

# **Engaging Minds**

## **Learning and Teaching in a Complex World**

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## Opening Words



**Fig. 0.1.** Classic icon of the relationship between teacher and student, one of the more prominent and long-standing emblems of education is the apple.

It is also a symbol that can be used to point to some emerging sensibilities in discussions of learning, teaching, and learning to teach.

The selection of an image for the cover of a new book is usually among the final tasks for authors, undertaken near the end of the production process.

For us, the idea of using the picture of an apple tree was one of our first points of agreement as we began the project that has become this text. Our intention in writing was to assemble an introduction to recent developments in discussions of learning, pedagogy, and schooling, one that could be used to prompt examinations of the complexities of teaching while refusing simplistic notions or unresolvable tensions that sometimes infuse popular debates.

So conceived, it's no surprise that we settled on an image involving an apple: Newton's apple has become a symbol of sudden insight, Eden's apple has become a symbol of the perils of knowing, and the apple on the corner of a desk has become a symbol of the relationship between learner and teacher. Nor would a tree be unexpected, given the pervasiveness of this image in discussions of schooling — including, for example, trees and branches of knowledge, roots and growth of understanding, seeds and fruits of learning.

But the image has deeper meanings for us: To begin, apples and apple trees aren't autonomous forms, but aspects of more complex systems. They are embedded in larger ecologies of relationships. To understand why an apple tree produces such an abundance of fruit, for example, we must consider the life of the tree in relation to the life of the forest of which it is a part. An apple tree is caught up in webs of exchange, providing shelter and sustenance for insects and birds and mammals. They, in turn, pollinate its blossoms, distribute its seeds, and fertilize its roots. The interdependencies extend even further, as these living forms participate with others in the interchange of oxygen and carbon dioxide and in the movement of water around the planet — aspects of seasonal patterns and annual cycles that unite ground and sky, organic and inorganic, life and death, past and present.

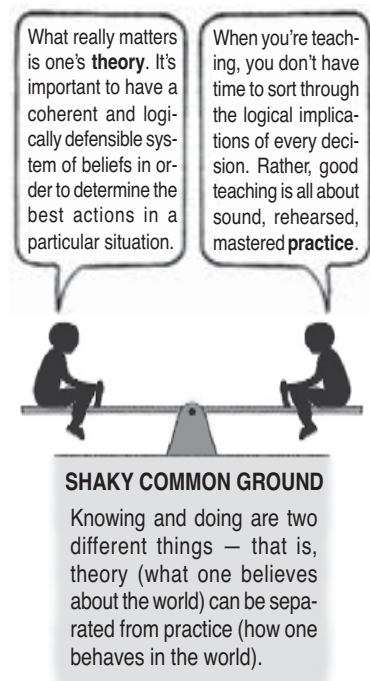
In social terms, the modern apple tree is, in many ways,

a living record of recent human history. Most of the apples that we find in our supermarkets are hybrids of Asian and European species, reflecting cross fertilization of not just plant varieties, but of civilizations over past centuries. Moreover, in its engineered flavor and texture, as well as in its size and unmarked surface, each apple bears a trace of intertwined historical events and social movements, including industrialization, urbanization, capitalism, and modern science.

More subtly, the very form of a tree is a record of its flow through time. Its precise pattern of branches on branches is simultaneously unpredictable and familiar. It is similar to the branching patterns that we see in other trees, in their roots, in the veins of their leaves, in river deltas, in lightning bolts, and in brain neurons. Yet it is utterly unique, a still-forming product of the interlocked and complex dynamics of climate, other living forms, and information once contained in a tiny seed. For us, then, the form of a tree is a reminder of the patterns that connect living forms to one another. More important, the image reminds us of the complexity of every moment.

Awarenesses of these complex webs of interdependence, emergence, and form reach deeply into the history of human understanding, evident in the myths and the folklore of virtually every society. But it is only recently that such appreciations have returned to the fore in discussions of academic matters, having been eclipsed for centuries by habits of precise definition, unambiguous classification, and linear logic. Such has certainly been the case in discussions of what it means to educate. In university bookstores and professional libraries, the shelves set aside for texts on teaching are often dominated by thick tomes that speak authoritatively to such well delineated concerns as lesson planning, classroom management, evaluation procedures, and questioning strategies. Such categories are often fragmented even further into specific technical proficiencies which are then presented as the foundations of practice. These points project a conception of “good teaching” as they find their ways onto the checklists that have so often been used to assess beginning teachers.

We have had a great deal of experience with these checklists in our careers as public school teachers and, more recently, in our work with pre-service teachers. Most disconcerting to us have been those moments of working with



**Fig. 0.2.** This image can be found in several places in this book. It is used to serve two interrelated purposes: First, it points to some of the more prominent debates in popular discussions of learning and teaching. Second, it is used to

highlight how the conflicting opinions represented in many of these debates often rest on the same sorts of (troublesome) assumptions.

