Chapter One

Lessons on Learning

What I have come to believe about learner-centered teaching grew out of a serendipitous confluence of events and experiences. I will highlight three of the most important, roughly in the order in which they occurred, although all three overlap and are so intertwined that a stream-of-consciousness recounting would more accurately reflect the nonorder of their occurrence.

In 1994, after almost fifteen years of working in faculty development, disseminating educational materials, a variety of administrative assignments, and teaching the occasional upper-division and graduate courses, I returned to the classroom to teach entry-level required courses to beginning students. It was a sort of a midlife career move. As I took stock in midcareer, I realized that the most important and personally satisfying work I had done, the work with the greatest chance of making a difference, was work I completed in the classroom. I decided to return, finishing out my career as it had started, by teaching undergraduates.

At that time, I was motivated not to teach as I had during the first years of my career. Students had changed, and much more was known about their learning needs. As I thought about the beginning communication course I was to teach, it seemed to me that what prevented students from doing well was a lack of confidence. They needed to find their way past self-doubt, awkwardness, and the fear of failure to a place where they could ask a question in class, make a contribution in a group, and speak coherently in front of peers. It came to me that I might address the problem by making the students feel more in control. Would it help if I

presented them with some choices and let them make some of the decisions about their learning?

That first semester back, I tried this approach. I designed a beginning public speaking course that had only one required assignment: students had to give one speech. The rest of the syllabus presented a cafeteria of assignment options: a learning log, group projects of various sorts, credit for participation and the analysis of it, critiques of peers, conducting an interview or being interviewed or both, and conventional multiple-choice exams. Each assignment had a designated point value and evaluation criteria. Students could opt for as many or as few assignments as they wished, given the course grade they desired. Each assignment had a due date, and once past, that assignment could not be completed.

Initially, students were totally confused. I remember arguing with one about whether the exams were required. Here is how the conversation went:

"They must be required," the student insisted. "If the test is optional, no one will take it."

"Sure they will," I replied. "Students need points to pass the class."

"But what if I don't take it?"

"Fine. Do other assignments, and get your points that way."

"But what do I do on exam day?"

"Don't come to class if you aren't taking the exam."

Several students asked me to identify the assignments they should do, and virtually everyone wanted some sort of approval once they finally decided.

But what happened the rest of that first semester took my breath away. I had no attendance policy, but better attendance than in any class I could remember. More (not all, but most) students started to work hard early in the course, and some students determinedly announced that they would do every assignment if that was what it took to get enough points for an A. I was stunned by how willing they were to work, and with no complaints. Less concrete but no less real was the change in atmosphere and energy in the class. These students were committed to the class; they appeared genuinely interested in the content. They asked more questions, sustained discussion longer, and in the end disagreed with

me and other students far more than I remembered my former beginning students doing. It was not instructional nirvana, but it was a decided improvement, and I was motivated to continue refining this approach.

Early in my experimentation with the course, I was asked to review a manuscript under contract with Jossey-Bass and subsequently published as *Becoming a Critically Reflective Teacher* (Brookfield, 1995). Few other publications I read before or since have so dramatically influenced my pedagogical thinking. The book took me in two different directions. (I describe the second later in this chapter when I get to the third major event that motivated me to write this book.)

Through Brookfield's book, I discovered how much about teaching can be learned by and through critical reflective practice. Brookfield describes methods that allow one to take a common instructional practice and through a process of analysis see the assumptions about teachers, students, and learning embedded in that particular practice. It was as if someone had held a mirror up to my teaching. In that reflection, I saw a different, and not very flattering, instructional image: an authoritarian, controlling teacher who directed the action, often totally unaware of and blissfully oblivious to the impact of those policies, practices, and behaviors on student learning and motivation. Displays of instructor power were present everywhere. I came to realize that the classroom environment I created ended up being a place where *I* could succeed and do well. Student learning just happened, an assumed outcome of instructional action that featured me.

