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# ANNOTATION AS AN INDEX TO CRITICAL WRITING

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*The differences in the ability to write critical and analytical essays among students with individual annotation styles were investigated. Critical and analytical writing was determined by the writer's ability to respond to a text with logical and critical analysis and attention to its thematic argument. Annotation styles were determined by ways of annotating a text: critical inquiry as skillful and simple highlighting as verbatim. The results indicated that skillful annotators produced more critical and analytical writing samples than did verbatim annotators. Verbatim annotators recycled information rather than analyzing it. The findings are congruent with theories that promote explicit metacognitive skills and support the position that teaching tactics consonant with students' cultural backgrounds are more likely to succeed in fostering critical thinking reflected in writing.*

**Keywords:** *annotation; double-entry journal; efficacy expectation; marginal commentary; reading strategies; teacher role; cognition*

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**Although theoretical approaches** to learning can be traced as far back as the work of Descartes, significant experimental studies that signaled the birth of the professional inquiry into learning began only a little more than a century ago. Since that time, from Skinner's behaviorism to experientialism and constructivism, scholars have attempted to delve the essence of learning. Increasingly, knowledge is viewed as an elaborate system of processes rather

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than just a body of information. The most significant shift in focus occurred when the discipline moved from the study of changes in manifest behavior (behaviorism) to changes in mental states (constructivism). With this shift, the mind is no longer seen as a *tabula rasa*. "When we intend to stimulate and enhance a student's learning, we cannot afford to forget that knowledge does not exist outside a person's mind" (Fosnot, 1996, p. 5). A key to this study is to examine the crucial role an explicit metacognitive skill, namely annotation, plays in the learning and thinking process.

Writing, as the externalization and remaking of thinking (Applebee, 1984; Emig, 1977), reflects thinking processes and meaning making. However, inexperienced writers require considerable training and modeling to arrive at the stage of expressing their thoughts logically. Writing as a process takes careful planning, and repeated and orchestrated strategic activities are the first step. Simply implementing the writing-to-learn doctrine in the curriculum does not guarantee critical thinking and the idealized result of writing to learn. To maximize the learning outcome by reinforcing critical thinking, student writers must be made aware of effective strategies as the first step in the learning process.

Individual styles in annotation as a strategy are the primary concern of this research. Annotation as a means to help the reader understand the text better is by no means a new concept. It draws on centuries-old intellectual traditions of both West and East. It lies at the very heart of exegesis—the tradition of explaining and understanding texts, including not only scriptural explication in the West but the rich heritage of the colophon as an element of Eastern calligraphy and philosophy. A recent history of the phenomenon is expounded in H. J. Jackson's (2001) *Marginalia: Readers Writing in Books*. In the book, Jackson offers a pioneering survey of the phenomenon of marginalia and offers a range of examples of both obscure and famous annotators of Western literature, including Pierre de Fermat, Samuel Taylor Coleridge, and Graham Greene, and marked-up copies of Boswell's *Life of Johnson*. The Western aspect of the tradition goes back to medieval monasteries and the making of illuminated manuscripts. Take the Dutch manuscript of *Biblia Pauperum* (ca. 1395 to 1400; Marrow, Defoer, Korteweg, & Wustefeld, 1990) as an example. The color-coded text, the illustra-

tions, and the prolix commentary in cursive script in the final pages of the folio all point to the early practice of annotation as a tool to aid the reader in comprehension. The hermeneutic tradition of literary criticism is in large part based on this practice of marginal commentary. A similar functional approach to using annotation can be found in Chinese calligraphy dating back to as early as the Six Dynasties period (AD 220 to 589). That was the beginning of a long-held tradition among the Chinese literati to add comments and responses, known as colophons, to poetic, political, or philosophical texts rendered in calligraphy. The colophon as annotation eventually became a genre in its own right, and many calligraphic scrolls are prized for their colophons as much as for the primary texts. The Chinese term for colophon is *ti*, which may be translated literally as "to lift the pen in response," a fitting description of what an active reader does when interacting with a written text.

Although annotation has not been widely used by teachers of writing as an independent tool to tap into the learners' thinking process as a preparation for critical writing, modern versions of annotation are not unknown to readers and writers. In a recent exhibition at the New York Public Library, *Passion's Discipline: The History of the Sonnet in the British Isles and America* (May 2, 2003 to August 2, 2003), manuscripts of poets and critics alike serve as inspiring examples of annotation as a vital phase of the creative process. The manuscripts reveal the responses of modern poets, including W. H. Auden and Sylvia Plath, to works of an earlier generation. In their marginal notes, one finds the germ of many new poems. As experienced readers and writers, we all find ourselves annotating as a habit. For many of us, it was a fundamental component of our study habits, particularly as undergraduates, when highlighting a textbook and penciling in our professor's comments became a vital aspect of our preparation for examinations and term papers. However, inexperienced readers and writers who have not been exposed to rigorous study habits early on need to be taught how to implement this strategy. Reviewing a student's annotated text conveniently offers a window through which a teacher may discern a learner's thinking styles and find effective ways to facilitate each learner's critical thinking process.

