



Applications of Generative Learning for the Survey of International Economics Course

David C. Sharp , Dave S. Knowlton & Renée E. Weiss

To cite this article: David C. Sharp , Dave S. Knowlton & Renée E. Weiss (2005) Applications of Generative Learning for the Survey of International Economics Course, The Journal of Economic Education, 36:4, 345-356, DOI: [10.3200/JECE.36.4.345-357](https://doi.org/10.3200/JECE.36.4.345-357)

To link to this article: <https://doi.org/10.3200/JECE.36.4.345-357>



Published online: 07 Aug 2010.



Submit your article to this journal [↗](#)



Article views: 37



View related articles [↗](#)



Citing articles: 3 View citing articles [↗](#)

Applications of Generative Learning for the Survey of International Economics Course

David C. Sharp, Dave S. Knowlton,
and Renée E. Weiss

Abstract: Generative learning provides students with opportunities to organize course content, integrate new content with students' current knowledge, and elaborate on course content by making connections to real-world events. These opportunities promote less reliance on professors' lectures and simultaneously create more self-reliance among students. The authors offer categories of generative learning strategies and briefly discuss their merits. They offer ideas for implementing generative strategies into the day-to-day events of an economics course. Although the authors use a survey of international economics course as their example, the ideas in this article could be applied in a variety of economics courses.

Key words: generative learning, international economics, pedagogy
JEL codes: A22, F00

Because economics is rich in complicated formulas and technical methods, a teacher-centered model of education often dominates the economics classroom: Professors use well-structured lectures to convey knowledge to students who take copious notes so that they can later apply their new knowledge on tests. Such pedagogy should not be discounted completely; after all, lectures can be useful for teaching structured content. Leaving students with the notion that economic formulas and methods result in definitive answers and outcomes, however, misrepresents the discipline. To paraphrase the old joke, for three opinions, ask two economists. We believe that professors can help students gain a more balanced view of economics (and, hence, understand the proverbial "two-handed economist") by complementing teacher-delivered rigor with student-centered pedagogy (Sharp 2003). To this end, we advocate the use of generative learning in economics courses. We provide an overview of generative learning and then offer suggestions for implementing generative strategies into a survey of international economics course.

David C. Sharp is an assistant professor of economics and Business Advisory Council Research Professor at the University of Southern Mississippi (e-mail: david.sharp@usm.edu). *Dave S. Knowlton* and *Renée E. Weiss* are assistant professors of instructional design and learning technologies at Southern Illinois University Edwardsville.

OVERVIEW OF GENERATIVE LEARNING

Generative learning is based on the ideas of Wittrock (1974, 1990, 1992; Wittrock and Alesandrini 1990). Proponents of generative learning argue that students, rather than professors, should be engaged in actively pursuing an understanding of course content by completing generative assignments that result in any concrete artifact, such as writing assignments, posters, graphs, or even computer-based simulations (Grabowski 1996). Jonassen (1988) has identified four categories of generative strategies—those that promote (a) recall, (b) organization, (c) integration, and (d) elaboration. These four categories have been shown consistently to be effective in fostering learning (e.g., Barba and Merchant 1990; Johnsey, Morrison, and Ross 1992; Wittrock 1990, 1992). Because recall focuses only on memorization and regurgitation of course content, we do not include a discussion of recall generative strategies in this article. The other three categories of generative strategies may be useful in promoting higher order thinking among students. In this section, we define each of these categories of generative strategies and explain the role of each strategy in helping students learn. See Table 1 for an overview of these strategies.

Organization

The idea of an organizational generative strategy implies more than students regurgitating an already existing organization from a textbook or lecture. Students should impose an organization on content that makes sense to them. By imposing their own organization on content, students are more likely to learn from their organizations because they are, in essence, rehearsing the information as they organize. Organizational generative strategies can be oral and can occur through conversation or presentations. We focus on written generative strategies because oral communication is fleeting. Once students have orally organized material, they have no artifact to remind them of the way that they organized the content.