Before reading Brookfield's book, I had redesigned my course; afterward, I attempted to redesign the teacher. Getting the course reshaped turned out to be much easier than fixing my very teacher-centered instruction. Flachmann (1994, p. 2) captures exactly how I felt then and now:

> I'm a little embarrassed to tell you that I used to want credit for having all the intelligent insights in my classroom. I worked hard to learn these facts. . . . I secretly wanted my students to look at me with reverence. I now believe that the opposite effect should occur—that the oracle, the locus and ownership of knowledge, should reside in each student and our principal goal as teachers

> must be to help our students discover the most important and enduring answers to life's problems within themselves. Only then can they truly possess the knowledge that we are paid to teach them [p. 2].

A second event strongly influenced my thinking about learning and ultimately became another reason for writing this book. For years, my husband, Michael, aspired to build a wooden boat. He collected books, bought plans, subscribed to *Wooden Boat* magazine, and faithfully watched "Classic Boat" on Speed Vision (a cable TV channel devoted to racing). Then we bought property on an island, and it was time to build the wooden boat. We planned to build a house on the island and needed a boat big enough to haul supplies to the site. Armed with a set of blueprints (selected after having reviewed hundreds), he started on the hull. First, it was the frame and battens. His vocabulary changed; he talked of chines, sheer clamps, the kellson, and garboard. Then it was covering the hull with marine plywood, not something easily obtained in land-locked central Pennsylvania. The whole neighborhood showed up to help turn the hull. Next came the floor, designing the cabin, and finally the motor. At every step, there was a whole new set of tasks to learn. In our video collection, we have several tapes demonstrating fiberglassing techniques. We still get catalogues from more marine supply companies than I ever imagined existed.

From nothing but hours of work and an unwavering confidence that he could figure out what he needed to know emerged *Noah's Lark,* a twenty-four-foot, lobster-style, wooden boat. She has a sleek white hull and dashing yellow stripe and a beautifully finished ash cabin, and she's powered by a fully rebuilt but not terribly fuel-efficient Merc Cruiser. She sits gracefully in the water, rises to a stylish plane, and cuts steady and stable through whitecaps and waves. She reliably tows barge loads of micro lam beams, bags of concrete, and sheets of plywood. Dockside, *Noah's Lark* turns heads. The bold inquire, "Where did you get that boat?" "Built her," my husband replies, unable to hide the pride in his voice.

It takes much more time and money to build a wooden boat than I had imagined. But after dealing with those realities, what amazed me most was the confidence my husband brought to the

task. Where did it come from? On what was it based? He had never built a boat before—houses yes, furniture yes, but not a boat. As the bills kept coming in, I felt it financially prudent to keep asking, "Do you know what you're doing? Is this really going to turn out?" His answer was always the same, "No, I don't know what I'm doing, but I'm learning. Of course, it will turn out. We need a boat, don't we?"

At some level, I was really asking myself if I would tackle a project this complicated, this expensive, and this time-consuming if I knew as little as he did about it. And at another level, I knew the answer: I would not. Furthermore, I could not imagine any of my students doing it. Neither they nor I had faith that we could figure out this or many other complicated learning tasks that came to mind once I started thinking about them.

There was an irony here that stuck in my craw: Michael's confidence as a learner did not come from his experience of obtaining a degree in industrial engineering. In fact, quite the opposite had occurred. He graduated from college feeling that he had just squeaked by, keenly disappointed with what he had learned, and stressed by the conditions under which he was expected to learn it. He credits experiences with his father for developing his confidence. It irritated me that rather than reinforcing his confidence, his college experience had undermined it.

College should be the time when and the place where students develop prowess as learners. I started thinking about what kind of college experiences would result in learning skills as sophisticated and confidence as heart-felt as his. I came to accept that one of my tasks as a teacher was developing lifelong learning skills and the confidence to use them. What kind of teaching, assignments, and classroom environment would accomplish that? How would those kinds of learning experiences be evaluated?

Having accepted that goal, I saw course content in a whole new light. It moved from being the end to being the means. It went from being something I covered to something I used to develop learning skills and an awareness of learning processes. I saw evaluation as something much more meaningful than the mechanism whereby grades are generated. It become a potent venue for promoting learning and developing self- and peer assessment skills.

