



**The Read-Recite-Review Study Strategy: Effective and Portable**

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For Review Only

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## Abstract

Two experiments with college students investigated the effectiveness of the 3R (read, recite, review) strategy for learning from educational texts. 3R was compared to rereading and note-taking study strategies on free recall, multiple choice, and short-answer inference assessments at immediate and one-week delayed testing. In Experiments 1 and 2, 3R improved immediate and delayed free recall of relatively short, fact-based passages relative to the rereading and note-taking strategies. In Experiment 2, using longer, more complex passages on engineering topics, 3R also improved multiple choice and problem-solving performance compared to the reread strategy and equivalent performance to that produced by note-taking, though 3R took less study time than note-taking. An inherent advantage of 3R relative to other testing methods like quizzing is that it is under learner control. These results indicate that it is also an efficacious study technique that capitalizes on the mnemonic potency of retrieval and feedback.

### The Read-Recite-Review Study Strategy: Effective and Portable

The preferred study strategies for college students are note-taking (99% of college students report using note taking; Palmatier & Bennet, 1974) and rereading text or notes (Karpicke, Butler, & Roediger, in preparation). Although research shows that note taking is generally effective for learning and retention (Dyer, Riley, & Yekovich, 1979; Einstein, Morris, & Smith, 1985; Fox & Siedow, 1985; Jonassen, 1984), there is a body of empirical work suggesting that retrieval produces robust mnemonic benefits, benefits that exceed that of additional study (see Carpenter & DeLosh, 2006; Carrier & Pashler, 1992; Kang, McDermott, & Roediger, 2007; McDaniel & Masson, 1985; Roediger & Karpicke, 2006). More recently, based on this evidence, there has been excitement for the view that testing (i.e., requiring retrieval) may be an especially effective method for improving learning (McDaniel, Anderson, Derbish, & Morrisette, 2007; McDaniel, Roediger, & McDermott, 2007; Karpicke & Roediger, 2008), with the recommendation that instructors introduce more quizzing into their courses (Leeming, 2002; Pashler et al., 2007).

Thus far, however, the learning benefits of testing have been demonstrated relative to reread control conditions, conditions that do not necessarily reflect typical student study strategies such as note taking. Before enthusiastically endorsing testing as a preferred learning method, it is important to compare its effectiveness and efficiency with that of the commonly used and generally effective student strategy of note taking. Another critical consideration is that a general limitation of the applicability of testing is that it is externally driven. Students will only profit from the advantages of testing in

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3 classes in which instructors are willing to give up valuable class time in order to  
4 administer quizzes. Accordingly, demonstrating the effectiveness of a learner controlled  
5 testing method would have multiple advantages. For instance, this method could be  
6 portable to all learning settings, both formal and informal.  
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12 The learner-controlled testing method that we implemented in this study required  
13 learners to read the text, set the text aside and recite out loud all that they could  
14 remember, and then reread the text a second time (read, recite, review, termed *3R*). This  
15 strategy represents a truncated version of Robinson's (1941) SQ3R (Survey, Question,  
16 Read, Recite, Review) method, which also included pre-reading processes designed to aid  
17 readers' comprehension of the text. Research on the full SQ3R approach has been  
18 sparse; the most rigorous examination was conducted by Martin (1985), who trained  
19 participants in either the SQ3R method or the REAP (Reader-Specific Practice) method,  
20 a competing study technique also aimed at improved text comprehension. After training  
21 participants for nine weeks, Martin found that the SQ3R group performed significantly  
22 better than the REAP group on measures of reading comprehension. In general, the few  
23 studies have used extensive training procedures and shown mixed results (see Adams,  
24 Carnine, & Gersten, 1982; Darch, Carnine, & Kameenui, 1986). An exception to the  
25 extensive training is an experiment in which subjects were instructed to study a 10-  
26 paragraph passage by reading, covertly recalling, and reviewing one paragraph at a time  
27 (Orlando & Hayward, 1978). This 3R procedure produced improved performance on an  
28 immediate but not a delayed short-answer test compared to subjects who read the passage  
29 twice in succession. There were no differences on the short-answer test relative to  
30 subjects who read and took notes on the passage.  
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Though the extant experimental evidence favoring the 3R method is inconclusive and limited at best, there are several potential benefits of the 3R procedure that suggest it should be quite effective. First, 3R is easier to teach to students than the full SQ3R method and less effortful for students to apply. Second, the 3R strategy incorporates retrieval shortly after study, a condition that maximizes the amount of information retrieved (cf. Kang et al., 2007). A third potential benefit of 3R is that the recitation phase provides an assessment for the learner that can be used to guide his or her efforts during review (rereading). This may be particularly important as previous research has shown that rereading has minimal benefits in the absence of assessment (Callender & McDaniel, 2008). Finally, a fourth benefit is that the second reading provides immediate feedback on the free recall test. Because immediate feedback has been shown to bolster the testing effect (Pashler, Cepeda, Wixted, & Rohrer, 2005; McDaniel & Fisher, 1991), it is likely that this component further augments the benefits of the 3R strategy.

