Part One

Foundations of the Learner-Centered Approach

Chapter One

Learner-Centered Teaching: Roots and Origins

This chapter tells two stories. It recounts how I became a learner-centered teacher and it shares a bit of the origin and history of learner-centered ideas. The story of learner-centered teaching begins long before my efforts to focus on student learning. The approaches I started using rest on a collection of educational theories—some comparatively new; others established and venerable. These theories help explain why and how this way of teaching promotes learning. Knowing a bit about them makes it easier to decide whether this philosophy of teaching fits currently held beliefs or whether teaching using these approaches would represent a change in educational philosophy. The theoretical framework also offers criteria that can be used to assess the effectiveness of what has been implemented. Finally, knowing about the theories makes it easier to trace the origin of the various lines of research written about in Chapter Two.

The interplay between my story and these theories is interesting. I didn't start out aspiring to become a learner-centered teacher. I didn't even realize the changes I was implementing could be called that. Like many midcareer faculty, I was looking for new ideas—partly out of my need for growth and change, and partly because a lot of what I saw in classrooms seemed so ineffective. I opted for ideas I liked and ones that I thought I could make work. It took some time before I saw that the approaches I was using shared common elements, and it took even longer

before I discovered that what I was doing rested on strong theoretical foundations. Once I discovered these things, I felt vindicated. What was happening in my classroom wasn't some sort of fluke. Students were responding as they did for good reasons—but that's not where my story begins.

The next section contains my story. It includes examples that illustrate learner-centered approaches, and they give an early sense of how learner-centered teaching might be defined. I also highlight each of the five areas in which I implemented changes. These areas are the subject of the five chapters in Part Two and are really the heart of my exploration of learner-centered teaching. Discussion of the theories follows my story, and examples are included in that discussion as well. They build some context around the theories and make it a bit easier to assemble a learner-centered framework out of the various theories.

A Personal History

Like most important life lessons, what I have come to believe about learner-centered teaching grew out of a serendipitous confluence of events and experiences. The ones I consider most important are so overlapping and intertwined that a stream-of-consciousness recounting would more accurately describe how they occurred. However, in the interest of coherence, I will recount each of them separately.

Events and Experiences: What Motivated the Change

My transformation began in 1994, when, after a number of years working in faculty development, on educational research projects, and occasionally teaching upper-division and graduate courses, I returned to the classroom to teach entry-level, required courses. It was one of those midlife career moves motivated by the realization that the time for doing things no longer appeared limitless. As I took stock and tried to decide what I wanted to do with the rest of my career, it became clear that the most important and personally satisfying work I had done was in the classroom. I decided to return, finishing out my career as it had started, teaching undergraduates.

I went back wanting to teach differently, even though I wasn't terribly clear in my thinking about what was wrong with how I taught or how I wanted change. I thought more about students and the fact that their lack of confidence prevented them from doing well in the basic communication courses I taught. 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 giving the students a greater sense of control. What if I presented them with some choices and let them make some of the decisions about their learning?

My first semester back in the classroom I decided to try this approach in my 8 a.m. section. I designed a beginning public speaking course that had only one required assignment: the dreaded speech. They had to give at least one. The rest of the syllabus presented them with 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, being interviewed, or both; and conventional multiple-choice exams. A version of this syllabus appears in Appendix One. As can be seen there, each assignment had a designated point value, and it was not a case of do-it-and-get-full-credit. Students could opt to complete as many or as few assignments as they wished, depending on the course grade they desired. Each assignment had a due date, and once the date passed, that assignment could not be turned in.

The first couple of days, students were totally confused. I remember a conversation with one about whether the exams were required. "They must be required. If the tests are optional, no one will take them." "Sure they will. Students need points to pass the class." "But what if I don't take them?" "Fine—do other assignments and get your points that way." "But what do I do on exam days?" "You sleep in!" Several students said they couldn't decide which assignments they should do and asked me to make the choices for them. Even more wanted me to approve the collection of assignments they had selected.