In this case, for instance, an all too common worry in teacher education is an emphasis on *theory* at the expense of *practice* (or, sometimes, vice versa). Such a concern relies on the belief that the two can be separated.

We reject such an assumption in this text. Instead, we work from the premises that all practice is theorized (that is, all actions derive from particular ways, explicit and tacit, of seeing the world) and that all theory influences practice (that is, how we think influences how we act, although not always in obvious or conscious ways).

Hence, to wonder if this is a book about *theory*, a book about *practice*, or a book about bringing the two together, is to miss the whole point. Theory and practice should never have been pried apart.

teacher candidates who seem to do everything “by the book” — that is, who offer clear learning objectives, who pace lessons well, who distribute questions evenly, and so on — but who are plainly ineffective in their roles. Impeccable lessons are created and implemented, but often only by ignoring the contingencies of the classroom. It has been especially disturbing for us to realize how checklists and “How to Teach” manuals have contributed to this deflection of attention away from children’s learning and onto teachers’ performances.

Recent discussions of the nature and processes of learning have presented a challenge to the reductive, fragmenting mentality underlying checklists, lesson plan formats, evaluation rubrics, and similar artifacts. Emerging from such seemingly disparate domains as anthropology, neurology, sociology, psychology, mathematics, computer science, cultural studies, ecology, and biology, there has been a confluence of ideas around the embedded nature and adaptive dynamics of that complex process that is called *learning*. This confluence of thought has helped to uncover some of the self-perpetuating and uncritical “common sense” about learning and teaching that is used to structure and defend schooling practices.

Linked to these emergent notions, new webs of interpretation about what schooling does, what learning is, and who teachers are have come to the fore over the past few decades. Across these influences and perspectives, new ways of talking about learning and teaching have arisen, ones that locate formal education in a complex ecology of unfolding events. Such discourses have revealed the poverty of management-oriented and skills-based conceptions of instruction as they have offered more engaged, participatory, and organic senses of teaching.

It was our aim in creating this text to develop these ideas into a wide-ranging but coherent discussion of what it means to teach. Our tack has been to focus not on teaching, but on learning: What is learning? What is its relationship to teaching? What theories and beliefs are in circulation, and how do these notions enable or constrain one’s teaching?

Our principal strategy in this project is to focus on the language used to frame educational worries. Specifically, we attempt to interrupt the reductive certainty that is implied in more instrumental accounts of schooling. Rather

than presenting a facade of confident assurance around questions of what it means to educate, in fact, we approach tentatively the complex phenomena of learning and teaching — an attitude that we have attempted to foreground in some playful use of language. Such terms as “Engaging Minds” and “Opening Words” are intended to highlight the necessary ambiguity of language. Interpretable both as noun phrases (objects) and as verb phrases (actions), such headings reflect the necessary conditions for movement and growth — that is, the coupled capacities to fix and unfix, to anchor one’s step in order to push into the next. “Opening Words,” for instance, is more than an “Introduction” to the book. It is also intended to flag our emphasis on interrogating the habits of thinking that are implicit in the language used to describe learning and teaching.

That is, “Opening Words” and our other titles point to the conviction that a change in how we teach must be accompanied by a change in vocabulary: We must be atten-

### Troubling Habits

A main focus of this text is language. As authors, we work from the conviction that the words and images that are used to describe learning and teaching compel particular ways of acting — ways that are not always sound.

Consider, for example, the metaphor that is embedded in the increasingly common phrase, “the business of schooling.” In this figurative frame, learners are cast as consumers or clients, education is a product, teachers are labor resources, and knowledge is a commodity.

This cascade of metaphors could be easily extended. In fact, it often is, although not always consciously. For instance, if one accepts that schooling is a business, then it suddenly seems appropriate to expect that there be some system of “quality control” in place — and, indeed, that very phrase is often heard in reference to all-too-common batteries of formal examinations. Going further, the overarching metaphor of “school as business” could be used to argue for cost effectiveness and resource use efficiency. Not surprisingly, these phrases have come to be used in justifications of cutbacks in educational funding, in-

creases in class sizes, reductions in preparation time, and so on.

In the process, many of the major concerns of schooling are eclipsed. For instance, the roles of the school in the making of culture and in the formation of learners’ identities are ignored. Moreover, knowledge is frozen into a *thing* and teaching is reduced to transmission — moves which, as we develop in this book, are not simply inadequate descriptions, but often patently wrong.

Unfortunately, many of these notions are tightly woven through our language. Hence, the process of investigating habits of mind is more involved than simply offering new metaphors for such matters as learning, mind, identity, teaching, and so on. Rather, it also demands an engagement in the very difficult task of interrogating habits of thought that are deeply inscribed.





**Fig. 0.3.** The term *lock-in* has recently been used to name a quality that is typical of any dynamic collective — whether a collective of neurons, organs, people, species, or whatever.