Consider a particularly poignant example of how organizing content leads to learning. The author of a letter written to newspaper advice columnist Ann

TABLE 1. Overview of Generative Strategies and Their Purposes

Strategy	Purpose	Examples
Organization	To assist students with imposing an order on content	Outlines Summaries Concept maps
Integration	To assist students in making connections to their prior knowledge structures	Paraphrase Metaphors
Elaboration	To assist students with elaborating on information by making connections to real-world examples	Identifications Predictions Implications

Landers began with a question: “[S]hould I marry the guy or not?” After describing her fiancée in the letter, she concluded by saying, “Do not bother to answer this. You have helped me more than you will ever know” (quoted in Lindemann 1995, 6). Certainly, by writing this letter, the author did not learn any new information about her fiancée, but writing the letter did impose an organization on her knowledge about him. She learned whether she should marry him simply by organizing her knowledge of him.

Organizational generative strategies come in two basic forms. The first form is text based. Constructing outlines (organizing content with numbered points and lettered subpoints) and writing summaries (organizing content in paragraph form) serve as examples. As students summarize and outline, they are engaged in the process of imposing a new organization on content. For example, if students summarize a text, they, in one respect, simply are reporting what the text says; but, in another respect, they actively are organizing the content by creating a new form.

Graphical concept maps are the second type of organizational generative strategy. Concept maps allow learners to develop and create a graphical vision of content, which can be particularly useful to students who tend to learn visually. To some extent, professors of economics are already familiar with graphic generative strategies. After all, Euclidian space serves as a graphical space for organizing and representing content, information, and data. Consider a simple demand curve. In practical terms, a demand curve is an opportunity to reorganize text-based information (e.g., as price decreases, quantity demanded increases) in graphical form. The process of reorganizing content helps students consider it in a new, reorganized form. It also helps students consider the information in a new way because now they can see graphically the relationship between price and quantity demanded.

Although it is most familiar, Euclidian space provides only one type of concept map. Other types of concept maps can be equally useful, but each allows students to manipulate information in specific and unique ways. Therefore, students not only need to be aware that concept maps exist, but also they need to understand that different types of maps serve different purposes. Spider maps, for example, provide a tool that students can use to organize content around a central unifying factor. Flowchart concept maps provide opportunities for students to organize content linearly. A specific type of flowchart is the systems map, which allows students to represent content in a linear form but also includes the possibility of illustrating inputs and outputs. Hierarchy concept maps allow students to impose order on content that is hierarchical. We present an example of a hierarchy concept map later in this article. For examples of other types of concept maps, readers may visit <http://classes.aces.uiuc.edu/ACES100/Mind/c-m2.html>.

Integration

Integration is the process of students connecting new information with their existing knowledge—connecting the new with the familiar. As students integrate new

knowledge into their existing knowledge structures, they are building on their own knowledge and constructing a personal understanding of course content.

Writing paraphrases and developing metaphors are two examples of particularly powerful integration generative strategies. Writing paraphrases may seem initially no different than summarizing. There are, however, key differences. Summarizing emphasizes a structure of the content in that it is the content in a shortened form; paraphrasing, on the other hand, emphasizes the integrity of the content. Students should be urged to use their own words to describe content and define terms. In using their own words, students are integrating the content with their own language structures. In short, a student's own words are indicative of a student's own knowledge.

Second, students can integrate new information into their existing knowledge structures by creating metaphors. As Lakoff and Johnson (1980) noted, metaphors are so pervasive in human thinking, people do not even realize that they are thinking metaphorically. To make this point, Lakoff and Johnson pointed out that people routinely discuss time in the metaphorical terms of money and banking (e.g., borrowed time, spent time, saved time, invested time). These metaphors provide a medium for understanding an abstract idea in concrete and more familiar terms. Some content may be so abstract that professors may wish to explain concepts using metaphors. As a generative strategy, students should be creating metaphors as a means of integrating content. To think metaphorically is to make the unfamiliar more familiar by relating new information to what students already know and understand.