Once the confusion passed, what happened the rest of the semester took me by surprise. I had no attendance policy, but I got better attendance than in any other class I could remember.

More students (not all, but most) 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 this change of attitude—students willing to work and without complaints? The high energy level and sense of optimism I usually saw in students those first few class days continued well into the course, and even as the stress of the semester started showing, this class was different. These students were more engaged. They routinely asked questions, sustained discussion longer and in the end disagreed with me and other students far more than I remembered other beginning students doing. No, it wasn't instructional nirvana—there were still missed deadlines, shoddy work, and poor choices made about learning, but these things happened less often. I was definitely onto something and decided I would continue to experiment with the course.

About this time, I was asked to review a Brookfield (1995) manuscript under contract with Jossey-Bass and subsequently published as *Becoming a Critically Reflective Teacher*. I reference it in almost everything else I write. Few things I have read before or since have so dramatically influenced my pedagogical thinking. First off, I discovered how much about one's own teaching could be learned through critical reflective practice. Brookfield describes methods that allow teachers to dissect instructional practices so that the assumptions on which they rest can be clearly seen. Since then I've learned much more from other adult educators who study, describe, and promote both this kind of critical reflection and the transformative learning it often produces (Mezirow and Associates, 2000; Cranton, 2006). Transformative learning is one of the theories I'll be discussing subsequently in this book. But it was Brookfield who first enabled me to hold a mirror up to my teaching. The instructional image I saw was not what I expected. It was far less flattering.

I saw an authoritarian, controlling teacher who directed virtually everything that happened in the classroom. I made all the decisions and did so with little regard as to their impact on student learning and motivation. Almost totally focused on teaching, I had created a classroom environment that showcased my pedagogical prowess. Student learning just happened automati-

cally, an outcome of my devotion to excellent teaching. It didn't matter where I turned the mirror, I never saw anyone other than the teacher.

Before Brookfield, I fussed around with some interesting new strategies; after Brookfield, I tried to transform the teacher. Shaping up the course turned out to be a whole lot easier than "fixing" my very teacher-centered methods. Flachmann (1994) captures exactly how I felt then:

> 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].

Another wise teacher makes the point this way: "I've come to realize that it is not so much what students know but what they can do. Likewise, teaching is not about what I know but what I enable others to do" (Phelps, 2008, p. 2).

Another event during this period also strongly influenced my thinking. For years my husband, Michael, had wanted to build a wooden boat. He collected books, bought plans, subscribed to *Wooden Boat* magazine and faithfully watched *Classic Boat* on TV when it was on Speedvision. Then we bought a piece of property on an island. We planned to build a house there and needed a boat big enough to haul supplies to the site. Armed with a set of blueprints (selected after having reviewed hundreds), Michael started building the hull of a wooden boat. New words crept into his vocabulary. Over supper, he chatted on about battens, chines, sheer clamps, the kellson, and garboard. Next, the hull was covered with marine plywood, not something easily obtained in landlocked central Pennsylvania. The whole neighborhood showed up to help turn the hull. Then it was time to construct the floor, design the cabin, and rebuild the motor. Every step was accompanied with a whole new set of tasks to learn.

During the evenings he watched videotapes demonstrating fiberglassing techniques. Every day some new marine supply catalog showed up in the mailbox.

After hours of work that extended across months, *Noah's Lark* emerged, a twenty-four-foot, lobster-style wooden boat. She had a sleek white hull and dashing yellow stripe, a beautifully finished ash cabin, and she was powered by a fully rebuilt but not terribly fuel-efficient MerCruiser. She rode the water gracefully, rose to plane with style, and made her way through white caps and choppy water with steady certainty. She reliably towed barge loads of building supplies, always turning heads at the public launch. The bold asked, "Where did you get that boat?" "Built her," my husband replied, unable to hide the pride in his voice.

