



# Does Writing Matter? Assessing the Impact of Daily Essay Quizzes in Enhancing Student Learning

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One of the major challenges of teaching is finding ways to maximize student learning. The phrase “writing to learn” (Young, 1997), a central tenet of the Writing Across the Curriculum (WAC) movement, communicates the critical role that writing plays in thinking and learning. As a result of WAC’s influence, faculty across disciplines have incorporated techniques such as freewriting, journals, multiple drafts of papers, and ungraded writing into their classes in an effort to improve higher order thinking and learning (Kalmbach & Gorman, 1986). Although ungraded assignments can be of great value in stimulating student thinking, it is equally important to consider the role that *tests* play in thinking and learning, especially if they constitute the bulk of a student’s grade (Connor-Greene, 2000).

Even though teachers typically want their students to develop strong critical thinking skills, they may unwittingly test students in ways that assess and reward basic knowledge rather than higher level cognitive skills (Bol & Strage, 1996; Crooks, 1988; Gottfried & Kyle, 1992). Bloom’s (1956) classic *Taxonomy of Educational Objectives* classifies cognitive skills into a hierarchy. From simplest to most complex, these skills are: knowledge (recall of information), comprehension, application, analysis, synthesis, and evaluation. To encourage students to develop higher level cognitive skills, tests must require and reward higher level thinking.

Young and Fulwiler (1986) point out that the way to improve student writing is to place it as the center of the academic curriculum. Tests are clearly at the center of the curriculum in many students’ minds. Grades are one of the most salient aspects of a class for students, and consequently, tests play a critical role in fostering student learning. Students develop and modify their study patterns in response to the structure and demands of their classes (Thomas, Bol, & Warkentin, 1991). According to Elton and Laurillard (1979), “the quickest way to change student learning is to change the assessment system” (p. 100). To encourage students to come to class

well-prepared and ready to process information at a high cognitive level, tests must reward these behaviors.

This paper addresses the impact of brief daily essay quizzes as a strategy for simultaneously assessing and promoting student learning. Each quiz consisted of one or two questions that tapped several levels of Bloom's taxonomy (e.g., comprehension and evaluation) but could be answered and graded quickly (see Table 1). Quiz grades were based on content and clarity of ideas, not grammar or spelling (Connor-Greene, 2000). Students took the quiz at the first 5-10 minutes of each class. After turning in their responses, the quiz questions served as the catalyst for beginning class discussion. Given the importance of questioning in the role of critical thinking, beginning every class with questions is a pedagogically appealing way to initiate the process of learning (King, 1995; Ruggiero, 1998). Students are highly motivated to read and discuss the material because they want input into how their quiz is graded, which leads to richer class discussions. Furthermore, because the quiz question begins each class discussion, assessment becomes an integral part of every class session, eliminating the typical split between teaching and testing.

Results of anonymous surveys indicated that students perceived daily essay quizzes as enhancing both learning and class preparation. In contrast, scheduled tests at predictable intervals throughout the semester encouraged last-minute preparation (waiting to read the assignments until just before the test) and lower perceived student learning (Connor-Greene, 2000). Although perceptions and self-reports of behavior are useful pieces of information, they do not address the question of whether this test method actually enhances reading, thinking, and learning. In order to improve teaching, it is important that teachers conduct systematic research to investigate student thinking and learning (Walvoord, 1990).

On student evaluations of classes that had daily essay quizzes, some students described themselves as better readers and thinkers as a result of this test format. We wanted to test this empirically. Our study investigated whether students who took daily essay quizzes demonstrated better reading and thinking skills than students who took tests at regularly scheduled intervals. If writing is as a way of thinking (Fulwiler, 1986) and a way to teach students to think critically within their discipline (Nilson, 1998), students who engaged in regular graded writing in class (daily essay quizzes) should show better retention of information, better critical thinking and evaluation, and better clarity of ideas in writing about an unfamiliar scholarly journal article in their discipline of psychology than should students who had not engaged in frequent graded writing.

## Method

### Participants

We asked students in four upper-level undergraduate psychology classes to participate in a voluntary study, in exchange for five extra credit points on their final exam. Two of the classes had taken four scheduled tests (ST) over the course of the semester, composed of a combination of multiple choice, essay, definitions, and short-answer questions. The third class took weekly essay quizzes beginning halfway through the semester (a total of seven essay quizzes) in addition to the scheduled tests (ST/7EQ). The fourth class took essay quizzes every class day throughout the semester (DEQ) except for several days when a film or guest speaker was scheduled.

### Procedure

All participants read the same research article from *American Psychologist*, the official journal of the American Psychological Association, at the end of the semester. The article addressed a topic that was not covered in any of the four classes, and none of the students had previously read the article. We distributed copies of the article to students and asked them to carefully read it in preparation for an essay quiz two days later. We constructed an essay question that tapped Bloom's levels of knowledge, comprehension, analysis, and evaluation. The essay page had a removable cover sheet indicating the student's class, which facilitated blind scoring of the essays.