Although both of these experiences were instrumental in my early and continuing development as a learner-centered teacher, they are by no means the only events of consequence. Across the years and lessons learned, I have been informed, inspired, provoked, and encouraged by the occasional article and book, most of them personally reflective, that describe the attempts of others to move teaching to a different and more learner-centered place. My favorites are in the reading lists in Appendix C. If you learn more about yourself as a teacher by reading thoughtful reflections of other teachers, I recommend that reading list.

The Literature on Learning

In addition to these firsthand experiences, there was a third significant force in my development as a learner-centered teacher. Brookfield's book took me in two directions. In addition to introducing me to critical reflective practice, it was the starting point for a lengthy and still not completed trip around and through the literature on learning. After reviewing that manuscript, I realized how little I knew of and about learning, and so I started reading some of the radical and critical pedagogy referenced in that book, which led me to work on constructivism. Next, I got into self-directed learning and from there into the work in cognitive and educational psychology on deep and surface learning, motivation, perceived control, help-seeking behavior, and a host of other topics. Somewhere along the way, I explored feminist scholarship on pedagogy. I could not believe the trove of literature on learning that exists.

Before I knew it, I was imagining summarizing all this work, condensing and integrating it, and writing about it with clarity. Then I would extrapolate instructional implications from the findings, finally closing the gap between theory and practice. Had I been twenty years younger, I can see myself pursuing this noble and needed objective. But being older and wiser, I saw the folly of trying to corral a literature this vast. Understanding even a bit about the nature of this literature makes it obvious why that task is not easily accomplished. Three features in particular show how difficult it is to summarize what we know about learning.

First, the literature is vast. Interest in learning may be recent, but the study of it is not. It spans decades, starting in modern times with the work of Dewey. It crosses disciplines with work being done in education and various subfields like educational psychology, higher education, and adult education. Other relevant work is underway in women's studies and psychology. Still more work has been completed in fields with content totally unrelated to learning, like engineering and math. And finally there are interdisciplinary initiatives, like practitioner-oriented work on active learning, group work and inquiry-based approaches, the writing across the curriculum movement, and multicultural curricular reforms. Besides occurring across the decades and in multiple disciplinary contexts, the research and theory on learning is literally being completed around the world. It is a body of literature that would take a lifetime to read and another one to summarize and integrate.

Second, add to the vastness of the literature on learning the fact that this body of knowledge remains largely unassembled. It resembles a giant jigsaw puzzle that has a whole community working on it. A few sections are more or less finished. Collections of related but not yet connected pieces lie close together in other sections. And there are still a lot of individual pieces, definitely part of the puzzle but currently just spread out on the table. I do not mean to convey the impression that what is known about learning exists in some exceptional state of disarray. Like all other puzzles, this one comes with the picture on the box: we know what learning looks like when it happens. And what is still not known about how it all fits together could be said of the state of knowledge in many other fields. We push forward the horizons of knowledge faster than we map the newly discovered lands. But the disparate state of this vast knowledge base makes it more difficult to say how findings in one field and on one topic relate to what has been discovered in other fields and on different topics.

Finally, the task of extrapolating principles from the learning literature is made difficult by the ongoing separation of research and practice. For the most part, research results are presented with implications identified for future research. You can read many research studies, even the theoretical postulations that inform

research, and rarely encounter advice for the practitioner. Some books and articles are exceptions, but recommendations for applying in the classroom what is being advanced as knowledge about learning are not regularly offered.

Despite the difficulty of corralling and making applicable this unwieldy knowledge base, we have missed much by remaining ignorant of so much of it. I return to my own practice and see how much it has been influenced (and I hope improved) by even this not very systematic, decidedly eclectic, meandering journey through the literature on learning. If more faculty encountered the literature, it would not only nourish and sustain the current interest in learning; it would also change practice.

