

The Art and Craft of Teaching

Margaret Morganroth Gullette, Editor

Ideas, techniques, and practical advice for communicating your knowledge to your students and involving them in the learning process

"A wonderful book about the practicalities of teaching."

— BOSTON GLOBE

The Art and Craft of Teaching

Edited by Margaret Morganroth Gullette

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Preface

Few might expect a book about teaching to emerge from the Faculty of Arts and Sciences at Harvard University. While generations of students have been taught by gifted and talented teachers, those teachers have seldom written about the process of teaching. It was considered an art to be practiced rather than a set of skills to be discussed. But this has been changing.

In 1975, with the support of President Derek Bok and a three-year grant from the Danforth Foundation, the Harvard Center for Teaching and Learning was established. There were some grumblings. One senior member of the faculty recommended returning the grant, because accepting it implied that teaching at Harvard was less than ideal. In spite of an occasional protest, an overwhelming majority of the faculty readily agreed that college teaching is one of the few professions for which no training is provided, and that this should be changed. With the goal of helping faculty, especially young faculty, to develop the necessary skills, the Center developed a range of programs. One question was whether Harvard instructors would get involved in them. That question has now been answered by thousands of teachers, who have. And in 1980, by vote of the faculty, the Center was given a permanent status.

In the eight years of its existence the Center's programs have involved instructors in various ways. Over a hundred gifted Harvard professors, for example, have participated in our Professional Training Series (a series of panel discussions about many aspects of teaching). The stellar roster has included John Kenneth Galbraith on "How I Could Have Done Much Better," David Riesman on "The Role of Teaching in the Scholarly Life," and B. F. Skinner on "Writing and the Teaching of Writing." The list is extensive and impressive; it also includes William Alfred, Bernard Bailyn, Daniel Bell, Andrew Gleason, Stephen Jay Gould, Stanley Hoffmann, Wallace MacCaffrey, Edwin Reischauer, Barbara Rosenkrantz, Henry Rosovsky, Judith Shklar, Frank Westheimer, and James Q. Wilson. These presentations have been preserved on videotapes so that they will continue to be available to generations of teachers.

Another major element of the Center has been the work of the Video Laboratory, where teachers of all ranks can have their classes videotaped. Reviewing one's tape with a counselor leads to significant and observable changes in teaching behaviors and styles. When we contrast the initial taping with subsequent ones, everyone—beginning with the instructor—can easily see the improvements that have taken place. Instructors find this highly encouraging, and it also raises their ratings on student evaluations.

Our work is now sufficiently mature that we have begun a research program to understand the teaching function better. Using our collection of videotapes, we are examining gender differences and helping teachers to avoid gender stereotypes. We are also exploring muddles—situations when everyone talks at once—and finding out who causes them, and showing how to take control.

Of all the workshops, orientations, and seminars that the Center has sponsored, no program has been more memorable than the faculty seminar offered by C. Roland Christensen. President Bok, who had suggested to Professor Christensen that his seminar on teaching at the Business School would be a useful experience for instructors in the Faculty of Arts and Sciences, also had the idea of producing a collection of essays on teaching to be written by participants in the Christensen seminar. *The Art and Craft of Teaching* was created with the aim of making their common know-how available to a larger audience. We hope you find it valuable.

Dean K. Whitla
Director, Harvard-Danforth Center
for Teaching and Learning

Introduction

C. Roland Christensen

This is a book about the practicalities of teaching. We are exposed to teaching throughout our lives; many of our readers (perhaps all of you) have chosen it as your vocation. Despite this exposure and this intention, many teachers know little about teaching, or feel that they know little about it, or both. We hope that you will finish reading this book with new confidence and new resources.

In the first essay, James Wilkinson states our aim as teachers, describes our most common problem of preparation, and finally states the authors' objectives in producing the present book:

In order to avoid the pitfalls of poor teaching, teachers themselves must learn to communicate what they know and respond to the needs of their students. Teaching skills, like private student projects, are often assembled at random. The following chapters are an attempt to do for the teacher what formal instruction does for the student: provide a struc-

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ture, initiate a dialogue, and propose new standards of excellence and a "sense of style."

When President Eliot gave his inaugural address in 1869, he reviewed the Harvard scene and concluded that "the problem to be solved is not what to teach but how to teach." The problem of 1869 is still with us 115 years later; we make progress slowly. In an effort to solve the problem with more appropriate speed, President Bok and the Harvard-Danforth Center for Teaching and Learning, under the direction of Dean Whitla and Margaret Gullette, have been engaged for the past eight years in a program to improve instruction. That program is already having an impact on Harvard's teaching standards.

