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*Educating the  
Reflective  
Practitioner*

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*Donald A. Schön*  
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# Educating the Reflective Practitioner



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EDUCATING THE REFLECTIVE PRACTITIONER  
*Toward a New Design for Teaching and Learning in the Professions*  
by Donald A. Schön

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# Preface

In the early nineteen-seventies, when William Porter, then dean of the School of Architecture and Planning at M.I.T., asked me to join a study of architectural education under his direction, I did not anticipate the kind of intellectual journey I was in for. It is a journey that has occupied me for well over a decade, drawn me into debates over the present situation and future prospects of professional education, and caused me to rethink and reconnect ideas that date back to my Ph.D. thesis on John Dewey's theory of inquiry.

In the early stages of the journey, I planned a book on professional knowledge and education. Later, it became clear to me that it would be necessary to split the book in two. In the first part, published in 1983 as *The Reflective Practitioner*, I argued for a new epistemology of practice, one that would stand the question of professional knowledge on its head by taking as its point of departure the competence and artistry already embedded in skillful practice—especially, the reflection-in-action (the “thinking what they are doing while they are doing it”) that practitioners sometimes bring to situations of uncertainty, uniqueness, and conflict. In contrast, I claimed, the professional schools of contemporary research universities give privileged status to systematic, preferably scientific, knowledge. Technical rationality, the schools’ prevailing epistemology of practice, treats professional competence as the application of privileged knowledge to instrumental problems of practice. The schools’ normative curriculum and separation of research from practice leave no room for reflection-in-action, and thereby create—for educators, practitioners, and students—a dilemma of rigor or relevance. The argument of *The Reflective Practitioner* implies a question: What kind of

professional education would be appropriate to an epistemology of practice based on reflection-in-action? I left the question unanswered there, to be answered here. In this volume, I propose that university-based professional schools should learn from such deviant traditions of education for practice as studios of art and design, conservatories of music and dance, athletics coaching, and apprenticeship in the crafts, all of which emphasize coaching and learning by doing. Professional education should be redesigned to combine the teaching of applied science with coaching in the artistry of reflection-in-action.

Beginning with a study of architectural education, I take architectural designing and the design studio as prototypes of reflection-in-action and education for artistry in other fields of practice. The generalized educational setting, derived from the design studio, is a *reflective practicum*. Here, students mainly learn by doing, with the help of coaching. Their practicum is “reflective” in two senses: it is intended to help students become proficient in a kind of reflection-in-action; and, when it works well, it involves a dialogue of coach and student that takes the form of reciprocal reflection-in-action.

In Part Two I describe the dynamics of a design studio, with its paradox and predicament of learning to design, rituals of instruction, and styles of coaching artistry. Then, in Part Three, I explore variations on a reflective practicum in three other contexts—master classes in musical performance, psychoanalytic supervision, and a seminar (taught for several years by Chris Argyris and me) in counseling and consulting skills. These explorations highlight similarities in the processes by which students learn—or fail to learn—the artistry of a designlike practice. They also point out how learning and coaching vary with the medium and content of practice. I describe the threefold structure of the coaching task and illustrate models of coaching (“Follow me!” “joint experimentation,” and “hall of mirrors”) that place different demands on the competence of coach and student and lend themselves to different learning contexts.

Finally, in Part Four, I turn to some of the implications of these ideas for redesigning professional education. I argue from an analysis of the current predicament of the professional schools that redesign is necessary—indeed, long overdue. And I conclude with the story of a modest experiment in curriculum reform that suggests what may be involved in implementing the idea of a reflective practicum.

I have found it necessary here to cover some of the ground already covered in *The Reflective Practitioner*; my argument about education for reflective practice depends on the epistemology of practice articulated in the earlier book. So the first two chapters set out, in revised form, the view of professional knowledge presented there. The model of designing described in Chapter Three appeared in its entirety in *The Reflective Practitioner*. But the discussion of the design studio as a reflective practicum in Part Two, the examples and experiments described in Part Three, and the treatment of implications for professional education in Part Four, are all substantially new.

I would like to say what I have *not* tried to do in this book. I have not considered how the teaching of applied science might best be combined with a reflective practicum. (I have an idea about it—that applied science should be taught as a mode of inquiry like and unlike the reflection-in-action of a skillful practitioner—but I have only touched on it here.) I say little here about wisdom in response to the ethical dilemmas of practice in bureaucratic institutions where professionals spend increasing amounts of time. Nevertheless, in Part Four, I am concerned with institutional forces that restrict discretionary freedoms essential to the exercise of wisdom and artistry alike. And I believe that education for reflective practice, though not a sufficient condition for wise or moral practice, is certainly a necessary one. For how are practitioners to learn wisdom except by reflection on practice dilemmas that call for it?

