

# TOPICAL KNOWLEDGE AND REVISING<sup>1</sup>

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A decade ago, most articles on revision began by commenting on the paucity of research into that aspect of the composing process and on the inadequate treatment of revision in composition texts. These problems are well on the way to being corrected. The research of Sommers, Flower and Hayes, Faigley and Witte, Murray, Beach, and many others has found its way not only into articles and professional meetings but into textbooks. However, this work is limited in two ways. It has considered revising primarily in relation to cognitive development or to the mastery of conventions. And it has not systematically addressed the relationship between revision and knowledge about the topic of the piece of writing, knowledge that I call "topical." My study begins to correct these limitations by suggesting that a writer's revision activities may depend as much on acquisition of topical knowledge as on level of cognitive development.

Even the most extensive recent study of the relationship between revising and knowledge, that of Flower, Hayes, Carey, and Schriver, ignores the role of topical knowledge in the revising process. According to their process model, when the writer is ready to select a strategy for solving a problem, she may select Rewriting, in which she "returns to square one—a set of propositions or a gist—and runs those same propositions through her mental sentence generator again" (43). Or she may select Revising, in which she draws on stored knowledge to conceive of a solution—specifically, "stored patterns" she has used to solve similar problems in the past. It is "new information" only in that she has not drawn on it earlier in the writing process.

In fact, the problem-solving process these researchers describe implies a much broader role for knowledge. Clearly, the writer

with a “well-defined [mental] representation” of the gist of the piece of writing is better able to diagnose problems and thus to engage in a revision process, while the writer with a less-well-defined representation is more likely to engage in rewriting—preserving “the current intention and the gist of what was said in the first draft” and thus producing “a series of merely different—not better—texts” (42-3). It follows that *any* activity that enhances the writer’s mental representation should help the writer decide if a better text is needed. My research, while preliminary and informal, has led me to conclude that learning more about the topic is such an activity and that the ability to make such decisions may develop while the cognitive level remains steady.

I characterize my work as preliminary and informal because it was not set up to test any hypothesis. Rather, it grew out of a course I had revised after acquiring some knowledge about one of the main premises of composition pedagogy, that the proper subject matter for a writing course is writing. The course occupied that gray area between basic writing and regular freshman composition; the students were college-oriented and had received better than average high-school training, but on the basis of a placement exam they had been identified as weak writers. After I taught several faltering versions of the course, limiting it sometimes to students’ own writing and other times including as models the writing of professionals, I concluded that this premise might not be appropriate for this group. Instead, I settled on giving the course a content base. In practice, this meant I expected my students to master a body of knowledge (about language) while they worked on expository writing.

As I’ve done for years, I organized the subject matter around a set of “learning cycles,” to move the students repeatedly from more concrete to more abstract tasks with the purpose of leading them to an understanding of a concept central to the subject. (On the development and application of learning cycles, see Fuller et al. and Kearns.) Learning cycles are planned to stimulate students’ cognitive development by replicating the concrete-to-abstract pattern most of us go through when learning a new concept. The learning-cycle approach would seem to be particularly suited to college freshmen, who are generally at the “dualistic” stage of development (Hays, “Models” and “Development”). The danger in this approach arises from its cognitivist orientation: the teacher with a cognitivist orientation may not pay enough attention to the

skill element of revising. This danger will become clear in what follows.

When I actually began to teach this new version of the not-quite-developmental course, I decided to follow Odell's suggestion that good research can be done by collecting a body of writing and "looking—really looking" at it, in other words, that the researcher does not always need a hypothesis, sophisticated test instruments, or expertise in statistical analysis. So I photocopied all of the writing done in two sections of this course—not only all final drafts but all working drafts. The writing was of two types: papers written for inclusion in a portfolio that was submitted for the final grade and papers written in class and revised at home. The former I refer to as "portfolio revisions." The latter I call "diagnostics," having incorporated them into the course to give me an idea of what each student understood by the instruction to "revise." (I always give extra conference help to the ones for whom revising means nothing more than proofreading.)