As one part of this program, the Harvard-Danforth Center and the Harvard Graduate School of Business Administration have since 1976 sponsored a seminar on discussion-leading, which I teach. It has been an enjoyable collaborative effort, which brings together discussion teachers from the Faculty of Arts and Sciences and many professional schools.

This seminar, "Developing Discussion Leadership Skills," has been based on a number of critical assumptions. First, and most important, we took as given that the instructor had an in-depth command of the knowledge and/or skills he or she wished to teach, as well as a command of basic course concepts and organization. Second, we assumed that the course dealt with material where discussion—teacher-to-student and student-to-student dialogue—was a critically important part of the teaching and learning process. Finally, we assumed that the instructor was sincerely interested in helping students learn.

Given those three circumstances, our hypothesis was that effective section teaching was dependent on the artistry of the instructor, that that artistry/skill consisted of mastering details, and that those skills could be observed, abstracted and taught to other instructors. The longer I have taught, the more I have been fascinated by those aspects of discussion leadership which manifest themselves in class after class: which student's hand should the instructor recognize, what type of question should be asked at what time, what kind of response should the instructor make to various specific student comments, what does one write on the greenboard, when does one summarize, and how does one "pace" the class in discussion? Personal observation of countless discussion sessions, enriched by the contributions of several hundred participants in Business School semi-

nars, produced a “bank” of skills, techniques and attitudes which we thought would be of use to instructors in a wide variety of academic fields. One could, we concluded, teach discussion teaching.

The eight authors of these essays were all colleagues in this Harvard-Danforth Center/Harvard Business School teaching seminar. Each author brings understanding and experience to the topic about which she or he is writing. All are professionals devoted to the improvement of their fields—disciplines which range from economics and history to sociology and ethics.

Their advice is not abstract, but directly related to what they have experienced in the classroom. While writing the book, they also met over a period of months in a remarkable collaboration—a series of argumentative, thorough and frank discussions about teaching in which they compared experiences, discussed formulations, and worked toward a consensus on the central points at issue. Later, everyone had the opportunity to comment on everyone else’s essay. Each essay retains its own lively individuality, and the divergences of point of view can be illuminating. In general, the collection offers the cumulative wisdom of the group on a range of essential topics.

Many of my seminar participants have observed that the typical book about teaching has been of limited value to them in the early stages of their teaching careers. The problem may be that the teacher-authors tend, very understandably, to write about the latest challenge they have faced and conquered. The curious beginner, however, would typically like to learn first what the teacher-authors learned first: the chance of using the advice in an actual class is much higher. It is for this reason that all of the articles in this book are written to, and about, the problems and opportunities faced by new instructors. You will find that the essays deal with many of the basic issues you will be facing in the next weeks and years. But do not close the volume even if you already have many years of experience in the classroom; there is always something to learn from dedicated teachers who have taken the time to analyze and explain their procedures. And read on even if you prefer to lecture; several chapters are addressed directly to lecturers, and the others may help you to expand your repertory of teaching styles.

The first chapter introduces us to a typology of different teaching methods. Jim Wilkinson in his “Varieties of Teaching” postulates that different kinds of learning require different

methods of teaching and reviews with us the strengths and weaknesses of each method. Jeff Wolcowitz next gives us many suggestions for planning the first class meeting. In detail, he demonstrates how critical it is to establish a workable teacher-student contract, both by explicit "game rules" and by your own classroom behavior. Heather Dubrow and Jim Wilkinson then consider "The Theory and Practice of Lectures." Their concluding recommendation, to have one or two of your lectures videotaped, is an extremely practical suggestion.

The next two chapters are devoted primarily to various aspects of a course that is run mainly through discussion. Appropriately, Tom Kasulis' lead-off chapter concerns "Questioning." Questions and the responses to questions provide the core of any discussion; they are the discussion leader's primary educational tools. What Tom Kasulis does is to illustrate the infinite complexity of asking a simple question and of responding effectively to students when they answer.

The delicate role of the section leader as a link between professor and student is explored in Ullica Segerstråle's chapter. She outlines the multiple functions and challenges of the section instructor and concludes:

The secret of section leading is not the thorough mastery of the material by the section leader and the transfer of her or his interpretations to the students, but the creation of a context of *organized spontaneity*. The good section leader gives the students opportunities and incentives to express themselves and develop skills within the otherwise somewhat passive context of a lecture course.