Five Key Changes to Practice

As a consequence of my review of the literature, I believe that in order to be learner-centered, instructional practice needs to change in the five ways introduced in the Preface and elaborated in the next five chapters. Those changes are consistent with and supported by the literature on learning.

The Balance of Power

The influences of power on the motivation to learn and on learning outcomes themselves are a major theme in the writings of the radical and critical (the terms are used interchangeably) pedagogues and in feminist pedagogy. Freire (1993) first and most definitively articulated what has become the central tenet of critical pedagogy: education can be a vehicle for social change. Stage, Muller, Kinzie, and Simmons (1998, p. 57) elaborate: "Education's role is to challenge inequality and dominant myths rather than socialize students into the status quo. Learning is directed toward social change and transforming the world, and 'true' learning empowers students to challenge oppression in their lives."

As an educator in Brazil, Freire developed his theories of education and social change as he taught illiterate peasants to read and empowered them to challenge corrupt political regimes. Many object to the political agenda attached to education by this philosophy, especially those who see the advance and acquisition of

knowledge as an objective, rational process. The critical pedagogues counter that all "forms of education are contextual and political whether or not teachers and students are consciously aware of these processes" (Stage, Muller, Kinzie, and Simmons 1998, p. 57). Tompkins (1991, p. 26) illustrates the thinking of critical pedagogy when she describes the classroom:

> We tell ourselves we need to teach our students to think critically so that they can detect the manipulations of advertising, analyze the fallacious rhetoric of politicians and expose the ideology of popular TV shows, resist the stereotypes of class, race and gender. . . . But I have come to think more and more that what really matters . . . is not so much what we talk about in class as what we do. . . . The classroom is a microcosm of the world; it is the chance we have to practice whatever ideals we cherish. The kind of classroom situation one creates is the acid test of what it is one really stands for [p. 26].

In the same vein, feminist bell hooks (1994, p. 12) characterizes classrooms as "radical spaces of possibility."

In the classrooms of the critical pedagogues, teacher authority figures do not dispense knowledge. My ideas about how to redistribute power in the classroom were most strongly influenced by a masterfully edited conversation between Horton and Freire (1990; Horton's theories of education emerged out of his work preparing blacks to pass voting tests). Another scholar writing about Freire (Aronowitz, 1993, pp. 8–9) operationalizes what Tompkins describes and what Freire did when he taught: "He means to offer a system in which the locus of the learning process is shifted from the teacher to the students. And this shift overtly signifies an altered *power* relationship, not only in the classroom but in the broader social canvas as well." Very persuasive to me was the fact that both Freire and Horton shifted power and control to cohorts of students most faculty would consider unprepared to assume responsibility for learning.

With feminist pedagogy, the frame of reference is more focused and the issues gendered, but the critique of existing educational theory and practice is no less comprehensive. On issues of power, feminist pedagogy finds that teaching is too authoritarian, power in the classroom is not equitably distributed, and the

imbalance negatively affects learning outcomes, especially for women. Higher education has long been male dominated, and the forms of patriarchy so entrenched in society have also found root in the academy and its classrooms. As a result, students (usually females, especially in male-dominated fields) are often treated differentially. Learning is limited and inhibited when power structures protect and preserve the powerful.

Also inherent in the work of feminist pedagogues is a critique of the competitive aspects of education. They believe that historically, education has done a good job of teaching students to be competitive. It has much less successfully taught the lessons of cooperation. (For an interesting and compelling case against the competitive aspects of various educational practices, see Kohn, 1986. Grading on a curve does not make much sense from the evidence presented in this book.)

Because the messages of both radical and feminist pedagogy are confrontational and the agenda political, discussion of this work is often cantankerous. Moreover, the work done by radical pedagogues uses highly specialized jargon that makes it difficult to read. Although I have treated work done by radical and feminist pedagogues together in this brief discussion, there are distinctions and disagreements despite the fact that both deal with many of the same issues. This work calls into question traditional power structures and the role of authority in the classroom. Alternatively, it proposes more democratic and egalitarian views of education that open it to the possibility of different kinds of learning. These shifts have dramatic effects on student motivation and engagement.