### *Experiment 1*

In the first experiment, we contrasted the 3R study condition against two conditions that are reflective of study activities that college students typically implement. In one condition participants read the text twice. Rereading is one of the more common study methods students report using (Carrier, 2003; Goetz & Palmer, 1991), and indeed in a survey of 170 students at a select private institution 55% listed rereading as their number one strategy (Karpicke et al., in preparation). In the other condition participants took notes during their readings of the text. As mentioned earlier this is also a commonly used study strategy and one that typically produces learning benefits. The effects of these

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3 different strategy conditions were evaluated on free recall, multiple choice, and inference  
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6 criterial tests.

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8 *Method*

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10 *Design and participants.* The participants were 72 undergraduates enrolled in a  
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12 psychology course at the Washington University in St. Louis who participated in partial  
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14 fulfillment of a course requirement or for a payment of \$15. Twenty-four students were  
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16 randomly assigned to each of the three study conditions. The *reread-only* group read the  
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18 passage twice without any other activities; the *note-taking* group read the passage twice  
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20 and took notes on a separate sheet of paper during reading; and the *3R* group read the  
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22 passage once, engaged in an immediate verbal free recall test, and then read the article a  
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24 second time.  
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29 *Materials.* Each participant read four brief prose passages taken from a test  
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31 preparation book for the Test of English as a Foreign Language (Rogers, 2001). Each  
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33 passage was divided into 30 idea units or propositions, contained between 221 and 283  
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35 words, and did not vary on average free recall or reader interest levels (Karpicke,  
36  
37 unpublished data). The order in which participants read the passages was  
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39 counterbalanced.  
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44 *Procedure.* Participants were told that they would read each of the four passages  
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46 first and that they would only be tested after all four articles were read. They were then  
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48 given study instructions pertinent to their condition. Participants in the *note-taking* group  
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50 were instructed to read the passage twice and to take notes on the passage while they  
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52 were reading. They were told that the notes were only to help their memory for the  
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54 material and that they would not be allowed to use their notes on the final tests.  
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3 Participants in the *3R* group were told that they would read the passage once, followed by  
4 a recitation phase in which they would recite as much as they could remember from the  
5 article into a tape recorder, followed by a second reading of the passage. Finally,  
6 participants in the *reread-only* group were simply instructed to read the passage twice.  
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8 All groups were given as much time as they desired to read the passages.  
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15 After receiving the appropriate instructions, participants read the four passages.  
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17 Next, they completed three min of arithmetic problems on a computer and completed a  
18 basic demographics questionnaire. For the first and third articles read, participants then  
19 completed a free recall test, a multiple-choice test (consisting of 6 four alternative-choice  
20 questions), and 3 short-answer inference questions (that required the participant to  
21 synthesize two or more ideas from the article in order to provide the correct answer) in  
22 that order.  
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32 Finally, participants returned after one week and completed the same three tests  
33 on all four articles. Thus, after the one week delay participants were re-tested on two of  
34 the articles and were tested for the first time on the other two articles.  
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### 39 Results