Elaboration

Whereas integration generative strategies allow students to make connections between new content and prior knowledge, elaboration strategies help students connect new content with extended information—often coming in the form of real-world events or examples. Said differently, students can go beyond what is in a text or revealed through a lecture. Elaborated information typically is learned and remembered more easily than nonelaborated information (Anderson 1990). Strategies for promoting elaboration include: (1) requiring students to identify real-world examples and manifestations of course content, (2) predicting results and implications of policies or procedures, (3) synthesizing discipline-specific course content with content from other disciplines, and (4) inferring causes for outcomes. Regardless of the specific strategy used, professors should remember that the key is to provide opportunities for students to elaborate on course content by making connections to events and examples that are personally relevant and interesting to them. By making connections with personally relevant content, students are increasing the number of links between the new content and their already existing knowledge (Jonassen 1988). Relevance is contextual and professors should consider ways to help students make relevant connections. For example, economics students on the Mississippi Gulf Coast are accustomed to making connections between economics and the commercial fishing or shipbuilding industries, whereas students from, say, North Dakota may not find as much personal relevance in these connections.

APPLYING GENERATIVE LEARNING STRATEGIES IN SURVEY OF INTERNATIONAL ECONOMICS

Generative strategies have been used in economics classrooms. Laney (1990a, 1990b), for example, applied generative strategies in economics lessons in the elementary classroom. Generative strategies have been shown to increase confidence and decrease misinformation among students in a high school economics course (Kourilsky and Wittrock 1992). On the bases of our review of the literature, we seem to be the first to offer an application for using generative strategies in higher education economics.

We are proponents of using generative learning strategies as an impetus to help students (a) prepare for class, (b) develop a more meaningful understanding of content during class, and (c) reflect on content after a lecture. To illustrate this three-pronged use of generative strategies, we describe their application in a survey of international economics course that engages nonmajors in a foundational study of trade theories, the causes and consequences of protectionism, relevant trade policies, and the role of exchange rates in international relations. To provide some continuity within this description, we base our examples on an international trade article by Coughlin (2002). Although the use of the Coughlin article is a recurring theme, we also provide additional examples that further illustrate the use of generative strategies in the survey of international economics course.

Generative Strategies to Prepare for Class

To gain maximum benefit from a lecture, students must prepare for that lecture, and generative strategies can help them begin to *organize* and *integrate* content prior to hearing the lecture. These generative strategies that serve as homework can take a variety of forms. One form is a structured and targeted assignment that is designed to focus students' attention on primary concepts in a reading. For example, to help students differentiate between common arguments for trade protectionism and economic arguments for trade liberalization as presented by Coughlin (2002), Sharp developed a structured generative strategy (see Appendix A).

The targeted assignment shown in Appendix A has elements of an organization, integration, and elaboration generative strategy. Questions 1–3 are primarily organizational because they obligate students to impose an organization on the ideas in the article. Because the instructions challenge students to paraphrase Coughlin's (2002) ideas in plain and simple language, elements of an integration generative strategy exist, as well. By using their own words, students are making connections between new content, as represented in the Coughlin article, and their previous knowledge, represented by their own words. As noted earlier, a student's own words are indicative of that student's prior knowledge. Question 4 is primarily an elaboration generative strategy because it forces students to make connections between the arguments presented in Coughlin's article and their previous knowledge of public opinion. That is, in answering question 4, students are judging the credibility of economic arguments in light of the opinions of those with whom they normally interact.

Another generative strategy that we recommend to help students prepare for class is the summary/reaction paper. Both summary and reaction create generativity. Summarizing is an organizational generative strategy. Our experiences suggest that, in the absence of organizing content for themselves, students are likely to give short shrift to key course content. When required to summarize an article about the administration of antidumping duties, for example, students are less likely to gloss over the different roles served by the Department of Commerce and the International Trade Commission; they also are less likely to ignore the strategic aspects of the multiple stages in an actual antidumping investigation. Organizing through summary, then, forces students to pay attention to the details of what they read.

Reaction leads to integration, and perhaps even elaboration, on the content presented in a text. Sometimes students might react to an article simply by making connections between that article and content previously studied in the course (e.g., connecting an article about antidumping to other trade remedy laws covered earlier in a semester). These connections can be valuable, and professors should encourage such connections. Perhaps in a more substantive approach, however, professors should encourage students to elaborate on course content by connecting it to the world beyond the walls of the classroom. Such connections are likely to be regional (or even local). For example, in the region where Sharp teaches, many students struggle to reconcile the benefits of free trade with their own sympathies toward the argument that trade protectionism is often necessary to protect local industries from stiff import competition (Burdeauthe 2003). Exacerbating the situation are local media reports that heighten rhetoric and tension—noting that to support free trade at the expense of Louisiana shrimpers is to be a member of the wrong army in “an international war” (Brown 2002). Such connections with regional industry may be even more personal as mill closures and manufacturing job losses affect students’ friends and families both locally (Boone 2001a, 2001b; Cole 2003) and throughout the state (Pittman 2002; Thompson 2003; Powell 2003).

