Active Learning Beyond the Classroom

“Attending class is akin to regular religious observance: The ritual or sermon is less important for what it teaches directly than for its motivational impact on what believers do between services.”

Joseph Lowman

“Encourage students to get notes from classmates who tend to do well in your classes, who know how to study for tests. Have them work together on their studies.”

Physical Education professor

Teamwork

Most teachers would agree with the maxim that “he who teaches is twice taught,” and research has shown the effectiveness of peer teaching and teamwork for enhancing learning. However, in the American educational system (at least above kindergarten) we emphasize the importance of individual study and independent work. Some professors have discovered that requiring their students to form study groups improved student performance in class and on examinations. (Given the strong tradition of independent study, the extra trouble involved, and the natural resistance to change, the formation of groups is usually successful only when it is made a requirement.) Groups of four to six work well, but even students who study in pairs benefit from the experience.

Even carrying a full course load, students spend a relatively small proportion of each week in class, usually about fifteen hours. And many students, perhaps most students, spend less than the expected two hours of study for each hour spent in class. How do they occupy their time outside of class? According to a national survey of college students (Boyer, 1987), almost 30 percent of full-time students work 21 or more hours a week; 31 percent devote more than ten hours a week to informal conversations with other students; 33 percent watch television for more than seven hours a week; 38 percent spend between three and ten hours in leisure reading; and 47 percent participate in some type of organized student activity, consuming another three to ten hours a week. The same survey revealed that one out of four undergraduates spends no time in the library during a normal week, and 65 percent use the library for four hours or less each week. Yet research shows that “time on task” is a critical factor in learning; the greater the amount of time spent working on a subject, the greater the learning.

Clearly, students find many more interesting things to do on a college campus than coursework, but perhaps the question we should ask is whether the out-of-class work we require of our students is interesting enough to motivate them to spend more time on their coursework. If we devise challenging assignments that promote active involvement in learning our students might find coursework at least as interesting as the other activities that compete for their time. In this issue of For your consideration we will offer some suggestions for active learning outside the classroom.

Although law students usually form study groups spontaneously, undergraduates need help in setting up their groups and advice about the best procedures to follow in order to maximize the benefits of group study. You can, for example, provide study guide questions to help them focus on the most important elements of the lessons and encourage the groups to devise questions of their own that they can bring up in class. Here are a few guidelines that you could distribute to the study groups:

- Meet at the same time and place every week. Following a routine reinforces the habit of study.

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In order to make the study sessions more effective and efficient, choose a group leader. The leader is responsible for: keeping the group “on task” by monitoring digressions and other time-wasting activities, insuring that everyone gets a chance to participate in the group’s work, and occasionally delegating work to various group members.

If an individual in your group consistently fails to prepare or to take an active part in the work, he/she can be asked to drop out of the study group.

Combine your group’s lecture notes into a set of master notes, discuss the key ideas in each lecture, and highlight these ideas in the master notes for individual review.

Take turns asking each other questions about the assignments, making sure everyone has a chance to ask and answer questions. One way to focus this activity is to construct sets of test questions (based on the types of questions in old exams) and use these items to quiz one another. (Depending upon the nature of the course, the type of course material, and the expectations of the teacher, other kinds of study activities can be suggested to students.)

Teachers who use small groups in class sometimes require that the groups hold study sessions outside of class. Obviously, once groups are formed for one educational purpose there is no reason they couldn’t be used for another. (See the last issue of FYC for a discussion of small groups.) If you would like to try to incorporate study groups into your courses, the staff of CTL would be glad to assist you in developing guidelines and procedures.

For example, some teachers require that students keep journals or diaries in which they record their reflections on the course, material which confuses them, and their discoveries and insights. The journals are turned in for review every two weeks so the teacher can write comments and suggestions in the margins. Keeping a journal forces students to think more cogently about the course and their own learning—they become actively engaged in the process of education.

If a teacher makes the journal a basic course requirement (which must be fulfilled in order to pass), journals which show little thought or work are returned for rewriting until they are acceptable. This strategy allows students to express their thoughts freely without having to worry too much about spelling, punctuation, or a grade; it also gives the teacher insight into the student’s thought processes so he/she can precisely target helpful advice.

When teaching English, English as a second language, or foreign languages, I use interactive journals because the students gain confidence from being able to communicate, to use the language in a meaningful format.

English and Romance Languages professor

Some teachers grade their student journals using subjective criteria: cogency of thought, relevance to the course, quality of writing, and depth of insight. But if student journals are made an integral part of the course (containing homework assignments, small research projects, short essays, and similar work), specific grading criteria are easier to identify and students are more likely to accept the journal assignment as a legitimate part of their coursework. In every case, however, teachers should provide detailed instructions and a clear rationale for the journal, since students are generally unaccustomed to introspection about their courses and need guidance in this area.