40 All statistical tests were carried out at the .05 level of significance. Effect sizes  
41 are reported in terms of partial eta squared ( $\eta_p^2$ ). Means for test performances are  
42 displayed in Table 1.  
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48 *Study time.* Total processing time (reading or reading plus recitation in the 3R  
49 group) across the four texts was tabulated for each participant. (Due to experimenter  
50 error, study times were not available for two participants in the note-taking group and one  
51 participant in the reread only group.) A one way analysis of variance (ANOVA) on  
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3 these data indicated that there was a significant effect of study condition on study time,  
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6  $F(2, 66) = 10.89, \eta_p^2 = .25, p < .001$ . LSD post-hoc analyses revealed that participants in  
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8 the note-taking condition spent a significantly greater amount of time studying (reading  
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10 plus taking notes) the passages ( $M = 17.5$  minutes) than participants in the 3R (reading  
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12 plus reciting) ( $M = 13.5$  minutes;  $p < .05$ ) and reread-only ( $M = 9.2$  minutes;  $p < .001$ )  
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14 conditions. As well, study time was significantly longer in the 3R than the reread-only  
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16 condition ( $p < .05$ ).  
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20 *Free recall.* The average proportion of idea units correctly recalled from the two  
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22 texts in each experimental condition was tabulated for each participant (out of 60), and  
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24 these data were submitted to a 3 (study condition) x 2 (time of initial test; note that the  
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26 one-week delayed performance is for texts not tested immediately) mixed ANOVA. As  
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28 expected, recall was significantly higher when testing was immediate than delayed,  $F(1,$   
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30  $69) = 328.70, \eta_p^2 = .83, p < .001$ . More importantly, study condition significantly  
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32 influenced recall levels,  $F(2, 69) = 10.80, \eta_p^2 = .24, p < .001$ , and this main effect did not  
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34 interact with testing time ( $F < 1$ ). LSD post-hoc analyses indicated that the 3R group  
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36 performed significantly better than each of the other two study conditions ( $p$ 's  $< .05$ ).  
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38 There was no significant difference in recall between the note-taking and reread  
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40 conditions.  
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46 To more directly evaluate the influence of 3R on retention, we focused on the  
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48 delayed free recall performances using a 3 X 2 mixed ANOVA with study condition as  
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50 the between-subjects factor and whether the participant had taken an immediate test on  
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52 the content as the within-subjects factor. This analysis indicated that participants' free  
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54 recall was better when an immediate test preceded the one-week delayed test than when  
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there was no immediate test (i.e., a testing effect),  $F(1,69) = 165.10$ ,  $\eta_p^2 = .70$ ,  $p < .001$ .

There was again a significant main effect of study condition  $F(2,69) = 11.42$ ,  $\eta_p^2 = .25$ ,  $p < .001$ , such that participants in the 3R group demonstrated significantly higher recall levels than did participants in the reread-only and note-taking groups (as indicated by LSD analyses;  $p$ 's  $< .001$ ). This effect did not interact with prior testing.

*Multiple choice.* The proportion of correct multiple choice responses was analyzed with ANOVA's paralleling those described above. Performance was better for the immediate test than the one week delayed test (with no prior initial test),  $F(1, 69) = 57.93$ ,  $\eta_p^2 = .46$ ,  $p < .001$ . However, there was no effect of study condition ( $F(2, 69) = 1.04$ ) and no interaction between the factors ( $F < 1$ ).

For the delayed testing, there was a significant testing effect,  $F(1, 69) = 45.44$ ,  $\eta_p^2 = .40$ ,  $p < .001$ , such that one week delayed multiple choice performance was higher for material that had been previously tested than material not previously tested. There was no main effect of study condition ( $F(1, 69) = 1.52$ ) and no interaction between prior testing and study condition ( $F < 1$ ).

*Short answer inference.* The 3 X 2 mixed ANOVA revealed a significant effect of testing time,  $F(1,69) = 24.93$ ,  $\eta_p^2 = .26$ ,  $p < .001$ , as participants performed better on immediate than delayed testing. Paralleling the multiple choice analysis there was no effect of study condition ( $F < 1$ ), and no significant interaction between study condition and testing time ( $F(2, 69) = 2.44$ ). For delayed testing, there was a significant testing effect,  $F(1,69) = 21.54$ ,  $\eta_p^2 = .24$ ,  $p < .001$ . There was no effect of study condition and no interaction between prior testing and study condition (largest  $F = 1.40$ ).

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*3R recitation performance.* The verbal recitation phase of the 3R procedure was scored for the proportion of idea units recalled. Participants recalled between 10.0% to 80.8% of the idea units, with a mean of 52.4% recalled. Mean recall during the verbal recitation phase was significantly less than mean free recall at immediate testing,  $F(1, 23) = 11.78, \eta_p^2 = .34, p < .005$ , indicating that participants in the 3R condition did learn more information about the article during the second reading. A conditional probability analysis was conducted to determine the likelihood that an item recalled during the recitation phase would also be recalled during the initial free recall test. This analysis indicated that a recited item had a likelihood of 87.5% to be recalled on the immediate free recall test, while a non-recited item had a 37.8% likelihood of being recalled.