Summary and reaction papers should be explained to students as highly informal writings. In fact, we recommend calling them learning logs to emphasize their informality. Important to the notion of a learning log’s informality, the assignment guidelines emphasize the quality of students’ ideas, while minimizing the importance of grammar, spelling, punctuation, arbitrary length requirements, and overly rigorous approaches to assessing students’ efforts (see Appendix B).

Both generative strategies based on focused assignments and learning logs involve more than students underlining and highlighting as they read. Underlining and highlighting are not considered generative because students simply are selecting the author’s ideas. Neither underlining nor highlighting is indicative of personal connection to the course content. Both targeted written assignments and learning logs, on the other hand, require students to go beyond selecting. As students summarize, integrate, and elaborate, they inherently are making personal connections to course content. Rickards (1979), however, noted that underlining can be generative if students identify the ideas of an author that seem most

relevant to them. We suggest that this type of identifying is only generative if students represent the relevance concretely, such as through concept maps or written text.

Generative Strategies During Class

Many types of generative strategies can be used during a class session. Because we value collaboration among students, we offer examples of prelecture generative strategies that involve group work. Then, we describe examples of generative strategies that can be used during lectures.

Prelecture collaborative generative strategies. Prior to a lecture, a professor might want to provide students with the opportunity to gain a broader understanding of course content. The professor can place students into small groups—we have found that groups of four to six students works best—and ask them to discuss the generative strategies that they completed to prepare for class. For example, the professor might ask students to compare and contrast their written answers to the four questions in Appendix A. These comparisons allow students to gain a broader perspective on the ways that Coughlin's (2002) ideas might be interpreted. A small-group activity like this one might culminate in the professor asking students to generate a brief paragraph that summarizes what they learned from their classmates about the Coughlin article (or the ways the Coughlin article can be interpreted). The broader perspectives that students hear from their classmates and document in their writing can set the stage for a lecture from the professor that is based on even more diverse views about the relative utility of free trade.

Another purpose of having students complete generative strategies prior to a lecture is to help students prepare for lectures by collectively identifying concepts that they did not understand from a reading assignment. To identify topics that necessitate this type of generative strategy, the professor might identify course content that students routinely struggle to understand. For example, Sharp has found that students routinely come to class having gleaned only a cursory understanding of the Standard Neoclassical Trade Model—even if they completed a generative strategy about the model to prepare for class. To hear a lecture with only this cursory understanding can be disconcerting and counterproductive. However, if students work together to generate a list of questions about the components (i.e., concave production possibilities curves, convex indifference curves) and implications (i.e., gains from specialization and trade) of the Standard Neoclassical Trade Model, they are, in effect, engaged in collective organization of concepts that they hope to understand better by the end of a lecture.