Chapter Six, "The Rhythms of the Semester," should be not only read but savored. Laura Nash's hypothesis is that "the richness of a course will depend largely on the professor's willingness to perceive the semester as a teaching unit, and develop the course to exploit its unity." Using the imagery of the dance, she invites us to explore her thesis:

The component parts of the semester can be likened to the parts of the dance performance, with the melody equal to the subject matter, the staging to the classroom, the mode to the distinctive academic style of the professor, and the dancers to those who participate in the class: students and teacher. Timing, pace, theme, and variation—the formal components of a musical score and its performance—might well be applied to the semester. . . . Thus the teacher is transformed from presenter of wisdom to dancer and composer, responsible for the music and for the way in which the dancers all work their art.

Heather Dubrow, in Chapter Seven, shifts our attention from classroom leadership of a discussion to the instructor's role in helping individual students improve their writing skills—clearly a critical responsibility of any academic institution. Her suggestions for working with students on writing skills are detailed and practical; we all can use her wisdom.

In Chapter Eight Chris Jedrey deals with an important challenge for all instructors—the necessity of evaluating performance and assigning grades. Grading is not a task enjoyed by most academics. It is especially difficult in a discussion setting. As Chris Jedrey points out:

What are we grading—frequency of comments, enthusiasm, ability to forward the discussion or the individual tour de force—and how? . . . In any case, in a section with twenty or thirty or more students any attempt to evaluate individual contributions to the discussion fairly will require some sort of record-keeping system.

And, in this complicated business of evaluation/grading, we might do well to remember what Walter Jackson Bate wrote in his biography of Samuel Johnson:

There is a tendency in human nature, whenever we are considering the lives of others, to expect them to proceed at a far brisker pace than we ourselves do, not because we are uncharitable but because our vicarious interest is better able to notice results than to share the actual process and daily crawl of other people's experience.

Bate's plea is not for "softness" or minimal standards; rather, he reminds us to understand the difficulty—even pain—which many experience in the learning process.

Finally, Dick Fraher deals with the central problem: how do we as teachers learn? He gives special attention to the support resources available to a beginning teacher. His secondary theme concerns the evolving role of the instructor as she or he moves through the early years of a teaching career. In considering these subjects he provides support for the ideas advanced earlier in the book by Ullica Segerstråle and Laura Nash.

Dick Fraher appropriately concludes this book on the theme of the learning teachers must attempt. The ultimate test of your classroom abilities may well be not how much you have taught, but how much you have learned and the degree to which your students have learned to learn.

Henry Merritt Wriston, the eighth President of Lawrence University, put the point well in his inaugural address:

A student does not come to college primarily to learn things, to store an intellectual garret with an assortment of odds and ends. He comes to college to learn how to learn, what to learn, where to learn and why to learn.

Arnold Schoenberg makes the point within a wider teacher-student context in the Foreword to the *Harmonielehre* (1922):

What is in this book was learned from my pupils. When teaching it was never my aim merely to tell the pupil what I know. Rather, what *he* did not know. But even that—enough in itself to make me invent something new for each pupil—was not the main thing; I strove to show him the essence of the matter starting from the simplest things. So, as far as I was concerned, there were never these rigid rules which so conscientiously entwine themselves around the pupil's brain. Everything was broken down into instructions, which bind the pupil no more than the teacher. If the pupil can do it better without the instructions, then let him do without them. But the teacher must have the courage to be wrong. His task is not to prove infallible, knowing everything and never going wrong, but rather inexhaustible, ever seeking and perhaps, sometimes finding. Why want to be a demigod? Why not, rather, be a complete man?

To close on a more personal note: welcome to a joyous profession. Teaching, for this instructor, is the greatest of all vocations, for it keeps one well anchored to the world of youth, growth, ideas, search and learning. And teaching is especially exciting in those courses where the discussion mode is the primary educational tool. Providing guidance for the discussion of an article, a book, a poem or an economic problem is a stimulating intellectual assignment. The opportunity to open minds, to develop lines of reasoning, to debate points of view provides one with the opportunity to be an everyday alchemist.

Many students of teaching would say, quite accurately, that after all is said, we don't know the final formula for effective teaching—we can't explain why some instructors have success while others have so many difficulties. And if we know little about teaching we know even less about learning. My favorite description of this complicated interactive process is a paraphrase of a statement by Amy Lowell:

Teaching is like dropping ideas into the letter box of the human subconscious. You know when they are posted but you never know when they will be received or in what form.