*Note-taking performance.* The notes taken by the participants in the note-taking group were analyzed for the quantity of idea units noted. Participants noted between 2.0% and 93.3% of the total idea units, with a mean of 40.3%. A conditional probability analysis was also conducted to determine the influence that noting a particular idea unit had on the probability that that idea unit would be recalled during immediate free recall. Noted ideas were recalled at a rate of 75.4% while non-noted ideas were recalled at a rate of 31.6%.

The most notable finding of Experiment 1 was the significant benefit to free recall performance displayed by participants in the 3R group relative to those using rereading and note taking strategies. These free recall benefits for immediate testing and for testing after a week-long delay of both previously tested and previously untested material represent the first report of such advantages for 3R (cf. Orlando & Hayward, 1978).

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3 However, the benefits of the 3R strategy did not extend to multiple choice or short  
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5 answer inference questions.  
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## 8 Experiment 2

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10 Experiment 1 was conducted using four short, simple passages that consisted  
11 entirely of factual information. In the present experiment, we explored whether the  
12 benefits of the 3R strategy might extend to criterial measures other than free recall, when  
13 the learning materials were passages that were more relationally complex. For these  
14 types of passages, Mayer and Gallini (1990) demonstrated that provision of schematic  
15 illustrations designed to promote learning of a mental model of the text's meaning  
16 produced benefits on inference measures. It seems reasonable that recitation and review  
17 may encourage the development of more cohesive mental models and thus produce  
18 benefits beyond free recall to inference and problem solving.  
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### 31 Method

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34 *Design and participants.* The participants were 72 undergraduates enrolled in  
35 psychology courses at the Washington University in St. Louis who participated in partial  
36 fulfillment of a course requirement or for a payment of \$15. Twenty-four students were  
37 randomly assigned to each of the same three study conditions used in Experiment 1 (*note-*  
38 *taking, 3R, and reread-only*).  
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46 *Materials and procedure.* Each participant read two passages taken from articles  
47 in *The World Book Encyclopedia* and used by Mayer & Gallini, 1990). The "Pumps"  
48 passage consisted of 93 idea units and 864 words, and the "Brakes" passage consisted of  
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Participants in all three conditions were told that they would be reading two educational texts and were then given the study instructions used in Experiment 1. Next, participants read the articles in a self-paced fashion, and the order of the articles was counterbalanced in each study condition. Participants then completed three minutes of arithmetic problems on a computer and completed the demographics questionnaire. For the first passage read, participants then were given (1) a free recall test, (2) a multiple choice test containing eight four-alternative forced-choice questions, four of which tested factual knowledge and four tested inferential knowledge, and (3) problem solving items consisting of four short-answer inference questions (e.g., “What could be done to make brakes more effective, that is, to reduce the distance needed to stop;” see Mayer & Gallini, 1990, for further examples). Finally, participants returned after one week and completed all three tests for both passages. Thus, after the one week delay the participants were re-tested on one of the articles and tested for the first time on the other article.

## Results

*Study time.* A one-way ANOVA indicated that there was a significant effect of study condition on time spent studying the passages,  $F(2, 67) = 4.15$ ,  $\eta_p^2 = .11$ ,  $p < .05$ . LSD post-hoc analyses revealed that participants in the note-taking condition spent significantly more time reading the passages ( $M = 25.4$  minutes) than those in the 3R ( $M = 21.5$  minutes) and reread-only ( $M = 20.9$  minutes) groups ( $p$ 's  $< .05$ ).

*Free recall.* Participants' free recall of the passages was scored for the percentage of idea units that were correctly recalled. A 3 (study condition) x 2 (time of initial test) mixed ANOVA analysis indicated that performance was better immediately than at a

