

GLOSSING FOR IMPROVED COMPREHENSION: A NEW LOOK AT AN OLD TECHNIQUE

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In the paper I presented at the first general session of this conference (Otto, 1980), I alluded to an instructional technique that my associates and I are developing in the hope that it will "... help to improve (readers') comprehension—not just what we know about comprehending." Very briefly, the technique involves *glossing* expository text; that is, we are using marginal and other intratext notations—gloss—to direct readers' attention while they read. Neither the idea nor the term is new; both date back at least to medieval times, when theologians used gloss to illuminate biblical texts. What we are attempting to do is to systematize glossing procedures so they can be used with confidence, both formally, in preparing instructional materials, and informally, in face-to-face teaching in the classroom. In the paper I discuss some of the issues we have begun to deal with as we move toward systematic glossing.

Our experiences so far include (a) developing and trying out prototype glossed materials, (b) working with teachers and teachers-in-training to make informal applications of the glossing technique, and (c) examining selected studies that appear to have particular relevance for our continued efforts. We feel we have reason for optimism. Students report informally that gloss does indeed help them tackle the complex task of reading expository text. The teachers we have worked with are not only impressed by the high face validity of the prototype gloss activities, but they are also enthusiastic about using the glossing techniques informally when they teach from content-area texts. And we are satisfied that there is a related literature that offers both general support and specific implications for proceeding with the development of glossing procedures. [See Otto, White & Camperell (1980) for an extended discussion.]

We feel that we are now at a point where we have bases for giving serious consideration to the function of glossing as a technique for helping readers understand expository text and for refining our specifications for developing glossed material. In this paper I discuss, first, an admittedly idealized view of the function of gloss; then I consider the "focus" of gloss, acknowledging the need for a dual focus on both *process* and *content* as well as concern for certain constraints and considerations; and finally I outline some developmental steps for refining the glossing technique.

Function of Gloss

In my first general session paper (Otto, 1980) I commented on three alternatives reading educators have traditionally used in their attempts to help students comprehend: (a) modify the text; (b) augment the text; and (c) modify the students' reading behavior. I suggested that these alternatives share a common flaw: their focus is too limited. Emphasis is placed on the text, on the teacher (i.e., teacher-directed activities), or on the reader (i.e., reader-imposed behavior or strategies); and important interactions among all three are ignored. Then I suggested that an effective instructional technique ought to give concurrent attention to all three. In other words, the technique would bring together the diverse aspects of a complex teaching-learning process. We believe that, with development and refinement, the glossing technique can serve that integrative function.

Yet a truly effective instructional technique for helping readers deal with expository text must have two characteristics in addition to the integrative function. It must secure and sustain learners' active involvement; and it must provide for the internalization and application of the skills and strategies that are taught. Gloss activities can virtually ensure the former if they (a) acknowledge the learners' prior experience, or lack of it; (b) lay out a useful strategy for pursuing the learners' purpose; and (c) require overt, interactive responses from the learner. Whether gloss can effectively do more than set the stage for the latter remains to be seen. That is, gloss activities can straightforwardly call for the application of skills and strategies, thereby setting the stage for internalization; but ultimately internalization and automatized application with "unglossed" material go beyond the activities we can provide. The best we can do is to work out effective strategies not only for initiating but also for "fading" readers' involvement with the gloss activities. I return to this point in the final section of this paper.

Focus of Gloss

When we first began to consider the notion of glossing as an instructional technique, we thought of it mainly as a means for, first, developing and, then, encouraging the application of the specific comprehension skills we had identified in our earlier work. Some examples of specific skills we have worked with are (1) determining the central thought of a paragraph or of several paragraphs; (2) using context clues to figure out the meaning of an unfamiliar word; and (3) identifying relationships to make a conclusion. We still believe that glossing offers an effective way to deal with specific skills; but as we have examined related research and interviewed students, we have been convinced that we need to broaden our focus on skills to include the more general strategies that efficient readers use to understand text.