It takes far more time and money to build a wooden boat than I imagined. Beyond those surprises, I marveled at the confidence my husband brought to the task. Where did it come from? On what was it based? He had never built a boat—houses, yes; furniture, yes; but not a boat. As the project progressed and charges on the credit card mounted, I felt it financially prudent to ask, pretty much on a monthly basis, "Do you know what you're doing?" "Is this really going to be a boat we can use?" 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?"

There was an irony I didn't miss—actually, it stuck in my craw. Michael is a college graduate. He acquired a degree in industrial engineering in his early thirties, and college was not the experience that had developed his confidence as a learner. In fact, quite the opposite had occurred. He graduated from college feeling that he just made it, keenly disappointed with what he had learned and stressed by the conditions under which he was expected to learn. He credits experiences with his father for developing his confidence. It irritated me that his college experience had undermined his beliefs about what he could do. College should be the time and the place for students to develop the learning skills on which that confidence rests.

While ruminating, I tried to imagine which of my students might tackle a complicated learning project about which they knew little. No one came to mind. I saw nothing in my students or myself, for that matter, that resembled the confidence and

perseverance with which my husband confronted his need to learn how to build a wooden boat. That led me to think about what kind of classroom experiences would develop this self-confidence and these sophisticated learning skills. I couldn't answer that question right off, but I did become persuaded that one of my tasks as a teacher was developing learning skills and the confidence to use them.

Setting that goal changed my thinking about many aspects of instruction. I began to see course content in a different 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 stopped assuming students were learning how to generate examples, ask questions, think critically, and perform a host of other skills by seeing me do them. If they were going to develop those skills, they needed to be the ones practicing them, not me. I saw evaluation as something more than the mechanism that generated grades. It became a potent venue for promoting learning and developing self- and peer-assessment skills.

As my teaching transformation continued moving in the learner-centered direction, I realized how little I actually knew about learning. Brookfield's well-referenced book introduced me to all sorts of new sources. At the same time, interest in learning swept across higher education. For a while there, it almost felt as if learning had just been discovered—or maybe rediscovered. There were all sorts of things to read, and I read them in an unsystematic way, just allowing one source to lead to another. As I learned more about learning, I discovered that the new approaches I was adopting rested on a variety of educational theories, many supported by research.

Organizing What I Learned

I didn't try to organize the hodgepodge of learner-centered strategies and approaches I was implementing until I started working on the first edition of this book. It was then I saw that those changes could be grouped around five key aspects of instructional practice. Those five areas have continued to structure my thinking about learner-centered teaching. In both the first edition and this

one, there is one chapter about each area. I consider those five chapters the heart of my work on learner-centered teaching.

Since they are so central, these aspects of instruction merit an introduction now. I start with how learner-centered teaching changes *the role of the teacher.* I didn't start with this chapter in the first edition, but I do in this edition for two reasons. It's a good place to start because it makes sense to faculty. Teaching that promotes learning is not teaching that endlessly tells students what they should do and what they should know. Rather, it promotes learning by facilitating the acquisition of knowledge. The hard and messy work of learning can be done only by students. And I start here because changing the role of the teacher is central and significant. I'm not sure that it's the first thing that needs to change. But the other changes cannot be executed if the role of the teacher stays the same. It's significant because although this change may be easy to accept intellectually, most of us have discovered practicing facilitation in the classroom is anything but simple. It presents teachers with an ongoing set of challenges.

Changing the *balance of power* in the classroom requires a bigger conceptual stretch. Teacher authority is assumed—taken for granted so often that most teachers have lost their awareness of it. Whether they realize it or not, teachers exert enormous control over the learning processes of students. They decide what students will learn and how they will learn it. They set the pace and establish the conditions under which the learning will take place. They regulate the flow of communication in the classroom, and finally they certify whether and how well students have learned. What does that leave for students to decide? Ironically, what's left is the most important decision of all: students decide whether or not they will learn. But even though teachers can't guarantee learning outcomes, they can positively influence students' motivation to learn when they give students some control over the learning process. The challenge for learner-centered teachers is finding those strategies that give students control and responsibility commensurate with their ability to handle it. The goal of learner-centered teaching is the development of students as autonomous, self-directed, and self-regulating learners.