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3 delay,  $F(1, 69) = 125.79$ ,  $\eta_p^2 = .65$ ,  $p < .001$  (see Table 2 for means). There was also a  
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5 significant effect of study condition,  $F(2, 69) = 13.14$ ,  $\eta_p^2 = .14$ ,  $p < .05$ . LSD post-hoc  
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7 analyses indicated that the 3R group performed significantly better than the note-taking  
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9 and reread-only groups ( $p$ 's  $< .05$ ). Performance for the reread-only group and the note-  
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11 taking group did not significantly differ.  
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15 As in Experiment 1, a 3 X 2 mixed ANOVA was conducted to investigate the  
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17 effects on free recall after one week, both with and without an immediate recall test. This  
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19 analysis revealed that immediate testing enhanced delayed recall,  $F(1, 69) = 39.23$ ,  $\eta_p^2 =$   
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21  $.36$ ,  $p < .001$ , and that recall was better after 3R study than the other two study  
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23 conditions,  $F(2, 69) = 14.19$ ,  $\eta_p^2 = .29$ ,  $p < .001$  (LSD pairwise comparisons confirmed  
24  
25 the pattern). There was no interaction between previous testing and study condition ( $F <$   
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27  $1$ ).  
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32 *Multiple choice.* Because there were no significant differences between the fact-  
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34 based and inference-based types of multiple choice questions for any of the three study  
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36 conditions, we collapsed over multiple choice question type for purposes of the present  
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38 analysis. ANOVA's paralleling those reported above indicated that performance was  
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40 better on immediate than delayed testing,  $F(1, 69) = 57.63$ ,  $\eta_p^2 = .46$ ,  $p < .001$  (see Table  
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42 2 for means). More importantly, there was a significant effect of study condition on  
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44 multiple choice performance,  $F(2, 69) = 4.52$ ,  $\eta_p^2 = .12$ ,  $p < .05$ . LSD post-hoc analyses  
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46 indicated that the 3R group performed significantly better than the reread-only group ( $p <$   
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48  $.05$ ). There were no other significant pair-wise differences.  
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53 Delayed multiple choice performance was significantly better after an immediate  
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55 test than with no immediate test,  $F(1, 69) = 45.71$ ,  $\eta_p^2 = .40$ ,  $p < .001$ . On delayed testing,  
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3 there was a significant advantage of 3R relative to rereading and note taking,  $F(2, 69) =$   
4  $5.44, \eta_p^2 = .14, p < .01$ , with no difference between rereading and note taking (as  
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6 revealed by LSD comparisons). There was no interaction ( $F(2, 69) = 1.85$ ).  
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10 *Problem solving.* There was a significant effect of study condition for both  
11 ANOVA's,  $F(2, 69) = 6.75, \eta_p^2 = .16, p < .05$  and  $F(2, 69) = 5.03, \eta_p^2 = .13, p < .01$   
12 (see Table 2). LSD post-hoc analyses revealed that for both performance collapsed across  
13 immediate and delayed testing (with no initial test) and for delayed testing, the 3R and  
14 note-taking groups performed significantly better than the reread-only group ( $p$ 's  $< .05$ ).  
15 There was no interaction between study condition and time of test ( $F < 1$ ) and no benefit  
16 of immediate testing on delayed problem solving performance.  
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27 *3R recitation performance.* The verbal recitation phase of the 3R procedure was  
28 scored for the proportion of idea units recalled. Participants recalled between 5.4% to  
29 42.2% of the idea units, with a mean recollection of 15.7%. As in Experiment 1,  
30 participants in the 3R condition recalled more on the immediate free recall test than  
31 during verbal recitation,  $F(1, 23) = 18.85, \eta_p^2 = .45, p < .001$ , again providing evidence  
32 that participants benefited from the second reading after the recitation phase. Conditional  
33 probability analyses indicated that participants in the 3R condition recalled previously  
34 recited idea units during the immediate free recall test at a rate of 60.8%, compared to  
35 14.4% of non-recited idea units.  
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48 *Note-taking performance.* The notes taken by the participants in the note-taking  
49 group were analyzed for the quantity of idea units noted. Participants noted between  
50 3.2% and 69.8% of the total idea units, with a mean of 29.6%. A conditional probability  
51 analysis was conducted to determine the influence that noting a particular idea unit had  
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3 on the probability that that idea unit would be recalled during immediate free recall, with  
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5 26.2% of noted items recalled and 7.0% of non-noted items recalled.  
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8 Using longer and more complex passages than in Experiment 1, we again found  
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10 benefits of the 3R strategy on immediate and delayed recall relative to both note-taking  
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12 and rereading only study strategies. A new finding is that there were benefits of the 3R  
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14 study strategy on the multiple choice items (which included inference questions) and on  
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16 problem solving relative to the rereading condition. This shows that the consequences of  
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18 3R go beyond boosting performance on a criterial test that parallels recitation (i.e., free  
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20 recall).  
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#### 24 General Discussion