One example of a general strategy is consciously relating new information, as it is read, to one's prior store of knowledge or to information that was acquired from reading the preceding pages. Such a strategy is suggested in a variety of sources, which include the work related to schema theory, work by Smirnov (1973) and by Brown (1977) in the area of cognitive development, Kintsch's (1978) work on developing his model of comprehension, and the line of research related to readers' mathemagenic behaviors. The need for such a strategy is supported by our observation that when students were asked to describe what they do when they read to understand, some of them said that they relate what they read to what they already know or to what they had read previously. Another example of a general strategy is the practice of self-questioning, which is suggested by several investigators who are interested in metacognition. We also found in our interviews with students that some of them use self-questioning as a rehearsal strategy for remembering as well as for assessing and monitoring their own understanding of what they read.

Through gloss activities we hope, first, to help students become aware of the usefulness of these and other strategies and, second, to help them learn how and when to employ these strategies as they read content-area material.

Although we are mainly concerned with the process of reading content-area texts, we recognize that we cannot focus on process without considering content as well. Consequently, in addition to broadening our process focus to include strategies as well as skills, we acknowledge the need for a dual-focus on content and on process. While nobody can

claim to be expert in every content field, one can apply the principles of text analysis to materials that were written by experts. Employing such techniques as mapping, outlining, or the more formal text analysis systems described by Kintsch (1980), Meyer (1975) and others, teachers who are generalists should be able to develop gloss activities that deal with important aspects of content. In other words, properly conceived gloss activities ought to be directed toward enhancing the understanding of specific text content even as they shape the development of "generalizable and internalizable" skills and strategies. The effectiveness of gloss activities that claim a dual focus on content and process, then, must ultimately be demonstrated by a specific (content directed) as well as a more general (process directed) effect: improved understanding of the glossed material and internalized skills and strategies that enhance readers' ability to tackle any reading task.

Up to this point in the discussion I have said that glossing text ought to have an *integrative effect* and that gloss must have *dual foci*, which direct attention to matters that are related to process and to content. If the preceding sentence sets parameters for glossing, then our task is to elaborate, clarify, and refine those parameters to a point where we can outline reliable procedures for preparing effective gloss. We expect to pursue that task. Figure 1, which depicts interrelationships as well as parameters, provides some direction. The explanation and discussion of Figure 1 that follows is an attempt to explicate some of the assumptions and concerns that are embodied in the figure.

Parameters and Interrelationships

On the perimeter of the figure, the content and process arrows of the dual focus flow toward the finished product: gloss (text augmented by gloss activities). The arrows are arranged and interrupted to indicate that even as the dual foci direct attention to both process and content, attention is also given to (a) the complex and interacting constraints and consideration of the learning environment, and (b) any possible need for "excursions" either to augment information in the text-at-hand or to enhance the learner's skills and strategies. First we offer some comments on the excursions; then we consider the constraints and considerations.

Excursions. By "excursions" we mean instruction that is offered in addition to the regular gloss activities provided for a specific text. One example, on the process side of the figure, is the kind of instruction offered to a reading skill-development group, where a given skill or strategy is taught intensively and in relative isolation from application in content-area reading. The point of such instruction is to introduce and to sharpen the learners' awareness of the skill or strategy and to provide opportunities for application. While we should attempt to design gloss activities that make for the acquisition as well as the application of specific skills and strategies, the fact is that certain readers and/or certain texts will require intensive preparation for working with the particular skills and strategies stressed in glossed text. (In fact, we suspect that the introduction and sharpening of most skills and strategies is most appropriately handled in such a manner. Whether this is so remains to be seen. The question of when and how acquisition proceeds to application—insofar as the main thrust of instruction is concerned—is an important one.)

An example of an excursion on the content side of the figure is instruction that is designed to provide basic background information or to elaborate or augment given

information in preparation for reading a given selection of text. Again, the point is that certain readers and/or certain texts will require *additional* information as a precondition to working with glossed text. Of course the question of when an excursion is called for and when an anticipated lack of background information can be handled with gloss is another important one. It seems almost certain that if gloss gets bogged down with too much basic information it will become cumbersome and sluggish, thereby losing both its appeal and its effect.