The *function of content* stands as the strongest barrier to changes that make teaching more learner-centered. Teachers have lots of

content to cover, and when students are working with new and unfamiliar content, they don't cover it as efficiently as faculty. Learner-centered courses still contain plenty of content, but teachers *use* the content instead of covering it. They use it as they always have—to develop a knowledge base—but they also use content to develop the learning skills students will need across a lifetime of learning. Equipping students with learning skills makes it possible for them to learn content themselves—sometimes within the course itself and regularly after it.

Learner-centered teachers institute changes that make students more *responsible for learning*. They work to create and maintain climates that are conducive to learning, whether students meet in classrooms or online. Teachers and students have become too dependent on extrinsic motivation to power learning. Students do things for points, grades, because they'll be quizzed, or there's some other kind of requirement. Without those sticks and carrots, learning activities grind to a halt. Students need to orient to learning differently. Learner-centered teachers let students start experiencing the consequences of decisions they make about learning, like not coming to class prepared, not studying for the exam, not contributing in groups. And learner-centered teachers work to do a better job of conveying the love and joy of learning. Teachers spend lifetimes learning and never even think about points.

Finally, learner-centered teachers revisit the *purposes and processes of evaluation*. Starting with the purpose, teachers evaluate what students know and can do for two reasons. They have a professional obligation to certify mastery of material, but teachers also use assessment activities like exams because preparing for them, taking them, and finding out the results can all promote learning. The goal of the learner-centered teacher is to maximize the learning potential inherently a part of any experience where students produce a product, perform a skill, or demonstrate their knowledge. As for the processes of evaluation, at issue here is the lack of opportunities students have to develop self- and peer-assessment skills while in college. Because grades retain such importance, teachers must grade student work. But mature learners have self-assessment skills and can constructively deliver feedback to others. Learner-centered teachers design learning

experiences that give students opportunities to explore and develop these important skills, and they seek out strategies and approaches that do not compromise the integrity of the grading process.

Since publication of the first edition, this organizational scheme for considering learner-centered approaches has been used by others in presentations and publications. This typology continues to make sense, so it provides the structure for this second edition as well.

And the Learning Continues

I taught another five years after publication of the first edition of *Learner-Centered Teaching*. I continued to refine the techniques I was using and implement new ones. I couldn't say exactly when, but at some point the collection of techniques I assembled stopped being interesting things to do and became a teaching philosophy. As such, it ended up influencing how I thought about every aspect of my instructional practice. So many things changed that I hardly recognized the teacher I had become.

Before retiring, I made several other realizations about this approach to teaching. First, it is not an easier way to teach. It requires sophisticated instructional design skills. When students are doing more learning on their own, what and how they learn is directly linked to the activities used to engage them. They will learn more and learn it better if those activities are well designed, whether they are done in class or at home. So many of the instructional activities I used were things students did in many other classes—multiple-choice exams, research papers, group presentations. I used them without thinking that their features could be manipulated and changed in ways that affected what and how students learned. When I reconsidered those assignments and activities, it wasn't always apparent what changes would result in better learning experiences. I discovered by trial and error and by soliciting lots of feedback on the changes from students. I stopped asking them whether they "liked" a particular activity and inquired about its impact on their efforts to learn.

In addition to requiring more upfront planning time, learner-centered teaching is more difficult because it is much less scripted.

You don't go to a classroom or online with a carefully prepared lecture—one with all the examples, transitions, questions (maybe even answers), links to previous material, sample problems ready to go on visually impressive PowerPoint slides. You go well prepared with a repertoire of material at your disposal—you have a carefully packed tool box, and, like any expert working on location, you know what you'll need most of the time. Even so, chances are that some days you won't have everything you need. In this case, you trust your experience with the content, with learning, and with students. Something else from the tool box may work or you'll be able to make do until you can get what you need.