## Results

We graded the student essays using a pre-determined scoring criteria checklist. Our interrater reliability was .94. Differences in ratings were resolved through discussion. An analysis of variance (ANOVA) indicated a significant difference in essay scores among classes,  $F(3, 54) = 3.86, p < .05$ . The scores for the DEQ class were significantly higher than those of both of the ST classes,  $t(26) = 2.87, p < .01$ , and  $t(25) = 2.47, p < .05$ , and significantly higher than the scores for the ST/7EQ class,  $t(25) = 2.67, p < .05$ . There were no differences among scores in the two ST classes or the ST/7EQ classes. Individual scores ranged from 0 to 12. The means and standard deviations for each of the classes are listed in Table 2.

## Discussion

The results of this study confirmed our prediction that students who took daily essay quizzes would show better retention of information, clarity of ideas, and critical thinking when asked to write about an unfamiliar article in their discipline than would students who did not engage in daily graded writing. These findings suggest that students who wrote daily essay quizzes went beyond simply learning the course material to

develop reading and thinking skills that generalized to a new assignment outside the realm of their class. Rather than just gaining mastery of ideas presented in the course, they appear to have become better readers and thinkers than did the students in the other three classes. The results suggest that the daily essay quizzes helped students learn transferable critical thinking skills.

The average essay scores for students in each of the three classes that took scheduled tests were extremely low. With a maximum possible score of 12, the highest average score for each of these three classes was 41%, which would clearly warrant a grade of "F." The average score of the daily essay quiz class, 68%, would earn a "D+." Because students participated in this study as volunteers earning extra credit, they may not have put as much effort into this task as they might do on a real test that was required. It is important to note that the article we chose for the study was a six page psychology journal article containing disciplinary jargon. Because we wanted to assess reading and critical thinking skills acquired in a psychology class, we chose an article that would be very difficult reading for students unfamiliar with psychology's disciplinary writing style. We selected an article from the *American Psychologist*, the APA journal, because we wanted to assess reading, thinking, and learning specific to the discipline of psychology.

The significant difference in scores between the DEQ and ST/7EQ classes and the lack of difference between the ST/7EQ and ST classes suggest that essay quizzes must be an integral part of every class, from the beginning of the semester, to have a noticeable effect on student reading and thinking. It appeared to take DEQ students several weeks to establish a "rhythm" of reading thoroughly for each class. Because there were only seven essay quizzes in the ST/7EQ class, students may not have sufficient time and practice to foster the same habits developed by the DEQ students.

Because the students did not take a pre-test at the beginning of the semester, it is possible that the students in the daily essay quiz class were better readers and thinkers even before taking the class. Given the similarity of essay scores between the other three classes and the fact that all four classes were senior level psychology courses this seems unlikely, but this possibility cannot be ruled out on the basis of this study. We will conduct further research assessing changes in student reading and thinking from the beginning to the end of a semester to directly address this question.

In this study, it was not possible to separate the effects of reading practice from writing practice. Did the students perform better because the daily quizzes encouraged them to learn to read more carefully, or because they learned to develop and articulate their written ideas with more clarity,

or a combination of the two? Although the assigned reading load and level in the four courses was comparable, it is likely that the daily quiz class completed more of their reading and learned to read more carefully and critically because they were tested every class period. If that is the case, the better performance of the DEQ class may be due, at least in part, to more practice reading as well as more frequent writing.

The results of the study suggest that tests play a powerful role in shaping student behavior and skills. These findings reinforce the need for further examination of the role of testing in assessing and promoting student learning and thinking.

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### Note

We presented a portion of this paper at the National Writing Across the Curriculum Conference, Ithaca, NY, June 1999.

**Table 1**

#### Sample Quiz Questions Reflecting Bloom's Taxonomy

1. List the three approaches described by Teitelbaum that are used to assess bias in testing (knowledge). Which of these approaches did the author of the article you read for today's class use in discussing gender and the SAT? (application) Cite a specific example from the article that supports your position (knowledge, evaluation).
2. Describe Datan's reaction to the "Reach to Recovery" materials as expressed in the article you read for class today (comprehension). How well does her evidence support her interpretation? Explain (evaluation).
3. What do you see as the primary risks and benefits of Jane Elliot's approach to teaching children about prejudice? (evaluation) How would you modify her exercise to reduce risks while preserving benefits? (synthesis).
4. What are the major differences between a social constructionist and an objectivist approach to research? (analysis) Which term would you use to describe the author of the article you read for today's class? Why? (evaluation).

**Table 2**

#### Means and Standard Deviations of Essay Scores for Each Class

	n	M	SD
DEQ	12	8.17	3.76
ST/7EQ	15	4.87	2.67
ST	15	4.93	3.06
ST	16	4.19	3.53

Note. DEQ = daily essay quizzes; ST/7EQ = scheduled tests with seven essay quizzes; ST = four scheduled tests  
Maximum possible score = 12