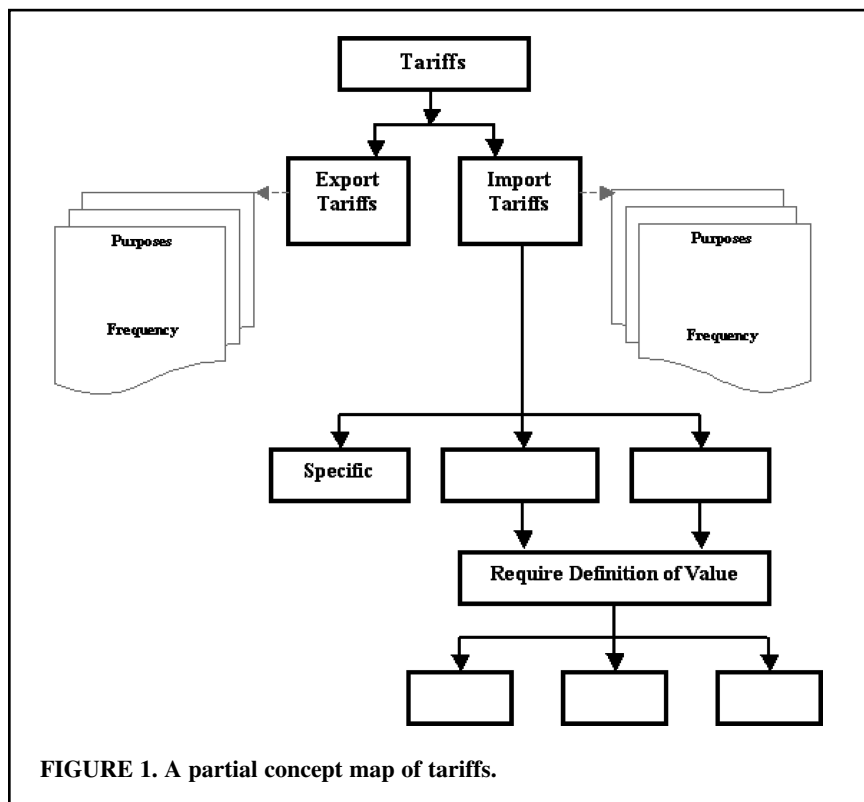
During lecture generative strategies. It may be tempting to view taking notes during a lecture as a generative strategy. But, typically, when students take notes they are copying text and drawings straight from a professor's overhead, PowerPoint presentation, or chalkboard. Copying is not a generative strategy because copying does not evidence organization, integration, or elaboration. In fact, rote copying does not indicate understanding (or even thinking) on the part of students. In pointing to these limitations, we are not suggesting that professors discourage

students from taking notes, only that professors not lull themselves into a false sense of security by believing that note taking affords students substantive opportunities for organizing, integrating, and elaborating.

Professors can build into their lectures opportunities for students to reorganize, integrate, or elaborate on their own lecture notes in meaningful ways. For example, the causes and consequences of protectionism are an important component of the survey of international economics course, and Sharp regularly lectures on this content. In the spring and fall semesters of 2002, he illustrated various barriers to free trade by referring to President G. W. Bush's use of Section 201 (Escape Clause) to place tariffs and tariff-rate quotas on imported steel. After lecturing on the basics of free trade (i.e., tariffs, quotas, VERs, antidumping duties, etc.) and the president's use of the Escape Clause, he referenced the Coughlin (2002) article and asked students to annotate their own notes by generating a hypothesis of what Coughlin would say about the implications of Bush's steel tariffs. Students' hypotheses represented their efforts to integrate new content, as presented in the lecture, with content that was previously covered in the course. Generative learning theory suggests that because of these integrations, students are more likely to develop a stronger understanding of a lecture's content. Early in a semester, professors may need to offer students specific guiding questions or prompts to help them make this type of integrated connection. As the semester progresses and students gain skills in integrating content, however, fewer guides and prompts should be necessary.

Another generative strategy that is useful during lectures is to provide students with a concept map, albeit an incomplete one, that provides an organization for a lecture's content. As a professor lectures, students can complete the concept map as a means of organizing the lecture content for themselves. It is important, when using this strategy, that the professor should not refer to the concept map as a part of the lecture, because that would just result in students copying words to fill in the blanks. An example of a concept map that offers a partial overview of tariffs is presented in Figure 1. Sharp often distributes this concept map to students. During the lecture, he attempts to help students keep up with the organization by using clear transitions in his lectures: "Now that we've considered export tariffs, let's look at the purposes and frequency of import tariffs." However, he makes no direct reference to the concept map, leaving it for students to take the initiative to organize the content graphically.

A word of warning about this use of concept maps: Some students may be adept enough to take notes during a lecture and simultaneously complete a concept map. Such adeptness is rare, because it requires students to multitask as they both take lecture notes and complete the concept map. To support students' efforts better with completing concept maps, professors might occasionally interrupt their own lecture, refer to the concept map, and give students a minute or two to fill in the concept map from the notes that they have been taking during the lecture. Alternatively, professors might give students two copies of a concept map. Students then could use one copy during the lecture to take rough-draft notes, and complete the other copy as an after-lecture generative strategy, a topic we discuss more thoroughly in the next section.