### LEARNING STRATEGIES AND THE LEARNING OUTCOME

The study of learning strategies is ultimately aimed at understanding how to help students improve their ability to learn. We learn by thinking. To control and direct their cognitive processes successfully, learners must be equipped with strategies and understand when and how to use them effectively to achieve a qualitative learning outcome.

Learning strategies are behaviors intended to influence or manipulate cognitive processes. Highlighting the main idea, underlining a phrase or key word, diagrammatically noting a structural feature, and using a double-entry journal are some of the examples of learning strategies. Research studies demonstrate that one way to influence the manner in which students process new information and acquire skills is to instruct them in the use of learning strategies (Dansereau, 1988; Jones, 1988; Mayer, 1988; McKeachie, 1988). Although we recognize the importance of learning strategies, we also ought to be attuned to the learners' beliefs about themselves and strategies, namely, the affective aspects of the learner. Second, we also need to recognize that mastery of learning strategies takes time and that repeated direct and explicit instruction is crucial.

### EFFICACY EXPECTATION AND THE LEARNING OUTCOME

Aside from acquiring and executing strategies, learners bring with them their own sense of their ability to handle a task, and this sense of ability has been addressed in self-efficacy theory (Bandura, 1997; McCombs & Pope, 1994; Palmer & Goetz, 1988; Schunk, 1983). "An efficacy expectation is the belief that one can successfully execute behaviors that produce desired outcomes" (Palmer & Goetz, 1988, p. 50). Self-efficacy expectations or learners' perceptions of their own achievement attributes may affect strategy use. Those who find that a certain strategy requires a great deal of time and those who encounter difficulties may fail to apply these strategies during their learning process. Others who perceive the task as easy may also abandon their strategy. During my year-long observation for the current study, I have had instances of both the low- and high-efficacy expectations. One student I approached

when I noticed that she had done little annotation in the assigned reading told me that she did not know how to annotate because she did not know what to pay attention to in the text. Another student who exhibited a similar outcome expressed dismay about her weak analytical skills and said that she believed the text was very simple and did not need annotation to help her with her writing assignment. Both low- and high-efficacy expectations can result in metacognitive deficit, which, in the current study, has been identified as a major reason for the lack of strategy use. As Palmer and Goetz (1988) note,

Strategy use . . . is affected by knowledge structure, strategy knowledge, and motivational factors. Academically capable learners appear to have more knowledge regarding, and make more use of, learning and study strategies than do their less able peers. The effective readers and studiers are more flexible and adaptive in their use of strategies and more aware of the variables that influence the appropriateness of specific strategies. Less able learners may be less likely to monitor and regulate the comprehension process, and more prone to emotional responses that interfere with learning. When faced with comprehension difficulties, less proficient learners may be more inclined to react affectively than effectively. (p. 53)

In light of the above strategy application theory, an early and timely diagnosis of such a deficit is crucial in helping the learner to adjust his or her self-perception of adequacies and to effectively apply learning strategies.

#### **SURFACE AND DEEP APPROACHES**

Just as efficacy theory indicates that a learner's self-evaluation influences his or her strategy application, so does a learner's approach to strategy application manifest his or her level of cognitive engagement. Lavelle and Zuercher (2001) observe that the level of reader engagement varies depending on the reader's goal:

When the student's goal is just to comply with task demands, the learning activity involves a low level of cognitive engagement (e.g. memorizing or repetition) and a superficial, linear outcome (listing or organizing), a surface approach. On the other hand, when the

intention is to fully engage the task based on a need to know, the focus is at a higher conceptual level, geared toward manipulating layers of meaning, a deep approach. (pp. 374-375)

Levin (1982) expounds similar notions in his study of learning devices. His grouping of strategy styles corresponds with that of Lavelle and Zuercher: memory directed and comprehension directed. Memory-directed strategy style concerns mainly the storage and retrieval of information, which Schmeck (1988) labels as shallow learning style. Conversely, comprehension-directed strategy style calls for the understanding of meanings and their interrelatedness, which in turn is called deep learning style.