The hope of all connected with this book is that these essays will give you some preliminary guidance on the challenges of teaching, and respect for the beauty and generosity involved in leading an effective discussion.

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Varieties of Teaching

James Wilkinson

It is a mistake to assume that all college learning occurs in the classroom. College students learn in many ways; most are able to learn readily and happily even when left to themselves. With nothing but personal interest to spur them on, they may explore the novels of Jane Austen, collect fossils, or immerse themselves in local politics. Informal contacts in the college community, ranging from casual conversations over coffee to deep and lasting friendships, introduce them to ideas and values that may prove as important for their education as their formal course of study. Such unstructured learning is actively promoted by the many American colleges and universities that require undergraduates to live in residence for part or all of four years and that provide space and funds for extracurricular activities. Education, they acknowledge, is not confined to the classroom alone.

What, then, does the teacher contribute to the process of learning that students cannot supply on their own? At least three important things. As the intermediary between the class and a body of knowledge, he or she offers each student structure, evaluation, and support. Structure comes through the teacher's ability to anticipate the likely trouble spots ahead, and willingness to help students find and maintain a realistic pace until they have mastered (or at least reviewed) a coherent body of work. The insights that come from unsupervised reading and extracurricular activities, however intense, are often random experiences; they cannot duplicate the careful sequence and sustained growth of ideas fostered by a well-crafted course. The

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teacher also provides the critique and stimulation of dialogue. Students will be required not only to absorb the instructor's explanations but also to answer questions, to defend a position or react to criticism. Such probing often reveals fundamental gaps in knowledge or misconceptions that must be pointed out before they can be corrected. Finally, a teacher's interest and encouragement can play a crucial role in motivating students to reach beyond self-imposed limits. By participating in the give and take of a learning community, under the guidance of an experienced leader, students share in group resources that usefully supplement their own, and must confront standards that can be ignored or evaded when studying alone.

The concept of "structured dialogue," then, defines education on its most basic level. Through it the teacher seeks to train students in certain skills—writing, textual analysis, quantitative reasoning—that cannot be learned in the abstract, divorced from specific subject matter. The causes of the French Revolution, Hamlet's attitude toward his father, the properties of quadratic equations or the function of hemoglobin hold center stage during the course. Yet except for the small number of students destined to become historians, Shakespeare scholars, mathematicians, or biochemists, the lasting value of what is taught is likely to be a general set of mind that remains even when the particulars of the subject matter have become blurred. William James noted the importance of what he termed "transfer of training"—taking skills learned in one context and applying them to another. Such general skills and attitudes are what the student will retain long after most dates, facts, and equations have been forgotten or superseded.

The number of desirable goals to which teachers may devote their efforts is very large, and teachers by no means agree about their relative merits. Yet at the heart of college teaching, many would argue, lies the attempt to transform how students observe and interpret the world. The teacher's aim is to help them assume an active and creative relationship with their daily environment by developing skills in the three areas of perception, analysis, and expression. By the end of their college years students should be able to identify and define the specifics of a problem or topic, make judgments about their value and importance, and convey those judgments with sufficient clarity that others readily grasp what they mean. The skills and qualities of mind required for these complex operations they will continue to develop and refine for the rest of their lives.

Basic to any intellectual achievement is curiosity—variously described as the “desire to know,” or the “urge for discovery.” Many students already possess this capacity when they arrive at college, and need only to have it confirmed and nurtured. But this is not always easy. All too often, as freshmen adjust to the formal requirements of academic life and lose their awe of its institutions, they lose sight of the curiosity that brought them there as well. In addition, teachers must in some cases try to awaken a dormant curiosity that has remained asleep even during secondary school; poor teaching at a lower level requires truly superior teaching in college for its effects to be overcome. We also want students to develop a tolerance for the complex and the ambiguous that few have attained before they enter college. To acknowledge the validity of competing and often contradictory points of view, to accept the limited nature of what can be known with certainty, to resist the temptation to reduce the world to simplistic categories of good and bad, white and black—all this requires a sophistication that must be acquired gradually. The teacher’s difficult task is thus to keep the student’s initial drive and enthusiasm intact while thwarting her or his desire to be content with easy answers.

The teacher also needs to awaken and encourage a critical outlook—skepticism toward unproven assertions, a fine eye for tautologies and self-contradiction—that will serve as a testing mechanism for all that the student encounters. “How do we know?” should become a question that the student asks without prompting. During adult life, Descartes’ methodical doubt will prove to be a fundamental asset. At the same time, such criticism implies an alternative standard. It is up to the teacher to demonstrate what that standard is. This can be done primarily by introducing the student to examples of excellence—whether embodied in a sonnet, a code of laws, or a mathematical proof—and by examining their virtues in sufficient detail that they become familiar to the class. Even if students themselves cannot achieve work on this level, its existence serves as a touchstone for judging the efforts of others later on.