Generative Strategies After a Lecture

Some of the generative strategies that we suggest as being useful during lectures can be useful after a lecture. For example, on the basis of a lecture, students could be asked to generate examples or hypotheses. Students could be asked to convert their notes into concept maps once a lecture has been completed. Also, students collaboratively could identify points within a lecture that need further clarification. We think that additional generative strategies after a lecture can enhance students' understanding of the content that was explained during the lecture. Some of these generative strategies might be short-term strategies completed immediately after a lecture. Others, might involve long-term assignments that are completed over the course of a week or two.

Short-term post lecture generative strategies. After a lecture, professors might simply ask students to submit a short paragraph based on simple, one-sentence prompts akin to those in Chizmar and Ostrosky (1998): "What was the most important thing that you learned from this lecture?" "What was most confusing about this lecture?" Perhaps prompts can be useful if they are more specific. For example, after a lecture dealing with the broad topic of tariffs, professors might ask students to summarize their current understanding of "Definitions of Value,"

specifically mentioning free along side, free on board, and cost insurance and freight. By writing this summary, students are once again engaged in reorganizing and integrating lecture content. Students are reorganizing their own notes (or the concept map they completed). By rewording their notes, the students are further integrating course content by using their own language that is one step further removed from language that the students used when taking notes during a lecture. The experiences of the authors suggest that students often even elaborate within these summaries by including additional examples or ideas that are related to lecture content but go beyond the scope of the lecture. This type of generative strategy is consistent with the ideas of Grabowski (1996), who argued that students who systematically review their notes and generate additional artifacts from their notes are likely to process information more deeply than students who simply take notes during a lecture. Professors might also urge students to include questions or concerns about the lecture material at the end of this summary. These questions serve two purposes. First, they force students to further organize and elaborate on course content. Second, these questions can help inform professors how a lecture might be improved to further enhance students' understanding of the content (Knowlton and Sharp 2002).

Short-term, post-lecture generative strategies might also involve group work. If students, for example, collectively organized a list of difficult concepts from a reading prior to a lecture, professors could ask students to reconvene the groups and answer their own questions based on their new understanding from the lecture. Immediately after the lecture involving barriers to trade, Bush's steel tariffs, and the hypothesized reactions of Coughlin, Sharp also asked students to share their elaborations with a small group of classmates and write brief paragraphs to each other about the appropriateness and relevance of their elaborations.

Long-term post-lecture generative strategies. One standard generative strategy for reinforcing content delivered through a lecture is to provide opportunities for students to integrate the content of a lecture with a real-world example. With the Coughlin (2002) article, Sharp asked students to find real-world examples of the divergent attitudes and opinions toward free trade that Coughlin described. Some students found articles in the *Economist*, the *Wall Street Journal*, and even the local newspaper.

Our experiences suggest that the *Economist* is rife with rich examples of concepts taught in a survey of international economics course. A major component of this course, for example, deals with U.S. trade-remedy laws. Some recent articles in the *Economist* (e.g., "Rust Never Sleeps" 2002; "Steel, Rolled" 2002) have dealt with President Bush's use of the Escape Clause, where as others (e.g., "The Vietnamese Invade" 2001; "The Case of Ghostly Catfish" 2002) have discussed recent U.S. antidumping investigations. During the lecture on trade-remedy laws, specifics on the Escape Clause and antidumping are discussed and examples are provided, but no direct reference is made to the articles in the *Economist*. After the lecture, students are asked to make connections between the concepts introduced in the lecture and the articles. Students are given some freedom on how they represent the connections, but they are asked to prepare an explanation of the connections they made to a group of peers.

CONCLUSIONS AND IMPLICATIONS

We have offered an overview of generative learning and ideas for implementing generative strategies into the day-to-day events of a survey of international economics course. Our ideas create a cycle that prompt students to prepare for class, actively generate artifacts during class, and review content after a lecture. This cycle promotes less reliance on professors' lectures while simultaneously creating more self-reliance among students. We do not suggest that our ideas should be denotatively implemented. Rather, our examples are suggestive of the use of generative strategies in one course. Professors of economics may find that generative strategies are useful in a micro, macro, labor, or any other economics course.