The Function of Content

What content contributes to and in the learning process is addressed in empirical work carried out in cognitive and educational psychology. Some of the most important was launched with a seminal study by Marton and Saljo (1976, updated and analyzed in Marton, Hounsell, and Entwistle, 1997), who had students read material from an academic textbook and then asked them to describe what they had been reading. Ramsden (1988, p. 18), another important scholar working in this area, has succinctly summarized their findings: "They found evidence of *qualitative* differ-

ences in the outcome of students' reading. The differences were not about how much the students could remember, but about the meaning the author had tried to convey. Some students fully understood the argument being advanced and could relate it to the evidence being used to support it; others partly understood the author's message; others could only mention some of the remembered details."

When students concentrated on memorizing the facts, focused on the discrete elements of the reading, failed to differentiate between evidence and information, were unreflective, and saw the task as an external imposition, Marton and Saljo characterized their approach as surface learning. When students focused on what the author meant, related new information to what they already knew and had experienced, worked to organize and structure the content, and saw the reading as an important source of learning, Marton and Saljo characterized the approach as deep. Ramsden says of students using surface approaches, "Texts were a flat landscape of facts to be remembered, rather than an area dotted with salient features representing principles or arguments around which stretched plains of evidence" (p. 23). Findings like these challenge the conventional push to "cover" and otherwise convey ever more content. Ramsden notes that "learning should be seen as a qualitative change in a person's way of seeing, experiencing, understanding, conceptualizing something in the real world—rather than as a quantitative change in the amount of knowledge someone possesses" (p. 271). In order to facilitate learning that changes how students think and understand, teachers must begin by discovering students' existing conceptions and then design instruction that changes those conceptions. That most certainly has implications for how much content can be covered.

Some work in cognitive psychology is directly tied to constructivism, a currently prominent educational theory. At its core, this theory is about the relationship between learners and content: "Constructivist approaches emphasize learners' actively constructing their own knowledge rather than passively receiving information transmitted to them from teachers and textbooks. From a constructivist perspective, knowledge cannot simply be given to students: Students must construct their own meanings" (Stage, Muller, Kinzie, and Simmons, 1998, p. 35). This view of education and

learning rests on the work of a variety of psychologists and philosophers, most notably Jean Piaget, Jerome Bruner, Ernst von Glaserfeld, and Lev Vygotsky.

Constructivism has had an impact on instructional practice. For example, that learning occurs in social contexts like communities and builds on the experiences, background, and cultures of community members finds voice in the seminal work of Bruffee (1993), whose notions of group work from the constructivist perspective helped to spawn the collaborative learning movement. In this approach to group work, the teacher functions as a master learner and resource. Group members function as a community and jointly create their own unique solutions to problems. Sometimes these learning communities become formalized structures that tackle the integration of content across disciplines and around themes.

These ideas of the collective construction of knowledge fit in humanities fields where content supports more tentative and less definitive conclusions. It is more difficult to see how knowledge can be socially constructed in science, math, and engineering fields where there are more "right" answers and much less disagreement about the status of knowledge. Although this view of knowledge and learning has been resisted, there are some notable exceptions. The idea that students need to be told less and to discover more is realized in another collection of strategies that we might loosely group here as problem-based learning. Students start with a problem, usually a scenario or case, and must find the content in the fields that explains, answers, or resolves the problem. Typically, they do this work in groups. Some attempts have been made to realign whole curricula, course sequences, and individual courses based on the assumptions and principles of constructivism. For example, Ege, Coppola, and Lawton (1996) used constructivist theories to redesign the introductory organic chemistry taken by all chemistry, biology, and pre-med majors at the University of Michigan.

