, Washington, DC, June 1994.

Abstract

Study skills books sometimes give conflicting advice concerning whether or not students should change their initial responses to multiple-choice questions they are unsure about. In contrast, answer-changing research consistently shows that the majority of answer changes are from wrong to right. Community college students' responses to 38,800 multiple-choice items were examined to determine the percentage of responses changed from wrong to right, right to wrong, and wrong to wrong. Results showed that a larger percentage of responses was changed from wrong to right than either from right to wrong or from wrong to wrong.

To Change or Not To Change:

The Multiple-Choice Dilemma

"I had the right answer, but I changed it." How often have you heard this tale of woe from students as you reviewed the answers to a multiple-choice test? And how often have you been tempted to reply "Don't change your answers; stick with your first response"?

I have often heard that if one is unsure about an answer to a multiple-choice question, it is best to stay with the first impression. Furthermore, "eyeballing" students' answer sheets has led me to believe that far too many responses are changed from right answers to wrong answers. As a community college psychology instructor, however, I have been hesitant to offer test-taking advice to students without documentation.

I checked several study skills books in the campus library to find out what advice they provide for students taking multiple-choice tests. Most of the books agreed that if one is unsure about the answer to a multiple-choice question, caution should be exercised in changing answers because the first response is often the correct response (Apps, 1982; Crow & Crow, 1963; Deese & Deese, 1979). On the other hand, Feder (1979) referred to this type of advice as "bull-session wisdom." He argued that one should not be afraid to change an answer

if there is some doubt about the first response; many studies show that more answers are changed from wrong to right than from right to wrong. Indeed, over 60 years of answer-changing research uniformly indicates that the majority of answer changes are from wrong to right (cf. Benjamin, Cavell, & Shallenberger, 1984; Mueller & Wasser, 1977).

Paradoxically, there is a widespread belief that students should not change their initial responses to multiple-choice questions, yet the evidence consistently shows that answer-changing has the potential to improve students' test scores. This study examined the direction in which my students changed their answers on multiple-choice tests.

Method

Subjects

The subjects were 244 community college students enrolled in Introductory Psychology, Child Development, and Adult Development classes from 1989 to 1991.

Materials

Multiple-choice questions given on in-class examinations were used. All questions consisted of four alternatives. The total number of multiple-choice questions included in this study was 38,800. There were 23,750 items from Introductory Psychology exams, 14,500

from Child Development exams, and 550 from Adult Development exams.

Procedure

Students recorded their responses in pencil on Scantron answer sheets. All answer sheets were optically scored such that the correct answer appeared to the right of each item. The scored answer sheets were then carefully examined for erasure marks. Each response that had been detectably changed was tallied according to one of three categories: wrong to right, right to wrong, or wrong to wrong. Questionable erasures were not included in the tally procedure.

Results

As indicated in Table 1, only a small percentage of the total number of items was changed. This finding is highly consistent with the proportion of changed answers in previous studies. The average number of responses changed in the answer-changing literature is around 3% (cf. Benjamin et al., 1984; Mueller & Wasser, 1977).

Insert Table 1 about here

Further examination of Table 1 shows that among those items that were changed, a larger percentage of responses was changed from wrong to right than either

from right to wrong or from wrong to wrong. Even when all responses changed to a wrong answer are combined, changing from wrong to right still maintains a slight edge. Moreover, percentages across the three courses are highly consistent. This pattern of results closely approximates that found in the extant answer-changing literature (cf. Benjamin et al., 1984; Mueller & Wasser, 1977). Clearly, research indicates that answer changes are more often from wrong to right than from right to wrong (Hopkins, Stanley, & Hopkins, 1990).

Discussion

These findings support Feder's (1979) claim that staying with an initial response simply because first impressions are probably correct may in fact be nothing more than "bull-session wisdom." Many years of answer-changing research has consistently shown the preponderance of answer changes to be from wrong to right, thus, suggesting that students who change their answers are likely to improve their test scores.

In light of this remarkable consistency, Hopkins et al. (1990) proclaimed that the "changed-answer" myth should finally be dispelled. The odds are in the students' favor when they change an answer they really believe may be wrong to one they really believe may be correct.

References

- Apps, J. W. (1982). Study skills for adults returning to school (2nd ed.). New York: McGraw-Hill.
- Benjamin, L. T., Jr., Cavell, T. A., & Shallenberger, W. R., III. (1984). Staying with initial answers on objective tests: Is it a myth? Teaching of Psychology, 11, 133-144.
- Crow, L., & Crow, A. (1963). How to study: To learn better, pass examinations, get better grades. New York: Macmillan.
- Deese, J., & Deese, E. K. (1979). How to study (3rd ed.). New York: McGraw-Hill.
- Feder, B. (1979). The complete guide to taking tests. Englewood Cliffs, NJ: Prentice-Hall.
- Hopkins, K. D., Stanley, J. C., & Hopkins, B. R. (1990). Educational and psychological measurement and evaluation (7th ed.). Englewood Cliffs, NJ: Prentice Hall.
- Mueller, D. J., & Wasser, V. (1977). Implications of changing answers on objective test items. Journal of Educational Measurement, 14, 9-13.

