1994 AASL Research Grant Award Interim Report: The Information Search Process: A Study of Cognitive Strategies for Teaching Higher-Level Thinking Skills [think]

Kathleen Garland

Kathleen Garland is Assistant Professor of the School of Information and Library Studies at the University of Michigan, Ann Arbor.

(reprinted courtesy of Libraries Unlimited from *School Library Media Annual*, c.1995)

The ability to find, examine, and use information in a variety of situations involves complex skills and thinking processes that are needed by all students and that are useful in all areas ofthroughout life. Students must develop higher-level cognitive strategies to construct meaning from a variety of resources. "A great deal has been written about the need to teach students to use cognitive strategies in all areas of the curriculum. However, little reliable information is available on how to teach these higher-level strategies."[1]

Purpose of the Study

This study is breaking new ground by examining teaching strategies that may contribute to an authentic, effective research task. It is part of a long-term study in which students are being asked to gather information from a variety of sources and construct their own meaning from the informationit. The study was funded from 1992 to 1994 by the Michigan Partnership for New Education, which has recognized this project as "a valuable contribution to teaching for understanding." The study is being jointly funded during the current school year, 1994-95, by the AASL/Highsmith Research Award Grant and by the Michigan Partnership for New Education.

Results of this inquiry will have direct application to the teaching and learning process in a multitude of academic subjects and situations. Results of this study will provide insight into cognitive strategies useful for teaching information literacy skills. Results will also provide information relating student achievement and satisfaction to the degree of involvement of a library media specialist collaborating with classroom teachers in several different areas of the curriculum. Library media specialists in other settings will easily be able to replicate the strategies.

Research Questions

Research questions being addressed in this study are:

1. How does increased involvement by the library media specialist in teaching specific cognitive strategies affect students' achievement and satisfaction with their learning?
2. How does teaching specific strategies for a) determining the usefulness of information,

b) understanding information, and c) organizing information affect students' achievement and satisfaction with their learning?

3. Which teaching strategies are most successful in terms of students' achievement and satisfaction with their learning?

4. How do teachers perceive a) the effectiveness of the strategies, b) the heightened focus on process, and c) the increased involvement of the library media specialist in teaching cognitive strategies?

Cognitive Strategies

"No rules exist, as yet, for developing cognitive facilitators,"[2] but we have used information gleaned from successful experimental studies and from our own exploratory studies in developing three types of strategies to examine for effectiveness: graphic organizers, shared reading and responses to reading, and checklists. These strategies serve to guide students through the research process. Graphic organizers include matrices and webs. Shared reading and responses to reading include discussion of information by pairs or small groups of students who are working together on the same topic. Checklists include questions or statements that are answered or checked off when attended to or completed.

Findings from student interviews in our 1992-93 study indicate that graphic organizers and shared reading and responses to reading were judged to be successful by students in the classes that used them. Although checklists have been used in previous studies to help students check for understanding, more research is needed to determine their usefulness.[3]

Activities

Currently, qualitative and quantitative data from interviews and surveys are being collected. Six classes having double sections of heterogeneously grouped students are being studied as they proceed through one of their research assignments. In other words, a total of twelve classes are participating in this study. One section is "exposed" to a particular cognitive strategy and the other is not. Each one of the two sections is similar in terms of student population and is taught by the same teacher or team of teachers. By setting up the study in this way, we aim to discount teacher and student variables as contributing to any differences found between the two groups.

At the present time, four classes are involved in the study. Two are in a tenth-grade college prep English class that was called “Honors English 10” prior to this school year, and two are in an eleventh-grade interdisciplinary course that is taught in a three-hour block. The interdisciplinary course includes chemistry, government, and English.

Every student in the participating classes fills out a brief one-page survey before and after completion of the research assignment. Questions relate to the cognitive strategies used and to satisfaction with achievement. In addition, between three and six students in every class are being interviewed. They represent high, average, and low achievement on the project. Achievement will be defined by the students' teacher(s).

Teachers are being interviewed to answer the fourth research question. They are working with

the library media specialist to plan and implement the research tasks.

Currently, there is great concern about the need to teach higher-level thinking strategies. This study, which will conclude in June 1995, is examining the potential contribution of the library media specialist working cooperatively with teachers to teach these cognitive strategies.

Notes

1. Barak Rosenshine and Joseph Guenther, "Using Scaffolds for Teaching Higher Level Cognitive Strategies," in *Teaching for Thinking*, edited by James W. Keefe and Herbert J. Walberg (Reston, VA: National Association of Secondary School Principals, 1992), 35.
2. Ibid., 39.
3. Ibid., 43.