For these complex forms, some patterns of acting come to be so habitual or ritualized that they can refuse alteration, even if the viability of the system is at stake. For humans, the notion applies on several levels — and, in particular to the tendency for belief and interpretive systems to become so familiar that they're not just imagined to be correct, but the only structures possible.

The book might be described as an attempt to highlight some instances of lock-in in modern schooling practices.

tive to the webs of meaning that are knitted into habits of description. We thus write from the premise that new words and different ways of speaking are needed in order to open up new possibilities.

That means that we are unable to offer this text as a definitive work on teaching. Quite the contrary, it is presented as a contribution to an unfolding conversation about what it means to educate and to be educated. That being said, the book is intended to be helpful to teachers. We do give specific advice on matters of preparing for teaching, working with learners, and so on. But such advice is not in the form of rules and guidelines aimed at controlling learning. Rather, it is about complexity and indeterminacy — about creating the conditions that are necessary for engaging minds.

### The Book's Structure

The book is organized into a weave of five parallel chapters, each of which is comprised of three sections. Section A of each chapter, our "Working Ideas," is used to present and develop conceptual matters. The foci of these sections include perception, cognition, ability, identity, and language, as such topics relate to questions of learning and teaching.

Each of these opening discussions is followed by a Section B, "Telling Experiences." These are accounts of learning and teaching drawn from our own experiences as educators and educational researchers. The occasions described are not, in our opinion, especially exceptional. They are, rather, events during which particular sensibilities were enacted, ones that we feel are consistent with each chapter's particular focus.

Sections C of the chapters, "Interpreting Events," are attempts to develop some fairly specific suggestions for teaching. These discussions are used to elaborate some of the principles presented in the opening sections and to translate some of the specificities of the second sections into recommendations that we believe are informed, defensible, and practical. With them, we aim to offer rather specific advice to teachers with regard to such matters as preparing for teaching, interpreting student responses, and so on. At the same time, however, we refuse to reduce these principles to recipes and procedures. As such, there are no

templates to help plan lessons, there are no procedures for managing classrooms, there are no taxonomies for classifying questions. Instead, there is advice that we feel renders such technocratic formulations problematic.

Lest we be misinterpreted here, our suggestion is not that lesson plans and management strategies are bad things. Quite the contrary, none of us has ever entered a classroom without some specific preparation and some well-honed abilities to organize learning. Rather, our point is that such worries are often born of and sustained by particular, fragmented beliefs about what it means to teach. A more complex, ecologically minded attitude toward teaching, we suggest, prompts different emphases, ones that elaborate without denying concerns for technical competency.

Our point, then, is that lesson planning, classroom management, and so on cannot be considered as isolated topics. By way of illustration, a classroom activity that permits learners to adapt the task to their specific levels of understanding would mitigate the needs to remediate slow learners and to otherwise occupy advanced learners — which is to say, many *management* problems derive from planning strategies that are too rigid for the diversity that is present among any group of learners. Similarly, *lesson planning* is an immense worry if teaching is understood to be a performance, rather than a matter of enabling learning. Our refusal to treat such intertwined matters as

### Weaves and Texts

The word *text* derives from the Latin *textura* (web) which, in turn, comes from the Latin verb, *texere* (to weave).

There is a certain irony in this etymology that has to do with one of the major criticisms of conventional academic work. Understood as reliant on the printed text — which is sometimes seen as a unified, relentlessly linear, straightforward, uncompromising genre — such writings are often condemned as limited and limiting.

We agree and we disagree. On the one hand, we do see a problem with the rigidly linear rational argument that was so powerfully enabled by the written word. On the



other hand, we understand language to be an evolving form and texts to be woven into the complex lives of individuals and cultures. In spite of appearances, then, the written word is never really static, never completely linear.

In this text, we use a number of strategies to underscore these points. For instance, our five chapters are each divided into three parallel sections in a manner that might be interpreted in terms of horizontal and vertical strands of a weave. As well, we have inserted side notes and inset boxes to highlight points, to elaborate, and to otherwise prevent the illusion of a linear read.

isolatable is thus not a denial of their importance, but an attempt to highlight the complexities of learning and teaching.

The book ends with a section entitled “Reading Possibilities.” In this list of references, we acknowledge some of the important influences on our thinking. In effect, this section represents our attempt to shift the focus onto the broader web of thought in which various ideas have come to form while providing direction to those readers interested in more fully developed discussions of the issues at hand.

The book is not intended to be read from start to finish. Chapters can be considered in any order, as can their sections. We have, in fact, inserted deliberate interruptions to the flow of the text, in the forms of margin notes and inset boxes. These moments are intended as much to interrupt the linearity of the writing as they are to highlight and elaborate particular points in the text. That is, to the extent possible, we have attempted to present a resource that, true to the origin of the word *text*, is a weave, a web of relationships.