My emphasis is on the positive side of education for practice. I mainly ask, What goes on in a reflective practicum when it is working well? I have mostly chosen examples of

coaching and learning where a coach's skills and understandings seem to me worth emulating. I am aware, however, that this is not always the case. There is a negative side to teaching (Israel Scheffler calls it a "dark side"). So I also present some "horrible examples" of coaching. And I also ask, What are the generic difficulties inherent in a reflective practicum? How may these be overcome? What can go wrong? How might things be done better? I consider how students can steer a course between overskepticism, which prevents their learning anything, and overlearning, which causes them to become true believers. And I consider how coaches may become more sharply aware of the potentially destructive effects of the "help" they offer.

This book is intended especially for individuals in schools or practice settings—practitioners, teachers, students, and educational administrators—who are concerned with education for reflective practice. But it is also intended for all those who share a lively interest in the elusive phenomena of practice competence and artistry and the equally elusive processes by which these are sometimes acquired.

Like *The Reflective Practitioner*, this book is a primer. My hope is that some readers, especially in the faculties of the professional schools, will use it to extend and develop the inquiry I have begun.

### Acknowledgments

It is literally true that I am indebted to more people than I can name. Among the persons who have been most helpful to my efforts to work through the argument of this book are Chris Argyris, Jeanne Bamberger, and Martin Rein. Israel Scheffler and Vernon Howard and their colleagues in the Philosophy of Education Seminars at Harvard University gave me valuable opportunities on several occasions to present and discuss earlier versions of this work. At M.I.T., the Design Research Group—including professors Louis Bucciarelli, Aaron Fleisher, John

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Turning now to specific chapters, Roger Simmonds furnished me with the protocol of the design review in Chapter Three; I am indebted to discussions with him, Florian Von Buttlar, Imre Halasz, Julian Beinart, and, most of all, William Porter, for their help in discovering what the protocol was about. Jeanne Bamberger suggested the example of a master class considered at length in Chapter Eight and gave me the benefit of her many fruitful ideas and equally fruitful criticisms.

David Sachs, a good friend for many years and a notable psychoanalyst, has instructed me in the ways of psychoanalytic practice and supervision. His articles, coauthored with Stanley Shapiro, figure prominently in Chapter Nine. Chris Argyris was my collaborator in the seminars described in Chapter Ten and joined me in writing that chapter—the most recent of our many collaborations.

E. H. Ahrends of Rockefeller University invited me to attend a series of meetings, under his sponsorship, from which I first got the idea of the “professional squeeze play” described in Chapter Eleven. And I am grateful to several colleagues in the M.I.T. Department of Urban Studies and Planning—Donna Ducharme, Bennett Harrison, Langley Keyes, Tunney Lee, Amy Schechtman, Mark Schuster, and Lawrence Susskind—for partnership in the experiment described in Chapter Twelve and helpful criticisms of my attempts to decribe it.

I have also greatly profited from many opportunities to give talks and workshops on the themes of this book, at professional schools and other institutions, in this country and abroad. Some of the material in Part Two was first presented in 1978 at the University of British Columbia as the Cecil Green Lectures for that year. In 1984, the Royal Institute of British Architects provided me with a grant to support my studies of architectural education and a forum from which to present their results. An earlier version of the chapter on psychoanalytic supervision was presented in 1985, under the auspices of the Chicago Institute for Psychoanalysis, as

the first Littner Memorial Lecture. Other parts of this book were first presented, in 1985, as the Queens Lectures at Queens University in Kingston, Ontario; the Harvard University Graduate School of Business Colloquium on Case Teaching in the spring of 1985; and the Leatherbee Research Lecture, at the same institution, in spring 1986.

Finally, my warm and heartfelt thanks to Marion E. Gross, who has had the unrewarding job of initiating me into the mysteries of word processing and who prepared this manuscript with conscientiousness well beyond the call of duty.

*Cambridge, Massachusetts*  
*November 1986*

Donald A. Schön



# The Author

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In his work as a researcher and consultant, Schön has focused on organizational learning and professional effectiveness. For seven years previous to his appointment to the faculty at M.I.T., Schön served as president of the Organization for Social and Technical Innovation (OSTI), a nonprofit organization which he helped to found. He has served in numerous other administrative and consultative roles with governmental agencies and private industry.

In 1984, Schön was Queens Quest Lecturer at Queens University and was also made an honorary fellow of the Royal Institute of British Architects. In 1970, he was invited to deliver the Reith Lectures, which were broadcast by the British Broadcasting Corporation. Schön's publications include *The Reflective Practitioner* (1983), *Organizational Learning: A Theory of Action Perspective* (1978, with Chris Argyris), and *Theory in Practice: Increasing Professional Effectiveness* (1974, with Chris Argyris). Schön is active in a number of professional organizations and is a member of the American Academy of Arts and Sciences Commission on the Year 2000 and the National Research Council Commission on Sociotechnical Systems.



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## *Part One*

# Understanding the Need for Artistry in Professional Education

The two chapters of Part One are intended to set the stage for subsequent discussion of the design studio in architecture and variations on the idea of a reflective practicum in other fields of practice.