Constraints and considerations. The constraints and considerations identified in Figure 1—Expectations, The Milieu, The Reader, and the Text—are, as we pointed out earlier, aspects of a complex teaching-learning process. It is important that all of these aspects, and the specific factors associated with them, be given consideration in preparing gloss activities. And, if gloss is to have the integrative effect that we are seeking, it is equally important that *concurrent* consideration be given to, at least, the most *potent* factors. Yet the reality is that the universe of factors is virtually limitless, so an important aspect of the task of establishing guidelines for effective glossing is to identify the ones that are likely to have the greatest impact in given situations.

Again, for the moment the aspects of the reading-learning process that are given in Figure 1 acknowledge the fact that factors associated with each of them deserve consideration and impose constraints on the glossing process. The specific factors and particularly the interactions among them, remain to be more fully understood in terms of their impact. Meanwhile, we have tentatively identified what seem to be some of the more important factors associated with the four aspects identified in Figure 1.

The nature of gloss activities must, of course, be shaped by the explicit and implicit *expectations* that can be identified. That is, the effectiveness of gloss will be largely determined by the extent to which it is in line with and contributes to the attainment of expected outcomes. Both the goals of the overall curriculum and the stated and unstated objectives of content-area teachers need to be considered to give the gloss direction and focus. The specific measures to be used in assessing outcomes also merit careful consideration, since we know that different measures may yield different results (e.g., Kendall, Mason & Hunter, 1980).

Consideration of specific factors in *the milieu* makes it possible to deal with the mundane but important matters that often make the difference between failure and success in planning instruction. One obvious factor is the time available; gloss prepared for one hour of available time would undoubtedly be quite different in terms of degree of elaboration and types of responses required of learners from gloss prepared for ninety minutes or two hours of available time. Likewise, gloss prepared for individuals and gloss prepared for groups *might* need to incorporate different directions and different types of activities in order to sustain interest and effective involvement. And of course gloss ought always to be prepared in view of the best technology available: the most appropriate techniques applied in the appropriate manner for a particular individual or group.

Many factors related to the reader could, and should ultimately, be identified and clarified. But most important for our immediate purposes are the reader's prior knowledge of text content (i.e., content knowledge) and the reader's knowledge of and ability to apply specific skills and strategies (i.e., process knowledge). The preparation of gloss—and decisions about when and how to take planned excursions—will be heavily influenced by both of these factors. Together, they, in effect, are the "givens" to which new information

must be related for assimilation, accommodation, and application.

Similarly, the text is a given that can, presumably, be brought into closer juxtaposition with the reader through glossing. In order for gloss to bring the text and reader closer together, important concepts and ideas must be identified through some type of text analysis; likewise the skills and strategies students need to use in order to read a text must also be determined through systematic analysis. The identification of the important concepts and the skills and strategies needed to read and understand these concepts provides a more definitive focus for preparing gloss activities.

Stages of Gloss

While the immediate focus of gloss is on both content and process, the ultimate goal is to help students not only to acquire but also to internalize and apply the skills and strategies that enable them to be independent readers of the full range of materials they encounter. Norman, Gentner, and Stevens (1977) put it like this: "... if a child knows how to learn, then he can get the knowledge by himself" (p. 194). If gloss is to contribute to that goal of independence, then we need to do more than simply provide gloss that is effective in improving students' comprehension of text. We must also provide for the systematic internalization and fading of the support that is provided through gloss in order to help students to sustain their use of the skills and strategies when they are on their own. On the basis of our experience and observations so far, we envision four distinct levels or "stages" of preparing and interacting with gloss activities: (1) demonstration; (2) development; (3) internalization; and (4) fading. Each stage can be briefly characterized in terms of focus and function as we see them now.