When I finally had the time to look at this writing, I primarily wanted to understand why the papers written for this version of the course were longer and more thoughtful. I quickly realized that the most interesting aspect of the material was the draft-to-draft revisions, especially because some of these revisions spanned nearly the entire ten-week session and because revisions of two papers were required (the diagnostics) while portfolio revisions were optional (with one exception, to be explained shortly). Thus the material could serve as a window into the revising behaviors of my students: how often and how successfully they revised, and what they chose to revise.

In my first pass through the papers, I applied Faigley and Witte's distinction between "surface" and "text-base" changes ("Analyzing Revision"). Faigley and Witte note two types of surface changes: "formal" (such as spelling, verb tense, punctuation) and "meaning-preserving" (additions, deletions, distributions). Text-base changes are also of two types: microstructure (influencing a small area of the text-base) and macrostructure (altering the gist of the entire text-base). Changes in the macrostructure of an entire paper include striking a new line of argument and adopting a new thesis. Microstructure changes include expanding by example and making explicit what is implicit. Tabulating changes made by their writers, Faigley and Witte found 1.3 macrostructure changes per 1000 words in the final drafts; macrostructure

changes accounted for 0.8% of total revisions. Using this method, I arrived at similar numbers.

These results only quantified what all writing teachers know: inexperienced writers almost never engage in a revision that changes the macrostructure of the entire paper, and almost all of their revisions are at the surface level. More important, the results didn't correlate with my impression that the writers had made many significant changes. For my second pass through the material, I drew on van Dijk's point that any text can have several levels of macrostructure, the paragraph constituting one such level. Following van Dijk, I defined a macrostructure change as one which alters the gist of at least one *paragraph* rather than of the entire draft, as Faigley and Witte had done. I did not actually draw up a "topical structure" of each revision, as Witte did in his study of students revising a textbook passage, but instead worked with a rough and ready sense of the gist of each paragraph. Further, I decided that I could best evaluate the writers' willingness to engage in significant revisions by counting the number of papers in which paragraph-level macrostructure changes occurred. This procedure seems especially appropriate for evaluating the work of inexperienced writers. Their papers are usually quite short, so the paragraph is relatively important as a unit. And these writers almost always make so many surface changes that their few text-base changes are easy to miss. My apparently coarse distinction between *paragraphs* that contain macrostructure changes and those that do not actually throws into relief the willingness of these writers to engage in thoughtful revising, relative to different writing tasks and contexts.

For an example of microstructure revision, consider Tom's paper on the hypothesis that in order to function we need names for almost everything. The following is from the second version of this paper:

Most businesses are run by multi-million dollar computers that can communicate across the country and world. These computers [sic] have what is called their own computer language that most individuals do not understand. Without names and words for every item or command for this computer, it would be almost impossible to communicate efficiently.

The third version notes that the computers are run by specialists who use many computer languages such as Basic, Cobol, FORTRAN, and Pascal. The fourth version adds what the specialist must know:

. . . how to log on, run, use different commands, and log off. These are simple commands. But, without this language it would be impossible for us to communicate efficiently in the business world.

The on-going elaboration in this example constitutes a series of microstructure revisions. No revision alters the gist of the given paragraph, the first version of which made the same point.

Microstructure changes add texture and clarity to a piece of writing. They make it somewhat more interesting. Contributing more than anything else to my sense of dramatic improvement in some of these papers were the changes in macrostructure. An example is in order. Responding to the statement that "The meaning of a sentence is much more than the sum of the meanings of the individual words," Sue produced the following three versions of a first paragraph over a two-week period:

(version 1) "The meaning of a sentence is much more than the sum of the definitions of each word." My response to this statement would be that it is absolutely correct. If we took each word of a sentence and tried to separately define each of them, we would find that when we put the definitions together the sentence would not actually mean what it was intended to say.