The art of expression is cultivated more explicitly in the college setting than are skills of perception or judgment. From freshman English composition to senior honors theses, students are called upon to articulate their thoughts and are graded on the result. But while paper comments can provide them with important lessons on the fine points of spelling, word choice, and use of sources, the larger questions of structure and analysis

are often harder for them to grasp, and require correspondingly greater emphasis. How to argue a point and not simply present data; how to link arguments in a logical chain; how to sum up with a sure sense of what is essential and what is merely extrinsic to your case are skills that require coaching and practice. In addition, students need to be helped to present their ideas with grace and to strive for the control, confidence, and economy of means that help make up what Alfred North Whitehead once termed a "sense of style." Here models play as crucial a role as they do in the concept of excellence.

Just as different kinds of learning take place in a college community, so there exists a variety of teaching formats as well—each best suited to conveying a particular combination of skills and attitudes. The three principal vehicles for college instruction are the lecture, the laboratory session or field trip, and the discussion class. Although they share the same general aims embodied in the "structured dialogue," the teaching approach that each type of instruction requires is in some ways unique. A good lecturer may experience problems leading a successful discussion; the discussion leader skilled in asking questions may feel ill at ease when conducting a monologue from the lecture podium. But it should be a teacher's goal to master the full scale of teaching styles, and to know the strengths and drawbacks of each. The balance of this chapter will consider teaching in a comparative context. What are the special characteristics of the tools at the teacher's command?

The immediate advantage of lecturing lies in the clarity of exposition and the breadth of coverage that it allows. Especially as an introduction to a field, lectures can convey a great deal of material efficiently and memorably to a large number of listeners. Thus they are also well suited to demonstrate the art of expression. A lecture that is logically ordered and carefully paced offers students a model of how to subdivide a topic into smaller units and arrange them intelligibly. The aesthetic element inherent in a good lecture—clarity, wit, variety, the revealing detail and the dramatic conclusion—constitutes practical training in a "sense of style." At the same time, the lecturer who conveys a spirit of excitement and who stimulates the student to go further in pursuit of some more specialized area of concern aids in developing curiosity and appreciation for complexity. Every lecture provides a chance to show students the pleasure and exhilaration that come from an imaginative encounter with ideas.

To a greater degree than the leader of a discussion course, the teacher in a lecture hall enjoys direct control over what happens there. She or he decides what topics to present, in what sequence, and in what detail. He or she must also provide the energy that brings the class to life and keeps it lively. A bad lecturer will make poor use of this opportunity for control and allow the class to lose its concentration, succumbing to boredom and perplexity. But even a good lecturer cannot create an extensive dialogue between teacher and student. The same control and responsibility that characterize the lecturer's role inevitably mean that the student's participation will be largely passive. While students may ask questions after class or during office hours, they can reply to lectures only on examinations or in papers. The strength of the lecture is in presenting an example and in generating a stimulus, not in shaping the response. It solicits further work, but does not in itself demand it. For all its focused energy and dramatic power,¹ the lecture alone cannot meet all pedagogical needs.

Because of this, many lecture courses are accompanied by laboratory sessions, field trips, or discussion meetings. All these extend and complement the lecturer's formal presentation. Labs and field trips offer the great advantage of direct contact with the materials discussed in lecture. But in addition to their illustrative value, they can play a major role in training perception. The phenomena that the students confront outside the lecture hall, whether plant specimens, examples of town planning, or a Cézanne still life, possess a complexity and richness that force the students to discriminate between first impressions and underlying patterns, between form and detail. Equally important, students can recognize the distance that separates raw data from the schematic clarity of a lecture diagram. Discovering how few experimental readings lie directly on the predicted curve is a first step toward learning how to relate conceptual categories to an untidy reality. The notebooks, sketches, and laboratory reports that students may be required to submit as the semester progresses allow the instructor to follow their growth in this direction and, where necessary, to offer needed correctives. And as a monitor of student responses, the section leader can alert the lecturer if he or she perceives a major area of difficulty that should be taken up before the class as a whole.

1. For a more detailed discussion of lecturing, see Chapter Three, "The Theory and Practice of Lectures," by Heather Dubrow and James Wilkinson, pp. 25-37.