The use of journals in mathematics classes has been shown to reduce math anxiety and improve performance. Research indicates that math students who verbalize their difficulties in writing are able to understand and solve problems they could not solve before (King, 1982). But student journals are suitable for courses in all areas of the curriculum—they have been used successfully in history, business administration, physics, math, history, and sociology (Griffin, 1982).

A future issue of FYC will be devoted to other kinds of writing assignments, both in-class and out-of-class, with examples of applications in various disciplines.
Experiential Learning

As the result of a number of recent studies of higher education, a number of authorities have begun to question the reliance on the classroom and the library as the only proper environments for learning (Boyer, 1987; Astin, 1985). The college classroom is an appropriate arena for some kinds of learning, but it is not a place where students can gain first-hand knowledge of the world. Moreover, the traditional emphasis on classroom/laboratory/library learning subtly conveys the message to students that they cannot learn anything outside of those narrow confines. Since the world cannot be brought into the classroom, the students need to be sent out into the world. Recently, more teachers have begun to integrate experiential learning activities into their courses by requiring that students participate in internships and other community-based activities.

Activities

• A UNC professor, teaching a course dealing with issues of race and poverty, arranged with local social welfare agencies and community service organizations to place his students in volunteer positions. For these students, sterile statistics and theories were translated into the gritty realities of the real world.

• In a course on urban geography at San Francisco State University, students choose a specific area of the city to study, compile land-use maps, conduct surveys, and assess the social and economic impact of proposed changes for the area.

• At the University of California at Berkeley a professor teaching “Media and Society” arranges working internships for her students in Bay Area newspapers, magazines, and broadcasting stations. Students keep a journal or a field notebook which is submitted bi-weekly to the instructor, and are also responsible for writing a paper which shows evidence of practical experience and academic inquiry.

• In a course entitled “Writing and Editing,” students at the University of California, Los Angeles, intern with local businesses and agencies—hotel chains, radio and TV stations, law offices, government agencies, museums—where they apply writing, editing, and word-processing skills learned in the classroom. Students are evaluated by both the instructor and the site supervisor.

CTL’s files contain many examples of courses in which students become actively involved in the subject matter by working in the world beyond the university campus. If you teach a course in which you could include experiential activities, the CTL staff would be happy to work with you in designing the program.

Student Research

Most undergraduates never have an opportunity to engage in the kind of research that their teachers practice. Often they are given assignments which keep them from contact with the complexities and confusions of the research world (and hence from the real excitement of research: the joy and pride of discovery). Researching a term paper in Davis Library for a sociology or history course bears only a superficial resemblance to the kind of research sociologists or historians actually perform. Nor does working the exercises in a laboratory manual have much in common with the laboratory work of a professional chemist, physicist, or biologist.

Several UNC professors in the social sciences have structured their courses entirely around research projects in which students must develop hypotheses, gather and analyze data, and report upon their discoveries. Although the level of research is not as sophisticated as that performed by the faculty, it is sufficiently complex to give students a taste of the real thing. Similar assignments are possible in the natural sciences as well. For example, at the State University of New York at Cortland, beginning students in a general chemistry lab work in small groups to design lab procedures and experiments rather than repeat pre-structured exercises.

Undergraduates at UNC are not often asked to assist faculty members in their research. But professors who do use them report that the experience tends to raise student interest dramatically (and, as a consequence, increases their level of performance). Even if they play a relatively small part in that research, they gain a deeper appreciation of the nature of faculty research work and they learn the reasons why faculty perform research. Some students report that their experiences assisting faculty in “real” research was the high point of their undergraduate career.

Of course, students must be properly prepared to collaborate in such work and they need careful instructions about the nature of the research and the canons of scientific inquiry. But, given appropriate training, they can perform many research functions as effectively as
graduate students. For example, they have conducted surveys and interviews, recorded data from laboratory experiments, assembled bibliographies, observed social interactions and physical phenomena, and have even tabulated experimental data. Their growing sophistication in the use of microcomputers will increase the possibilities for using undergraduates in faculty research projects.

Almost every student who starts on a research project thinks that what you suggest that they do is going to work. We know the chances of it working are extremely small. It's frustrating until they recognize that's what happens most of the time, but they learn that science is really about problems—not just lab exercises and stuff in books.

Chemistry professor

CTL, the College of Arts and Sciences, and Student Government sponsored a seminar series this semester in which the final session dealt with student learning in a research university. The discussion in that session revolved chiefly around the issue of teaching undergraduates how to do research and the ways some teachers have met the challenge. The seminar was videotaped and is available for viewing in the Center.

The last two issues of For your consideration have been devoted to active learning because we feel that learning is not a spectator sport. As Arthur Chickering, a noted authority on undergraduate education, recently wrote:

“Students do not learn much just by sitting in classes listening to teachers, memorizing pre-packaged assignments, and spitting out answers. They must talk about what they are learning, write about it, relate it to past experiences, apply it to their daily lives. They must make what they learn a part of themselves.”

Bibliography