(version 2) My response to this statement is that a sentence cannot, in most cases, mean more than [sic] the sum of the definitions of each word. This is true when one is speaking in the literal sense. However this does not always hold true in all cases, such as when we are using cliches.

(version 3) There are several different responses to this statement, all of which are legitimate. A person could say that this statement is either true or false, or they could reason that the statement is both true and false. I believe in the latter. I think that statement is both true and false; but it depends on which way you are speaking. This statement is false when one is speaking in the literal sense. However, when one

speaks in cliches or with paralinguistic gestures this statement becomes true.

There is a clear *macrostructure* change between versions 1 and 3; Sue has significantly altered her thesis from unqualified agreement to qualified disagreement with the topic proposition. Version 2 is more confused than clear, but reading it in light of version 3, we can see the same point being made. I'll return to this example later, because it displays another interesting feature that looks very much like a sign of cognitive development.

Using van Dijk's definition of macrostructure, I determined that at some point in any one draft of 36% of the papers revised for the portfolio, a change occurred that altered the gist of at least one paragraph. The figure of 36% is quite high compared to figures from other studies of revising. Bridwell found that 11.8% of the revisions made by her writers were at the multiple-sentence level; most macrostructure changes in my sample also involved several sentences, but I counted three times as many changes. Similar differences are apparent between my data and that of both Sommers and the "Write/Rewrite" assessment as summarized by Gentry: 1% of student writers making changes at the "theme" level (Sommers' data), 12% of 17-year-old writers making "holistic" changes (Write/Rewrite data). The difference between my results and theirs is easily explained and quite significant: their figures describe how a cross-section of student writers likely revise for any given paper, whereas mine show that these writers are both able and willing to make text-base changes. A few are much more able and willing than most, but only two out of my 28 were totally intransigent.

Methodological concern necessitates a brief digression. The figure of 36%, while high, correlates with my impression that a fair number of the final drafts included in the portfolio were a pleasure to re-read when I was doing this work. Single-scorer studies fare poorly these days in our field, especially if they also lack controls, multiple-regression analysis, and the other accoutrements of scientific research. In defense of such impressionistic analysis I offer years of experience evaluating thousands of papers according to many different rubrics, a kind of training that surely counts for a lot when coupled with curiosity and intellectual honesty. Or so argues an unregenerate humanist.

In tabulating the portfolio revisions, I was also able to

distinguish between those that students generated on their own and those I had suggested, since the preliminary drafts included in the portfolios contained my written comments. We would expect inexperienced writers to rely mainly on a teacher's directions for revision, but this expectation was not entirely born out. Fifteen of my 28 writers independently generated two or fewer macrostructure revisions in their portfolio; this is what we would expect. But seven writers generated their own macrostructure revisions in over half of their papers—clearly an encouraging sign.

I've said that my results show even inexperienced writers able and willing to make significant macrostructure changes if invited to do so. In the course I'm describing, that invitation was rather like the one issued by the king to the serfs: portfolio revisions *had* to take account of material covered after the initial draft was submitted. During the course there were 20 separate writing assignments that could be revised; the portfolio was to contain seven papers totaling at least 12 pages. Because of this latitude, the requirement to incorporate new material does not invalidate my results. Each writer could still select among this material and decide how to incorporate it. The fact that many of my writers made macrostructure changes in paragraphs shows that they really were able to handle this relatively high-level task.

Turning from portfolio revisions to diagnostics, we see just how important it is to make revision a significant intellectual activity that allows time for ideas to ripen and knowledge to grow. For the first diagnostic, only two days elapsed between the writing of the in-class version and the assigning of the revision, and only one out of 13 students made a macrostructure change. (As is typical of the first writing course at most institutions, enrollment shifted a great deal during the first two weeks of the course; the 13 were those who remained in the course until the end of the semester.) For the second diagnostic, nearly half of the students made macrostructure changes. This striking difference most likely resulted from the amount of time allowed for revising and from the material covered in the course. Instead of two days, two weeks elapsed between the writing of the in-class version for the second diagnostic and my assigning of the revision. During this period, students discussed, read about, and wrote about aspects of language relevant to the topic, so that when I surprised them with the revision assignment, they had a more solid knowledge base and responded positively to the chance to use it. (The length of time actually

allowed for the revising was the same for both diagnostics—three days.)