Constructivism prescribes a whole new level of student involvement with content. It makes content much more the means to knowledge than the end of it. It and the empirical work in psychology change the function of content so it is less about covering it and more about using it to develop unique and individual ways of un-

derstanding. Consider how Fosnot (1996) describes the interaction between content and students from the constructivist perspective. Learning, she notes, "requires invention and self-organization on the part of the learner. Thus teachers need to allow learners to raise their own questions, generate their own hypotheses and models as possibilities and test them for validity" (p. 29). A bit later she writes, "Challenging, open-ended investigations in realistic, meaningful contexts need to be offered, thus allowing learners to explore and generate many possibilities, both affirming and contradictory" (p. 29).

The Role of the Teacher

Work in all three of these areas (critical and feminist pedagogy, cognitive and educational psychology, and constructivist theory) has large implications for the role of the teacher. Critical and feminist pedagogy challenge long-standing assumptions about power, authority, and teachers. The critique is damning, asserting that the exercise of power in the classroom often benefits teachers more than it promotes student learning.

Constructivism challenges faculty expertise, not so much arguing against its validity as objecting to its exclusivity, opening and legitimizing students' interaction with the content. According to constructivist theories, students need not wait until they have developed expertise before they interact with content. They are encouraged to explore it, handle it, relate it to their own experience, and challenge it whatever their level of expertise. Obviously, less knowledgeable and experienced learners will interact with content in less intellectually robust ways, but the goal is to involve students in the process of acquiring and retaining information.

Feminist pedagogy builds on constructivist theory when it raises questions about the nature of knowing and identifies different ways of knowing, as it did most notably in the now-classic, *Women's Ways of Knowing* (Belenky, Clinchy, Goldberger, and Tarule, 1986). Challenging the nature of knowledge and raising questions about the role of expertise require that faculty revisit and reassess long-held traditional views of the teacher as the exclusive content and classroom authority.

Work in educational psychology most clearly shifts our focus from the teacher to the learner. What teachers do is important only

in terms of how those actions address learning. The action always features students and what they are doing. This view deemphasizes teaching techniques and methods if they are considered separate from the subject matter and learning structures of the discipline. How faculty teach is intrinsically a function of what they teach and how students learn in that discipline.

Like learners, teachers move through developmental stages that reflect how much they focus on students and learning. Biggs (1999a, 1999b) outlines this developmental "route map," which is discussed in detail in Chapter Eight, where a variety of developmental issues are considered. At this juncture, it is worth mentioning work like that of Kember and Gow (1994), who developed a questionnaire for faculty that measures orientation toward one of two approaches to teaching: knowledge transmission or learning facilitation. They tabulated the data for both individual faculty and departments and then, using an instrument developed by Biggs (and recently updated by Biggs, Kember, and Leung, 2001) to measure the extent to which students report using surface or deep approaches to learning, correlated the teaching and learning approaches. Kember and Gow's (1994) results suggest that

> the methods of teaching adopted, the learning tasks set, the assessment demands made, and the workload specified are strongly influenced by the orientation to teaching. In departments where the knowledge transmission orientation predominates, the curriculum design and teaching methods are more likely to have undesirable influences on the learning approaches of students. . . .
>
> . . . Meaningful approaches to learning are discouraged when lecturers believe that their role is restricted to transferring the accumulated knowledge of their discipline to the minds of their students [pp. 69, 71].

If the goal of teaching is to promote learning, then the role the teacher takes to accomplish that goal changes considerably. Teachers no longer function as exclusive content expert or authoritarian classroom managers and no long work to improve teaching by developing sophisticated presentation skills. They will lecture less and be much more around the classroom than in front of it. There is no sense in any of the literature that I read that this is a dimin-

ished, less essential role. Learner-centered teachers make essential contributions to the learning process. However, they are significantly different from those contributions most teachers currently make.

The Responsibility for Learning

Some years before my current interest in learning I encountered the ideas of self-regulated, self-monitored, independent learners in the work of Boud (1981), whose edited anthology describes how education makes students dependent learners. They depend on the teacher to identify what needs to be learned, to prescribe the learning methods, and finally to assess what and how well they have learned. In recent years, work on self-regulated learning has advanced, with Boud and others now proposing that the goal of education ought to be the creation of independent, autonomous learners who assume responsibility for their own learning. Learners take this stance during formal educational encounters and on their own as learning occurs across their lifetimes.