Chapter One describes the dilemma of rigor or relevance that calls for a new epistemology of practice and a rethinking of education for reflective practice. It presents, in brief, the argument of the book as a whole.

Chapter Two presents the ideas central to my understanding of reflective practice: knowing-in-action, reflection-in-action, and reflection on reflection-in-action. It explores the relations of these ideas to practice artistry and describes the general properties of a reflective practicum.



## Chapter One

# Preparing Professionals for the Demands of Practice

### **The Crisis of Confidence in Professional Knowledge**

In the varied topography of professional practice, there is a high, hard ground overlooking a swamp. On the high ground, manageable problems lend themselves to solution through the application of research-based theory and technique. In the swampy lowland, messy, confusing problems defy technical solution. The irony of this situation is that the problems of the high ground tend to be relatively unimportant to individuals or society at large, however great their technical interest may be, while in the swamp lie the problems of greatest human concern. The practitioner must choose. Shall he remain on the high ground where he can solve relatively unimportant problems according to prevailing standards of rigor, or shall he descend to the swamp of important problems and nonrigorous inquiry?

This dilemma has two sources: first, the prevailing idea of rigorous professional knowledge, based on technical rationality, and second, awareness of indeterminate, swampy zones of practice that lie beyond its canons.

Technical rationality is an epistemology of practice derived from positivist philosophy, built into the very foundations of the modern research university (Shils, 1978). Technical rationality holds that practitioners are instrumental problem solvers who select technical means best suited to particular purposes. Rigorous professional practitioners solve well-formed instrumental prob-

lems by applying theory and technique derived from systematic, preferably scientific knowledge. Medicine, law, and business—Nathan Glazer's "major professions" (Glazer, 1974)—figure in this view as exemplars of professional practice.

But, as we have come to see with increasing clarity over the last twenty or so years, the problems of real-world practice do not present themselves to practitioners as well-formed structures. Indeed, they tend not to present themselves as problems at all but as messy, indeterminate situations. Civil engineers, for example, know how to build roads suited to the conditions of particular sites and specifications. They draw on their knowledge of soil conditions, materials, and construction technologies to define grades, surfaces, and dimensions. When they must decide *what* road to build, however, or whether to build it at all, their problem is not solvable by the application of technical knowledge, not even by the sophisticated techniques of decision theory. They face a complex and ill-defined *mélange* of topographical, financial, economic, environmental, and political factors. If they are to get a well-formed problem matched to their familiar theories and techniques, they must *construct* it from the materials of a situation that is, to use John Dewey's (1938) term, "problematic." And the problem of problem setting is not well formed.

When a practitioner sets a problem, he chooses and names the things he will notice. In his road-building situation, the civil engineer may see drainage, soil stability, and ease of maintenance; he may not see the differential effects of the road on the economies of the towns that lie along its route. Through complementary acts of naming and framing, the practitioner selects things for attention and organizes them, guided by an appreciation of the situation that gives it coherence and sets a direction for action. So problem setting is an ontological process—in Nelson Goodman's (1978) memorable word, a form of worldmaking.

Depending on our disciplinary backgrounds, organizational roles, past histories, interests, and political/economic perspectives, we frame problematic situations in different ways. A nutritionist, for example, may convert a vague worry about malnourishment among children in developing countries into the problem of selecting an optimal diet. But agronomists may frame the problem

in terms of food production; epidemiologists may frame it in terms of diseases that increase the demand for nutrients or prevent their absorption; demographers tend to see it in terms of a rate of population growth that has outstripped agricultural activity; engineers, in terms of inadequate food storage and distribution; economists, in terms of insufficient purchasing power or the inequitable distribution of land or wealth. In the field of malnourishment, professional identities and political/economic perspectives determine how people see a problematic situation, and debates about malnourishment revolve around the construction of a problem to be solved. Debates involve conflicting frames, not easily resolvable—if resolvable at all—by appeal to data. Those who hold conflicting frames pay attention to different facts and make different sense of the facts they notice. It is not by technical problem solving that we convert problematic situations to well-formed problems; rather, it is through naming and framing that technical problem solving becomes possible.

Often, a problematic situation presents itself as a unique case. A physician recognizes a constellation of symptoms that she cannot associate with a known disease. A mechanical engineer encounters a structure for which he cannot, with the tools at his disposal, make a determinate analysis. A teacher of arithmetic, listening to a child's question, becomes aware of a kind of confusion and, at the same time, a kind of intuitive understanding, for which she has no readily available response. Because the unique case falls outside the categories of existing theory and technique, the practitioner cannot treat it as an instrumental problem to be solved by applying one of the rules in her store of professional knowledge. The case is not "in the book." If she is to deal with it competently, she must do so by a kind of improvisation, inventing and testing in the situation strategies of her own devising.

Some problematic situations are situations of conflict among values. Medical technologies such as kidney dialysis or tomography have created demands that stretch the nation's willingness to invest in medical services. How should physicians respond to the conflicting requirements of efficiency, equity, and quality of care? Engineering technologies, powerful and elegant