We recognize that we have not presented an empirical defense of generative strategies. Researchers should study the degree to which various forms of generative strategies can improve students' efforts to learn economics. Pedagogically, our experiences suggest that the outcomes of generative learning are encouraging. Initially, students sometimes point to what appears to be an exorbitant workload, especially when the generative learning strategies involve extensive writing (as ours almost always do). Inevitably, though, students note gains in their own learning as a result of generative strategies and recognize their value as a learning tool. As one student commented to one of us, "I find myself completing learning logs in other classes even when they aren't required. They help me make sense of the readings." This type of reaction is not uncommon as graduate and undergraduate students alike have told us that generative strategies prompt them "to read more carefully" and consider course content "more thoughtfully" than they do in courses that do not require generative strategies. Typical comments on the end-of-the-semester evaluations regularly combine the themes of workload and learning: "I've worked harder in this course than any other, but I have learned more than in all of my other economics courses combined."

REFERENCES

- Anderson, J. R. 1990. *Cognitive psychology and its implications*. 3rd ed. New York: W. H. Freeman.
- Barba, R. H., and L. J. Merchant. 1990. The effects of embedding generative cognitive strategies in science software. *Journal of Computers in Mathematics and Science Teaching* 10 (1): 59–65.
- Boone, T. 2001a. Final chapter—Paper mill folds after 89 years. *Sun Herald*, June 23, sec. A, p. 1.
- . 2001b. Rohm and Haas clocks out. *Sun Herald*, December 12, sec. C, p. 8.
- Brown, T. R. 2002. An international war over catfish. *Sun Herald*, April 21, sec. A, p. 9.
- Burdeauthe, C. 2003. Louisiana shrimpers push anti-dumping petition. *Sun Herald*, August 8, sec. A, p. 4.
- Case of ghostly catfish: Threat to a lucrative trade. 2002. *Economist* 35. December 14.
- Chizmar, J. F., and A. L. Ostrosky. 1998. The one-minute paper: Some empirical findings. *Journal of Economic Education* 29 (1): 3–10.
- Cole, N. 2003. Shipley to close Moss Point plant: Announcement deals third big blow to city. *Sun Herald*, March 20, sec. B, p. 7.
- Coughlin, C. C. 2002. The controversy over free trade: The gap between economists and the general public. *Federal Reserve Bank of St. Louis Review* 84 (1): 1–21.
- Grabowski, B. L. 1996. Generative learning: Past, present, and future. In *Handbook of research for educational communications and technology*, D. H. Jonassen, ed., 897–18. New York: Simon & Schuster Macmillian.
- Johnsey, A., G. R. Morrison, and S. M. Ross. 1992. Using elaboration strategies training in computer-based instruction to promote generative learning. *Contemporary Educational Psychology* 17 (2): 125–35.

- Jonassen, D. H. 1988. Learning strategies in courseware. In *Instructional designs for microcomputer courseware*, D. H. Jonassen, ed., 151–81. Hillsdale, NJ: Lawrence Erlbaum.
- Knowlton, D. S., and D. C. Sharp. 2002. Integrated performance reviews in the cumulative case study: Promoting continued learning among students. *Journal on Excellence in College Teaching* 13 (2/3): 1–15.
- Kourilsky, M., and M. C. Wittrock. 1992. Generative teaching: An enhancement strategy for the learning of economics in cooperative groups. *American Educational Research Journal* 29 (4): 861–76.
- Lakoff, G., and M. Johnson. 1980. *Metaphors we live by*. Chicago: University of Chicago Press.
- Laney, J. D. 1990a. Generative teaching and learning of economic concepts: A sample lesson. *Social Studies and the Young Learner* 3 (1): 17–20.
- _____. 1990b. Generative teaching and learning of cost-benefits analysis: An empirical investigation. *Journal of Research and Development in Education* 23 (3): 136–44.
- Lindemann, E. 1995. *A rhetoric for writing teachers*. 3rd ed. New York: Oxford University Press.
- Pittman, R. 2002. Economy frays as Burlington closes its doors: Industry leaves 850 people out of jobs in Stonewall. *Times of South Mississippi*, January 21.
- Powell, B. 2003. State plant-closing rate matching record 2002 year—50 facilities shut, 3,867 jobs lost in Mississippi since January. *Commercial Appeal*, June 26, sec. DS, p. 4.
- Rickards, J. P. 1979. Adjunct post-questions in text: A critical review of methods and processes. *Review of Educational Research* 49 (2): 181–96.
- Rust never sleeps. 2002. *Economist* 57–58. March 9.
- Sharp, D. C. 2003. Problem-based learning in an MBA economics course: Confessions of a first-time PBL user. In *Problem-based learning for the information age*, D. S. Knowlton and D. C. Sharp, eds., 45–51. San Francisco: Jossey-Bass.
- Steel, rolled: A trade war averted or just a temporary truce? 2002. *Economist* 54. August 31.
- Thompson, R. 2003. Georgia Pacific closing costs 170 jobs. *Commercial Appeal*, April 4, sec. C, p. 2.
- Vietnamese invade: A feline-piscine trade fight. 2001. *Economist* 35. October 6.
- Wittrock, M. C. 1974. Learning as a generative process. *Educational Psychologist* 11 (2): 87–95.
- _____. 1990. Generative processes of comprehension. *Educational Psychologist* (4): 345–76.
- _____. 1992. Generative learning process of the brain. *Educational Psychologist* 27 (4): 531–41.
- Wittrock, M. C., and K. Alesandrini. 1990. Generation of summaries and analogies and analytic and holistic abilities. *American Educational Research Journal* 27 (3): 489–502.