Drawing on the theory of deep versus surface approaches and learning styles, I analyzed students' annotation styles of two short reading assignments and compared the quality and quantity of their annotations with the corresponding essays written in response to the reading materials in an attempt to answer the question, does annotation serve as an index to critical writing?

Believing that a metacognitive assessment of each student through question and answer would strengthen the link between weak writing and surface approach and between strong writing and deep approach, I asked students to respond to three questions designed to elicit metacognitive processes. In particular, I hypothesized that students adopting a deep approach to annotation would be more likely to produce an essay with critical understanding and analysis of the reading material. These students would also have a strong awareness of their own cognitive processes and what strategies to adopt for the task. On the contrary, surface approach and fuzzy awareness of metacognition would produce a weak learning outcome—in this case, a weak essay.

In this study, I attempted to examine the qualitative differences between individual learning strategies among students whose ability to write critical and analytical essays varied. Critical and analytical writing was determined by the writer's ability to respond to a text with logical and critical analysis and attention to its thematic argument. Learning strategies were determined by ways students annotated texts. It was assumed that learning strategies would influence cognitive processes and that explicit instruction of learn-

ing strategies would enhance the learning outcome. This assumption was based on theories proposed by researchers and experts in the field who argued that manipulation of learning strategies directly affected cognitive processes and the learning outcome (Dansereau, 1988; Jones, 1988; Mayer, 1988; McKeachie, 1988).

By this assumption, skillful annotators should produce more critical and analytical writing samples than poor annotators do. I designed the following study to test the hypothesis.

## METHOD

### SUBJECTS

The participants consisted of 40 students enrolled in my two freshman Composition I classes at a medium-sized college in a major urban area in the United States. As a Writing Across the Curriculum participant, I have chosen to use freshman composition classes for data collection for three reasons. First, Freshman Composition is a required course, so I was sure to teach it. Second, the ceiling enrollment for each composition class is 27, a good number for data collection. Third, Composition I is the first college composition course in which students are taught to write critical and analytical essays in preparation for the City University of New York Proficiency Examination<sup>1</sup> that all students in the university must take once they have earned 45 credits and by the time they have completed their 60th credit. Of the total sample, 9 were male and 31 were female. Sixty percent of the sample were between the ages of 20 and 30, 25% were younger than 20, and 15% were older than 30. More than 65% of the sample were of Caribbean descent, with one third speaking Spanish, Creole, or Patois at home, at work, or with friends. Two students from the sample were Asian American.

### MATERIALS

*Annotation samples.* Students submitted all reading materials with annotations at the time of the departmental midterm and final examinations. The midterm annotation samples were used to help



the investigator gauge each student's mastery of the strategy and to guide the investigator in diagnosing each student's cognitive progress. The final samples were filed in two categories, skillful and poor annotation styles, and were used against the final examination essay results.

*Questionnaire.* After students had practiced using annotation strategies for their reading and writing assignments, I conducted a survey using two questions to tap into students' metacognition, that is, awareness of one's own cognitive activity and of the method adopted to regulate cognitive processes (Brown, 1978):

1. Do you feel that the strategies we went over so far directly affected the way you revised your first draft and prepared the second draft? Please explain how these strategies or some of them helped you with your writing and revising.
2. When you read, which strategy or strategies do you prefer to use to help you comprehend the material and later write about it? Please explain.

Students were allowed to take the questions home and were encouraged to think carefully about what went through their minds when completing reading and writing tasks. Students were instructed that they could give long, very long, or short answers to each question and that all answers must be truthful. Students were also informed that their responses were for the teacher to have a better understanding of their mental activities and not for a grade.

*The essay.* Essays from the departmental final examination were used to determine if annotation skills were in any way connected with the results of the final exam essay. Students were given two articles to read 2 days before the final examination and were encouraged to annotate the texts as they had been trained to do. The departmental final examination was designed by the department composition coordinator, and the essay questions were unknown to instructors until the day of the test. The final essays were read by two readers, who graded each paper using a blind grading system of P (passing) or F (failing). Neither reader knew what grade the other person gave to an essay before reading it.

**PROCEDURE**

At one class meeting in the first week of class, the students were given a brief description of the course design and of my general interest in the study for the Writing Across the Curriculum project. Students were informed that I would provide photocopies of reading materials, arranged in three units with themes of gender and identity, race-ethnicity and identity, and language and mass media. Each unit consisted of four to five articles of different lengths, from one to six pages. Students were instructed to annotate texts in each unit freely. Their annotated unit was collected at the time of essay submission, usually ranging from 2 to 2.5 weeks of class discussion and other activities involved in reading and writing, described below. Students were told that samples of their annotated texts and essays would be used for my study without their names appearing on any selected samples.