Two other facts about the diagnostics are worth noticing. Unlike with the portfolio revisions, I did not require that new material be incorporated. And the second diagnostic was assigned only four weeks into the term, well before the students had begun their portfolio revisions and even before I had been able to work much on their attitudes toward revising. In other words, these not-quite-developmental writers decided on their own that macrostructure revisions were the appropriate response to the revision invitation.

The importance of these two factors—time and knowledge—can be further understood by noting a result from the revising study of Beach and Eaton. They found that for two topics, 17% of the problems in the areas of thesis, backgrounding, and contrasting were addressed in a revision. Significantly, Beach and Eaton had their writers revise over a limited time (from one class meeting to the next), whereas my writers had the opportunity for two weeks of mental ripening. As writers ourselves, we know that we need both time and the stimulation of additional reading and conversations in order to *re-see* our own work. My results indicate that if we don't provide our students with similar conditions, we are making it nearly impossible for them really to practice revising.

That these inexperienced writers responded positively to the invitation is also shown in their preference, in the portfolio revisions, for the most difficult topics, those that constituted the final writing exercises of learning cycles. The more mundane topics such as summarizing an article were less often selected. Of the six paper topics most often selected for inclusion in the portfolio, three were final exercises, and they accounted for slightly more than one-third of the papers included in the portfolios. They also elicited a large number of student-generated macrostructure revisions, accounting for 60% of the revisions in this category among the six most-preferred topics.

When knowledge new to the writer is an element of the writing situation, revising may proceed roughly as follows. First the writer notices that an existing draft does not tally with a newly acquired piece of information. Depending on how great the disagreement seems, the writer then decides either to subordinate the new information to the existing gist or to create a new gist that assigns the new information an important role. If the information has come



through a channel familiar to the student (textbook, lecture, class discussion), it will probably not be threatening, and the decision to incorporate it into a new draft will probably not threaten either. The activities called into play by revision will be those the student has performed in other classroom contexts: comparing, citing facts, making generalizations. *Added to* these activities will be reviewing and selecting among the methods the writer is familiar with for resolving disagreements (as modeled by Flower et al.), adapting to the needs of the audience (Ede; Ede and Lunsford; Hays, Brandt, and Chantry; Kroll; Piche and Roen; Raforth; Rubin and Raforth), and applying appropriate conventions (Kogen, Nold).

The process of revising, then, can involve at least three kinds of knowledge: about the topic under consideration; about audience; and about plans, gists, patterns of development, and so forth. To apply knowledge about audience, the writer may have to operate at a cognitive level higher than the dualistic. To apply knowledge about the writing process, the writer may have to operate at a metacognitive level. Applying topical knowledge, however, is like other tasks the inexperienced writer has performed in high school and is performing as a college freshman. All three applications require critical thinking, which is usually placed at the upper end of cognitive-development scales and is associated with such intellectual moves as suspending judgment, reflecting on alternatives, abstracting from immediate experience, de-centering, and relativizing (Meyers). Yet critical thinking also has a skill element—actually applying criteria to reach a judgment—which probably does not depend on the “level” of cognitive development except for topics that involve morals, beliefs, or other abstract concepts.

As I mentioned earlier, the danger with a cognitivist orientation is that the teacher may not pay enough attention to this skill element. For example, the teacher who studies Beach and Eaton’s work will read that students whose main concern is to follow a “predetermined format derived from a textbook model”—who are behaving as “dualists”—are less likely to revise than those who can “recognize conflicting opinions” (150, 166-7). In considering cognition, the authors concentrate on those aspects affecting writers’ self-esteem, level of confidence with respect to the writing tasks, and ability to de-center. The teacher may therefore settle on the worthy goal of helping students improve in these areas in order to facilitate revising.