APPENDIX A: GENERATIVE STRATEGY FOR UNDERSTANDING FREE TRADE

The purpose of this generative strategy is to give you an opportunity better to understand arguments about the value of free trade and to form some opinions about arguments for and against free trade. Free trade will be the topic of next week's lecture. Consider the article "The Controversy Over Free Trade: The Gap Between Economists and the General Public," by C. C. Coughlin. Based on your understanding of this article, please answer the following four questions:

- (1) Why do most economists support free trade?
- (2) Why does the general public tend not to support free trade?
- (3) What are three approaches suggested by Coughlin to move public opinion toward free trade?
- (4) Which approach do you think would be most effective in convincing your family and members of your community to support free trade? Why do you believe it would be the most effective? (Feel free to make the argument that none of the approaches would be effective. If you go this route, offer explanations of why members of your family and community are likely to reject each of the arguments.)

Make sure that you (a) answered all four of the above questions; (b) answered these questions in your own words (i.e., no copying or quoting from the Coughlin article); and (c) used plain and simple language such that an average high school student will understand (i.e., perhaps creating a simple analogy, metaphor, or allegory will help you make the concepts in this article more understandable).

APPENDIX B: LEARNING LOG ASSIGNMENT

The learning log assignment in this course is based on the concept that organizing readings and connecting those readings to your own experiences will help you better understand international economics. As you write each log, please consider the following guidelines:

- Word-process each entry. (However, do not spend any time editing. Your ideas are more important than correctness.)
- Write a brief **summary** of the reading. Use a heading of “Summary” to show where your summary begins. Your summary might only be a paragraph or a list of major points that the article covered.
- Write a **reaction** to the article. Use a heading of “Reaction” to show where your reaction begins. Your reaction paragraphs could be—but are not limited to—a discussion of any one of the following:
 - How the ideas in the article fit or don’t fit ideas from other sources.
 - How the ideas fit or don’t fit with your prior experiences.
 - Why you disagree with the ideas presented in the article or why the ideas make you uncomfortable.
 - Why you think other business students would benefit from reading the article.
 - Why the ideas in the article surprised you.
 - How these ideas could be tested.

If you choose a type of reaction not listed above, be sure that you are clear about the purpose of your reaction. Regardless of the point of your reaction, use *specific details* as support for what you write. Avoid the temptation to simply regurgitate the author’s ideas without reacting to them.

Consider the following thoughts about your learning log:

- Long length does not equal high quality.
- Your log should help you prepare for lectures and other class activities. Your logs also might be useful to you in future courses and other pursuits, so don’t throw them away; who knows: They may save you from having to read the exact same article twice.
- On each log, I will mark a “+” for a superior, a “√” for good, and a “—” for unsatisfactory. At the end of the term, grades will be based on (a) the total number of entries that you submitted, and (b) the quality of the entries.