During the second week, students were given a definition of *annotation* along with a sample annotated text taken from Diyanni's (2002) *One Hundred Great Essays*. Table 1 contains what students received as a guide to their work.

To facilitate annotation skills, scaffolding was provided in a step-by-step procedure for each reading material. Each step was an attempt to break the assignment into smaller, less intimidating pieces, and each assignment guided the student toward the final paper.

**Step 1: Skim and Scan**

Students were instructed to use a green marker to highlight words they were not familiar with and yellow for passages they found important. They were instructed not to stop until they finished reading the article. They were then to do the same with subsequent articles throughout the semester. This activity was carried out in class to ensure tight control of the procedure during the first half of the semester. As a preparatory step to future writing, this activity was monitored and periodically checked.

TABLE 1  
Student Guide to Annotation

Annotation Definition	Sample Annotated Text
<p>Annotations are brief notes written about a text during the process of reading. Underlining, circling words and phrases, highlighting passages, drawing arrows to link related points, and using question marks to indicate confusion are what a reader can do to signal importance. Marginal comments are also used to reflect the reader's understanding of and attitude toward the text. (Diyanni, 2002, p. 20)</p>	<p>Excerpt from Susan Sontag's <i>A Woman's Beauty: Put-Down or Power Source?</i></p> <p>To be called beautiful is thought to name something essential to women's character and concerns. (In contrast to men—whose essence is to be strong, or effective, or competent.) It does not take someone in the throes of advanced feminist awareness to perceive that the way women are taught to be involved with beauty encourages narcissism, reinforces dependence and immaturity. Everybody (women and men) knows that. For it is "everybody," a whole society, that has identified being feminine with caring about how one looks. (In contrast to being masculine—which is identified with caring about what one is and does and only secondarily, if at all, about how one looks.) (Diyanni, 2002, pp. 20-21)</p>

**TABLE 2**  
**Student Guide to Double-Entry Journal**

<i>Text Prompts</i>	<i>Your Responses</i>
Page X, paragraph X where your highlighted passages or queries appear	Continue to put down thoughts as an extension to annotation in case of space restriction in text margins.

### **Step 2: Annotation**

Instructions to students were as follows: Reread the article without time constraint. Stop to check words and highlighted passages and feel free to write remarks, responses, or critiques in the margin. Follow the format of annotation examples but do not feel restricted to the format.

This activity was carried out outside of class, and students were instructed to complete it before the next class meeting. This activity was preparation for future writing.

### **Step 3: Reading Log (Double-Entry Journal)**

Instructions to students were as follows: Use annotation as a guide for double-entry reading log.

This step reinforces annotation skills and works as an extension to annotation. Students were instructed to follow the example shown in Table 2.

### **Step 4: Group Discussion**

Each group consisted of no more than five students, who shared annotation notes and journals based on annotation queries. Students were encouraged to share and exchange thoughts and to critique and respond to group members' annotations and journal entries.

### **Step 5: Tweaking and Shaping Ideas**

The next step was a 20-min in-class writing exercise to reorganize, reorder, and rethink responses to the questions. An essay of 600 to 700 words was assigned in response to one of the two questions outlined in the handout. In this essay, students were asked to

refer to the readings grouped under the same theme by summarizing the author's ideas, to draw a relationship between ideas presented in the articles, and to bring in their personal experiences to further expound on the topic.

### **CODING**

The two final examination reading materials were coded in two categories: deep or skillful approach and surface or poor approach. Samples that demonstrated a more active thinking process were classified as deep or skillful approach. These samples included meaningful highlighted passages, marginal responses to and questions of such highlighted parts, circles that emphasize key ideas, and arrows that join or point to related ideas and/or arguments. Samples that had minimal marginal responses or questions with either no highlighted parts or long, indiscriminate highlighted passages were filed under surface or poor approach.

Responses to metacognitive questions were examined to provide insight into the skillful and poor annotators' cognitive processes and to help the investigator determine if metacognitive skills coincided with annotation skills.

Each sample was matched with the essay the student wrote for the final examination with the goal of establishing a direct connection between deep or surface approaches reflected in annotation samples and quality of the written work (i.e., learning outcome).

### **RESULTS**

Annotation styles from the samples clearly indicated that skillful annotations resulted in erudite essays marked by clear arguments and nonrepetitive support. Students who employed a deep approach to annotation labeled as skillful in the analysis also demonstrated that they were very much in control of their own cognitive processes and the strategies they used. The metacognitive responses also confirmed that skillful strategy users readily applied strategies to other reading tasks, thus making a conscious effort to monitor their learning. Below is a selection of a few students'

responses to the questionnaire presented in the materials section of this paper.