Author Notes

1. I thank Richard Hamilton for his helpful comments a draft of this article.

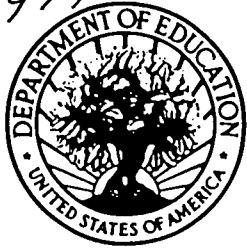
Table 1.

Frequencies and Percentages of Changed Multiple-Choice Responses

| Course | Items | | W-R | | R-W | | W-W | |
|-------------------------|----------|---|----------|----|----------|----|----------|----|
| | <u>f</u> | % | <u>f</u> | % | <u>f</u> | % | <u>f</u> | % |
| Introductory Psychology | | | | | | | | |
| | 882 | 4 | 518 | 59 | 190 | 22 | 174 | 20 |
| Child Development | | | | | | | | |
| | 433 | 3 | 221 | 51 | 123 | 28 | 89 | 21 |
| Adult Development | | | | | | | | |
| | 40 | 7 | 21 | 53 | 9 | 23 | 10 | 25 |
| All Courses | | | | | | | | |
| | 1355 | 3 | 760 | 56 | 322 | 24 | 273 | 20 |

Note. W-R = changed from wrong answer to right answer;
R-W = changed from right answer to wrong answer; W-W =
changed from wrong answer to wrong answer.

TMO25944



U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement (OERI)
Educational Resources Information Center (ERIC)



REPRODUCTION RELEASE

(Specific Document)

I. DOCUMENT IDENTIFICATION:

| | |
|------------------------------------------------------------------------------------|---------------------------------------|
| Title: <i>To Change or Not To Change: The Multiple-Choice Dilemma</i> | |
| Author(s): <i>Sharon Friedman-Erickson</i> | |
| Corporate Source: <i>Houston Community College System Houston, TX 77007</i> | Publication Date: <i>June 1994</i> |

II. REPRODUCTION RELEASE:

In order to disseminate as widely as possible timely and significant materials of interest to the educational community, documents announced in the monthly abstract journal of the ERIC system, *Resources in Education* (RIE), are usually made available to users in microfiche, reproduced paper copy, and electronic/optical media, and sold through the ERIC Document Reproduction Service (EDRS) or other ERIC vendors. Credit is given to the source of each document, and, if reproduction release is granted, one of the following notices is affixed to the document.

If permission is granted to reproduce the identified document, please CHECK ONE of the following options and sign the release below.



Sample sticker to be affixed to document

Sample sticker to be affixed to document



Check here
Permitting microfiche (4" x 6" film), paper copy, electronic, and optical media reproduction

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY _____ *Sample* _____ TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Level 1

"PERMISSION TO REPRODUCE THIS MATERIAL IN OTHER THAN PAPER COPY HAS BEEN GRANTED BY _____ *Sample* _____ TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Level 2

or here
Permitting reproduction in other than paper copy.

Sign Here, Please

Documents will be processed as indicated provided reproduction quality permits. If permission to reproduce is granted, but neither box is checked, documents will be processed at Level 1.

"I hereby grant to the Educational Resources Information Center (ERIC) nonexclusive permission to reproduce this document as indicated above. Reproduction from the ERIC microfiche or electronic/optical media by persons other than ERIC employees and its system contractors requires permission from the copyright holder. Exception is made for non-profit reproduction by libraries and other service agencies to satisfy information needs of educators in response to discrete inquiries."

| | |
|----------------------------------------------------------------------------------------------|--------------------------------------------|
| Signature: <i>Sharon Friedman-Erickson</i> | Position: <i>Lecturer</i> |
| Printed Name: <i>Sharon Friedman-Erickson</i> | Organization: <i>University of Houston</i> |
| Address: <i>Educational Psychology Dept. University of Houston Houston, TX 77204</i> | Telephone Number: <i>(713) 783-3256</i> |
| | Date: <i>July 10, 1995</i> |

Previous Contributor, ERIC/CAPS



OVER

III. DOCUMENT AVAILABILITY INFORMATION (FROM NON-ERIC SOURCE):

If permission to reproduce is not granted to ERIC, or, if you wish ERIC to cite the availability of this document from another source, please provide the following information regarding the availability of the document. (ERIC will not announce a document unless it is publicly available, and a dependable source can be specified. Contributors should also be aware that ERIC selection criteria are significantly more stringent for documents which cannot be made available through EDRS).

| | |
|------------------------|-----------------|
| Publisher/Distributor: | |
| Address: | |
| Price Per Copy: | Quantity Price: |

IV. REFERRAL OF ERIC TO COPYRIGHT/REPRODUCTION RIGHTS HOLDER:

If the right to grant reproduction release is held by someone other than the addressee, please provide the appropriate name and address:

| |
|-------------------------------------------------------------------|
| Name and address of current copyright/reproduction rights holder: |
| Name: |
| Address: |

V. WHERE TO SEND THIS FORM:

| |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Send this form to the following ERIC Clearinghouse: <p style="text-align: center;">ERIC/CASS School of Education Park 101 University of North Carolina Greensboro, NC 27412-5001</p> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

If you are making an unsolicited contribution to ERIC, you may return this form (and the document being contributed) to:

ERIC Facility
1301 Piccard Drive, Suite 300
Rockville, Maryland 20850-4305
Telephone: (301) 258-5500