Because we so seldom see independent, autonomous learners and function in mostly teacher-centered environments, we forget how effectively some individuals assume responsibility for their own learning. Most of us can summon an example—the self-taught gardener, trekker, knitter, or my spouse's boat-building adventure—where the learner takes an avocation to high levels of knowledge and skill. But we often disconnect these examples of informal learning from the formal experiences that happen in school. Researchers who study self-directed learners do not. They often start with these models of independence, self-motivation, and individual responsibility.

The book that most effectively summarizes work in this area is Candy's *Self-Direction for Lifelong Learning* (1991). His "Profile of the Autonomous Learner" is an apt summary of his book and the research in this area. In it he lists over one hundred of the "attributes, characteristics, qualities, and competencies" (p. 459) used by and in research to describe the autonomous learner. I think of it as a description of the "perfect" student, the one I dream of teaching. But this work on self-directed learning challenges us to do more than dream. It establishes that students can and should be

made responsible for their own learning. This work provides the justification for that approach.

Learning skills as sophisticated as those needed by autonomous self-regulating learners do not develop simply through exposure to the content of disciplines. They must be taught, and so it is this literature on self-directed learning that makes the strongest case for skill instruction, especially for students who arrive in college without even the most basic skills. The point is made almost relentlessly: our students will be lifelong learners. The skills they acquire and the awareness of themselves as learners that they develop during their formal educational experiences will be used throughout the course of their professional and personal lives.

This literature is very good at describing where students should end up. The authors delineate all that characterizes independent, autonomous learners. They address much less frequently how it is one begins with students who are at the other end of the continuum (dependent, passive, and not self-confident) and starts moving them in the direction of intellectual maturity and autonomy. This is a nontrivial omission; development as an independent learner is not the inevitable outcome of formal educational experiences.

Evaluation Purpose and Processes

Work in educational psychology extensively documents a finding we all know but do not always act on: What do students learn in a course? They learn whatever it is they are tested or evaluated on. Tests and assignments are a course's most potent impetus to learning. Nights before a test in my courses, I savor knowing that a significant percentage of my students are having what I hope is an extended encounter with the course's content. They are finally getting around to learning all this important stuff.

Assessment promotes learning, but the question is, What kind of learning does it promote? If you examine honestly and reflectively what most faculty test students on and the assessment mechanisms they employ, the results create dissonance. And there is a simple way to make that clear. Think about how you would respond to this query: You're at the mall and run into a student who took your course five years ago. As the student looks at you and remem-

bers the course, what would you like to have running through the student's mind at that moment? Now examine your tests and assignments, and see what you can find there that contributes to those desired learning outcomes. The point cannot be made more clearly than Biggs (1999a) did: "What and how students learn depends to a major extent on how they think they will be assessed. Assessment practices must send the right signals" (p. 141).

The literature on assessing learning does not deal with the instructional realities of large classes, heavy teaching loads, no clerical support for teachers, pressure to publish, and required service to the institution. Those realities necessitate some compromises, but all of us need to reconnect with the fundamental fact reiterated over and over in this literature: what students are most likely to learn in a course is directly related to what they are evaluated on. Evaluation is not just something used to generate grades; it is the most effective tool a teacher has to promote learning. So how can it be used to its maximum potential, given instructional realities and the strong motivation students have to get grades?

The literature on self-directed learning also underscores the importance of assessment, only in this case it is the ability of students to self-assess accurately. Sophisticated learners know when they do or do not understand something. They can review a performance and identify what needs improvement. They know when their lack of objectivity necessitates their soliciting external feedback. They have mechanisms for its collections and methods for evaluating it and acting on it. Do today's college students have these skills? More incriminatingly, do we teach them?

Good Literature on the Lessons

The literature highlighted in this chapter is only some of what is referenced throughout the book. What I have focused on here are the large streams of work that support the changes proposed and explored in the next five chapters. I will support the changes with specific studies and narrower lines of work that belong to these larger streams.