I do feel that the strategies presented to us thus far have been helpful in writing, rewriting and revising numerous drafts. I have come to use these techniques every day. The one that I use most commonly is annotations. My church congregation is reading one Psalms each day, and I have found myself commenting in my Bible as to what I am thinking about at the moment I am reading and how I feel about what I'm reading. It's very helpful because when I go back to what I have read, it's as if my thoughts are fresh in my mind. With my first college paper also, my annotations came in handy. It was very helpful that my key points and examples were already shown. It gave me less [sic] things to read through to format my final paper. (Student X)

When I read I prefer to make annotations to help me comprehend the material. By making annotations I am able to put the material in my own word. Doing this helps me later on when writing about it. (Student Y)

I think that some of the strategies we went over so far directly affected the way I revised my first draft and second draft. The strategies of annotation, double-journal entry, and connecting details and making inferences have helped me. By using them I have learned to think for myself and make conclusions based on what I read. I have also learned to look for connections that are not so obvious at first. (Student Z)

The findings revealed that those who grasped annotation skills also made tremendous progress in their writing through the semester-long practice and received a P from both readers for the departmental final examination. Poor annotators, on the other hand, produced weak essays marked by verbatim repetition of assigned materials and lack of analytical argument. They were also ambivalent about their metacognitive decisions.

Of the 40 participants, 27 successfully passed the final exam, 7 failed, 3 withdrew, and 3 were absent from the final. Of the 27 who passed, most kept consistently skillful annotation notes for all readings, including the final examination articles. Of the 7 who failed, 5 manifested poor annotation skills throughout the semester, 1 failed because of second-language problems in comprehension and poor annotation skills, and the last failed because of excessive absences.

The small sample by no means supports a significant statistical analysis. Instead, it is naturally selected to present how annotation as a strategy offers the investigator a window into the cognitive processes of the student.

## DISCUSSION

The results indicated that skillful annotators produced more critical and analytical writing samples than did verbatim annotators. Verbatim annotators recycled information rather than analyzed it. The findings are congruent with theories that promote explicit metacognitive skills and support the position that teaching tactics consonant with students' cultural backgrounds are more likely to succeed in fostering critical thinking reflected in writing. In addition, appropriate application of reading strategies that emphasize active participation of the student in the experience of the text can dramatically improve writing skills. The findings resonate with implications about the role of the teacher, who in von Glasersfeld's (1995) words plays the role of a "midwife in the birth of understanding" as opposed to an agent of the "mechanics of knowledge transfer" (p. 383).

The role of the authority figure has two important components. The first is to introduce new ideas or cultural tools where necessary and to provide the support and guidance for students to make sense of these for themselves. The other is to listen and diagnose the ways in which the instructional activities are being interpreted to inform further action. Teaching from this perspective is also a learning process for the teacher (Driver, Aasoko, Leach, Mortimer, & Scott, 1994).

Specifically for the purposes of this study, the teacher's role is construed as one that provides tools and guidance for students in their reading and writing-to-learn processes. The purpose of the study is to explore how annotation as a tool or strategy can help the learner make sense of textual information. One conclusion is that this strategy can help the teacher gauge his or her students' mental states, so early intervention and guidance can be afforded to students who are learning to execute the strategy designed to meet par-

ticular writing goals. The teacher may use annotation in diagnosing ways in which students process textual information. By exploiting this skill in teaching, the teacher may further enhance students' critical thinking and predict the validity and soundness of the student's written arguments based on textual information comprehension as part of the writing-to-learn process.

The semester-long practice of annotation and related strategy skills resulted in measurably improved learning outcome, that is, thinking that is more critical as reflected in the analytical written work, the essay. The potential power of metacognitive strategies leads the student to become a vital, active part of the educational process. Strategies used during the process became seedlings to be planted in the fertile ground of writing and rewriting. Encouraging learning strategies in the learning process invites the student to engage his or her own imagination. Competence in learning strategies has a positive impact on the learner's academic performance.

The positive results linked with annotation demonstrate that strategy instruction plays an important role in the development of the learner's critical thinking process. The researcher focused on examining only annotations for this study, though other strategies may have played a role, as well. It leaves extensive room for further studies to explore how direct instruction in strategies can positively influence critical thinking and writing and what strategies work better together to yield consistently positive results.

#### NOTE

1. The City University of New York Proficiency Examination tests students' ability to understand and think critically about ideas and information and to write clearly, logically, and correctly. It consists of two tasks: analytical reading and writing (2 hr) and analyzing and integrating materials from graphs and text (1 hr).

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