Activities at the *demonstration stage* ought to create awareness of the different features of a text (e.g., things so mundane as chapter heads and subheads, and things so relatively esoteric as different organizational patterns and styles) and of the skills and strategies that can be used to read that particular text with understanding. The main function of the activities at this stage, then, would be to provide immature readers with models that approximate mature readers' perceptions relative to extracting meaning from text. That is, the gloss activities, or models, include reflections, queries and applications that lead students through some of the same thought processes mature readers experience as they read and study expository texts. Demonstration gloss activities describe what is—or ought to be—happening as one reads. Stated bluntly, we would hope that by preparing effective demonstration gloss we could develop students' enthusiasm for working with glossed materials. The goal is to win them over by showing them that it works and is worth the effort.

Just as demonstration gloss activities would provide descriptions of *what* is happening, gloss activities at the *development stage* would provide *explanations* that help students to develop an understanding of *how* to make active use of the skills and strategies they need to read and comprehend the content. As we see it now, gloss at this stage should include clarification of behaviors related to specific skills and strategies, explanation of how to use the skills and strategies, and opportunities to apply the skills and strategies in reading content-area texts.

At the *internalization stage* gloss activities would provide opportunities for students to continue to use the skills and strategies that were introduced and sharpened at the

development stage in a wide variety of contexts. At this stage one can envision activities that are designed to help students move closer to independence by helping them move toward a level of metacognition. The activities would go beyond providing opportunities for application and practice; and the focus would be on developing students' awareness of *when* they could apply skills to understanding text and *which* skills and strategies might be more appropriate in different situations.

By the time students reach the final stage, *fading*, they will, presumably, have internalized the skills and strategies (i.e., they will have become aware of skills and strategies and be able to apply them in a variety of contexts). The function of the gloss activities, then, would be simply to remind readers to think about their own efforts to understand what they are reading, to think about the skills and strategies that help them to comprehend given information, and to correct any miscues or misconceptions that may be clouding their understanding. That is, to use a term from the work in artificial intelligence, gloss activities at the fading stage should remind students to "debug" their understanding (i.e., eliminate false perceptions) as they read. Students who reach the fading stage will, essentially, have attained the goal we set: they will not only possess the skills and strategies required to read content-area texts, but they will be aware of their ability to use the skills and strategies and know when and how to apply them.

References

- Brown, A. L. *Knowing When, Where, and How to Remember* (Technical Report No. 47). Urbana, Ill.: Center for the Study of Reading, University of Illinois, June 1977.
- Kendall, J., Mason, J., & Hunter, W. Which comprehension? Artifacts in the measurement of reading comprehension. *Journal of Educational Research*, 1980, 73 (4), 233-236.
- Kintsch, W. Comprehension and memory of text. In W. K. Estes (Ed.), *Handbook of Learning and Cognitive Processes*. Hillsdale, N. J.: Lawrence Erlbaum Associates, 1978.
- Kintsch, W. Text representations. Paper prepared for The Conference on Reading Expository Materials, Wisconsin Research and Development Center for Individualized Schooling, University of Wisconsin-Madison, November 1980.
- Meyer, B. J. F. *The Organization of Prose and Its Effects on Memory*. Amsterdam: North-Holland Publishing Co., 1975.
- Norman, D. A., Genter, D., & Stevens, A. Comments on learning schemata and memory representation. In D. Klahr (Ed.), *Cognition and Instruction*. Hillsdale, N. J.: Lawrence Erlbaum Associates, 1977.
- Otto, W. Toward understanding comprehension. Paper presented at the first annual meeting of The American Reading Forum. Sarasota, Florida, 1980.
- Otto, W., White, S., & Camperell, K. *Text Comprehension Research to Classroom Application: A Progress Report* (Theoretical Paper No. 87). Madison: Wisconsin Research and Development Center for Individualized Schooling, October 1980.
- Smirnov, A. A. *Problems of the Psychology of Memory*, New York: Plenum Press, 1973.