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26 We identified a study strategy, the 3R strategy that capitalizes on the mnemonic  
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28 benefits of testing and feedback. Two experiments revealed robust advantages of this  
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30 strategy (relative to both reread only and note taking study activities) on the free recall of  
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32 both shorter and longer educational texts at both immediate and one-week delayed  
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34 testing. These potent improvements are in line with previous research showing the  
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36 benefits of testing relative to study that involves read only (McDaniel et al., 2007;  
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38 Roediger & Karpicke, 2006a; Pashler et al., 2005) and extends the benefit relative to note  
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40 taking. The present experiments are important in showing the superiority of the 3R  
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42 method on free recall at both immediate and delayed testing relative to a strategy (note  
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44 taking) that is commonly used (Palmatier & Bennet, 1974), presumed to be generative  
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46 (Peper & Mayer, 1978), and has been shown to be effective (Dyer et al., 1979; Einstein et  
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48 al., 1985; Fox & Siedow, 1985; Jonassen, 1984).  
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Additionally, in Experiment 2 the 3R method improved performance on inference items (some multiple choice items and problem solving) relative to the reread-only group. This finding suggests that 3R may promote deep learning of the material (perhaps construction of an effective mental model; cf. Mayer & Gallini, 1990), more so than reading alone. Given that the focus of the testing-effect literature has been on retention (see Roediger & Karpicke, 2006b), an important implication here is that retrieval and feedback can have benefits beyond improving retention. Note-taking produced similar improvements on inference items (relative to rereading), thereby reinforcing the hypothesis that note-taking is a generative study activity (Peper & Mayer, 1978). Nevertheless, the 3R method produced equivalent inference performance to note-taking but did so more efficiently (i.e., with significantly less study time).

The positive benefits of 3R for learning and retention are especially noteworthy when considering that this is a learner-controlled testing activity. By contrast, research on testing effects has culminated in calls for increased instructor-provided testing (see Pashler et al, 2007). The 3R method seems to be an easily learned method that can be performed efficiently, that can produce memory benefits as well as generative learning, and that can be self-applied in both formal and informal learning settings.

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For Review Only

**Table 1**

Proportion of Idea Units Correctly Free Recalled in Experiment 1 (standard deviations given in parentheses)

<b>Condition</b>	<b>Immediate</b>	<b>Delayed-New</b>	<b>Delayed-Retest</b>
<b>3R</b>	.63 (.13)	.33 (.14)	.53 (.15)
<b>Note-taking</b>	.51 (.19)	.21 (.14)	.37 (.18)
<b>Reread</b>	.46 (.18)	.16 (.10)	.33 (.17)

Proportion of Correct Multiple Choice Responses in Experiment 1 (standard deviations in parentheses)

<b>Condition</b>	<b>Immediate</b>	<b>Delayed-New</b>	<b>Delayed-Retest</b>
<b>3R</b>	.88 (.14)	.67 (.22)	.83 (.14)
<b>Note-taking</b>	.90 (.08)	.69 (.16)	.89 (.10)
<b>Reread</b>	.82 (.18)	.66 (.20)	.78 (.20)

Proportion Correct on the Short Answer Inference Questions in Experiment 1 (standard deviations in parentheses)

<b>Condition</b>	<b>Immediate</b>	<b>Delayed-New</b>	<b>Delayed-Retest</b>
<b>3R</b>	.83 (.13)	.70 (.19)	.86 (.14)
<b>Note-taking</b>	.78 (.17)	.73 (.19)	.79 (.18)
<b>Reread</b>	.84 (.16)	.65 (.19)	.82 (.18)

**Table 2**

Proportion of Idea Units Correctly Free Recalled in Experiment 2 (standard deviations given in parentheses)

<b>Condition</b>	<b>Immediate</b>	<b>Delayed-New</b>	<b>Delayed-Retest</b>
<b>3R</b>	.22 (.10)	.09 (.05)	.15 (.09)
<b>Note-taking</b>	.12 (.07)	.03 (.02)	.07 (.05)
<b>Reread</b>	.17 (.10)	.04 (.02)	.10 (.07)

Proportion of Correct Multiple Choice Responses in Experiment 2 (standard deviations in parentheses)

<b>Condition</b>	<b>Immediate</b>	<b>Delayed-New</b>	<b>Delayed-Retest</b>
<b>3R</b>	.72 (.18)	.59 (.24)	.74 (.20)
<b>Note-taking</b>	.70 (.20)	.49 (.20)	.62 (.19)
<b>Reread</b>	.63 (.23)	.38 (.21)	.62 (.24)

Proportion of Points on the Problem Solving Task in Experiment 2 (standard deviations in parentheses)

<b>Condition</b>	<b>Immediate</b>	<b>Delayed-New</b>	<b>Delayed-Retest</b>
<b>3R</b>	.51 (.24)	.44 (.22)	.50 (.22)
<b>Note-taking</b>	.52 (.26)	.39 (.27)	.47 (.26)
<b>Reread</b>	.37 (.19)	.30 (.21)	.39 (.20)