The reading list on learning in Appendix C is by no means comprehensive, but includes the sources that have been most instrumental in developing the approach I advocate in this book.

Particularly "good," that is, informative, easy-to-read, and well-documented, sources are noted in annotations that accompany each reference. This list is organized around five major areas of work highlighted in this opening review: autonomy and self-directed learning, critical and radical pedagogy, feminist pedagogy, constructivism, and cognitive and educational psychology.

Finally, what I am advocating here as the ways and means of promoting more and better learning is consistent with any number of other reports and articles. The same problems with current instructional approaches keep being identified, and solutions not unlike what ends up being proposed here are advocated. Let me mention four such sources, drawn from a larger pool.

The Wingspread Group on Higher Education (1993) began with the current problems in American higher education, focusing mainly on the mismatch between the needs of society and the preparation of undergraduates. This report documents student failures on many fronts and proposes a solution: put learning at the heart of the educational enterprise. The group sees this as a profound change. Making it a central mission "will mean overhauling the conceptual, procedural, curricular and other architecture of postsecondary education on most campuses" (p. 14).

Widely quoted and perhaps more influential than any other article in setting the current learning agenda, Barr and Tagg (1995) outline the comprehensive changes involved when institutions move from a teaching to a learning paradigm. They identify teaching and learning structures that create climates for learning. They describe learning theory that shapes knowledge individually as mediated by personal experience, makes learning student-centered and controlled, and teaches students how to learn as much as it teaches what to learn. They describe faculty as instructional designers who put together challenging and complex learning experiences and then create environments that empower students to accomplish the goals.

O'Banion (1997), president of the League for Innovation in the Community College, a professional organization for two-year institutions, authored a monograph on creating more learner-centered community colleges. He proposes that "learning colleges" will exemplify six principles:

> 1) the learning college creates substantive change in individual learners; 2) the learning college engages learners in the learning process as full partners assuming primary responsibility for their own choices; 3) the learning college creates and offers as many options for learning as possible; 4) the learning college assists learners to form and participate in collaborative learning activities; 5) the learning college defines the roles of learning facilitators by the needs of the learners; and 6) the learning college and its learning facilitators succeed only when improved and expanded learning can be documented for its learners [p. 15].

Finally, Gardiner (1998) summons the research evidence that mandates change in educational practice:

> In this article, I hope to acquaint readers with important research that has been done over the past three decades on how students learn and what constitutes effective educational experience. . . .
>
> The studies reviewed here, taken together, consistently show that the college experience for most students comprises a loosely organized, unfocused curriculum, with undefined outcomes, classes that emphasize passive listening, lectures that transmit low-level information, and assessments of learning that frequently demand only the recall of memorized material or low-level comprehension of concepts [pp. 71–72].

However, he ends by pointing out that what is known about student development, learning, teaching, and academic organization does lead to methods and approaches that can help students develop to a very high level.

The changes necessary to make teaching learner-centered are not trivial. They get to the bedrock of instructional practice. They have encouraged me to revisit long-held assumptions and widely used approaches. However, it is not possible to sample even a modest amount of the literature on learning and continue teaching as most of us were taught. Very little there justifies traditional approaches, especially given the learning needs of students and society today. At some level, most of us already know this. We have embraced the methods of active learning, cooperative and collaborative learning, and writing across the curriculum, to name but a few of the initiatives that put students in new relationships with

content, their fellow learners, and their teachers. Almost all institutions now offer learning skills instruction. We all know we are teaching too much content and emphasize grades to the detriment of learning. Most faculty do not connect these changes in instructional practice and attitude with the knowledge base on learning, but they do pave the way for the more comprehensive and integrated approach I call learner-centered teaching.

Last week, one of my students told me that he recommended my entry-level communication course to a friend. When I asked why, he said, "It changes the way you think in some really good ways." I wished for a bit more specificity but then decided that I will hope my experiences, the changes I propose in this book, and the literature summoned in support of them will have exactly the same effect on you.