As worthy as this goal is, it does not acknowledge that revising involves other operations besides de-centering and self-assessment. The student who is writing at the dualistic level will have difficulty adopting the role of audience, because this move requires a de-centering that most dualists can manage only infrequently. On the other hand, such a student can still examine a draft for completeness of content and validity of thesis, measured against knowledge acquired since composing that draft. Having undertaken college courses, this student has to be able to gather and incorporate new topical knowledge. In short, revising ability can develop even if cognitive ability does not, as long as there is occasion for practicing and as long as the practice involves intellectual stimulation such as that provided by new topical knowledge.

Now back to Sue's three opening paragraphs. The first version is perfectly clear, but the third is nearly incoherent: the writer contradicts herself at least twice. While any number of reasons might account for this apparent decline, one fact about the writing situation is important—between drafts two and three Sue gained some knowledge about paralinguistic gestures, and perhaps this knowledge stimulated her to consider other response options besides the simple “true or false.” William Perry's scheme applied here would indicate that the first version shows a writer thinking dualistically—the statement to which she is responding is either correct or not. The third shows a relativistic writer—an individual's response to the statement depends on the individual's point of view. True, the relativism of the third version is not coherently expressed. Sue clings to the terms “true” and “false” although the whole thrust of her paragraph is that they are not appropriate, and as a result she writes an illogical statement of the form “X is both Y and not-Y.”

These very features suggest that when writing her third version Sue was experiencing what Perry would call a “critical moment.” The phrase is apt; such moments are critical in two senses. They are of critical importance to the student, who is actually rehearsing the move into a relativistic perspective. And they are moments (or perhaps more accurately events) which the writer may have reached through critical thinking. The critical thinking Sue displays here signals a movement away from the dualistic level, a movement that may have happened because the courts

forced her to take account of new knowledge in an on-going process of writing *and* reading.

At least, this is how a cognitivist might interpret the changes Sue displays, and it is how I first interpreted them. On the other hand, her progress may have results as much from having more material to draw on and thus having a greater stimulus for implementing the critical thinking that she was capable of from the beginning. In fact Sue was typically erratic in her revising. Her second diagnostic showed macrostructure revisions, but in her portfolio she had made only proofreading changes in three papers and minimal microstructure changes in the other three. If these results are taken as an indicator of cognitive level, Sue didn't "develop" at all (assuming it is even possible to assess cognitive level, as Wilkinson et al. point out). Coaching her in this direction could have been a wasted effort, when what she may have needed was even more opportunities (forced or free) to revise.

Whichever interpretation best accounts for the revisions Sue made as well as for her missed opportunities to make others, the fact remains that the writing situation within which she was working did counter that natural tendency of all freshman to regard writing and learning as separate events. This may be the most important reason for requiring some mastery of content in a writing course that emphasizes revision attitudes and methods. My writers made the greatest number of improvements for the second diagnostic—the one for which they had the opportunity to incorporate two weeks of material—and most of the macrostructure revisions for this diagnostic involved making earlier theses more complex and subtle by referring in detail to this material. To put it another way, these "macrostructure revisers" came to understand that a paper ought to grow in substance as the writer grows in knowledge.

For teachers who want to take up the challenge of reintroducing coherent and well-defined content into freshman writing courses, after several decades of being told that our job is to teach *writing* and only writing, I suggest that topical knowledge and revising belong together. More specifically, if a course targets improvement in revision methods, there should be a well-defined and intellectually stimulating content. At the freshman level, student writing will not serve this purpose, nor will a collection of readings on various topics. Revisions should be done as part of the process of understanding this content; likewise, increases in under-

standing should occasion new revisions. Teachers should treat these revisions as a series of rehearsals rather than separate entities, and should attend to and comment on macrostructure changes from draft to draft. Such changes may not loom large in the surface of any given paper; they may not alter the length or may span only two or three sentences. But writers who make them are beginning to recognize that writing and learning really do belong together.

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#### NOTE

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