I also came to realize that in learner-centered classrooms teachers don't work alone. Students become learning partners. They explore with teachers what will help them better understand an issue, a theory, or a problem. Never before did I feel this sense of partnership with students. Focused on more and better learning, we all made suggestions and offered feedback. And we all celebrated those breakthroughs to understanding and insight. It brought a kind of invigorating energy and spontaneity to the classroom, and it was exactly what I needed to sustain my interest, enthusiasm, and love of teaching during those last years I was in the classroom.

As my experience with learner-centered approaches grew, I found myself attracted to classroom activities that pushed and challenged me. I kept wanting to try new things. The positive experiences I had implementing them—even those that didn't work well—are the reason why I now routinely recommend the infusion of learner-centered approaches as the antidote to teaching that has become more ho-hum than imaginative. I felt better about myself as a teacher during those last few years than at any other time of my career.

Before I retired, I also came to understand that this way of teaching offers a deeper kind of personal satisfaction. This isn't teaching that features pedagogical showmanship. It's not about the teacher performing. It's about students learning and teachers making contributions that help learning happen. You can do things as a teacher that directly affect how much and how well students learn content. Sometimes students even fall in love with what has captured your intellectual imagination. You can also

help students develop learning skills that change how they approach every learning task. You can help them learn to read critically, challenge assumptions, ask good questions, and evaluate answers. You can help students grow and develop as human beings—you can change their lives, and that's what makes teaching such a worthwhile endeavor. It is work that makes a difference.

Since retiring, I am continuing to work in this area, motivated in part by the interest it has sparked in others. I've written other books, but when I'm asked to speak, it is almost always about learner-centered teaching. These ongoing discussions with various faculty groups have continued to change my thinking about learner-centered teaching and were another motivation for doing a new edition of this book.

My thinking on the topic has also been enriched by much new literature published since the first edition. There are books and articles, some accounts of how learner-centered approaches succeeded, and some describing how they failed. There are descriptions of new techniques, some innovative and some modest alterations of common practices. There is much more research, some of it in education, but a lot based in the disciplines. Some studies report the effects of a particular technique on learning outcomes; others report on the impact of a variety of learner-centered changes implemented in a single course. Because this research exists in so many different disciplines, many of the questions and findings are not known by those in other fields, even though they share the same interests and could learn much from each other's work. The research employs so many different methodologies that it can't be integrated empirically, but its many findings can be reported and implications for practice explored. I saw this as another reason to revisit a now dated book and prepare a new one.

As I begin working on this new edition, our house on the island is almost finished. Michael built a huge fireplace in the front room. It rests on and circles around the giant boulder that is the back wall of our house. We think we have something of an Extreme Home. Perhaps you will see us on that television show some day. It was another of those projects that involved much learning, experimenting, heavy lifting, and spectacular results, once the smoke started reliably ascending the chimney. And downstairs in

the workshop a second incarnation of *Noah's Lark* is taking shape. With the first boat, as Michael explains, "I didn't learn everything I needed to know the first time." When a wooden boat sits in the water and out in weather for the four summer months, rot becomes an issue. This *Noah* began with the same hull plan, but she looks different and has significant design changes. "I'm building this one to last fifteen years." We shall see. And after the new *Noah*, there's a 1961 Chris Craft awaiting restoration in the other garage bay. "How do you restore a very old wooden boat? I don't know. There's lots I have to learn."

The Theories Behind Learner-Centered Teaching

To make the transition from this personal history to a discussion of relevant theories, let me distill what I have come to believe are the key ingredients of learner-centered teaching. It is teaching focused on learning—what the students are doing is the central concern of the teacher. Being "focused on learning" is easily understood at a superficial level, but its delineation reveals more details and intricacies:

1. It is teaching that engages students in the hard, messy work of learning.
2. It is teaching that motivates and empowers students by giving them some control over learning processes.
3. It is teaching that encourages collaboration, acknowledging the classroom (be it virtual or real) as a community where everyone shares the learning agenda.
4. It is teaching that promotes students' reflection about what they are learning and how they are learning it.
5. It is teaching that includes explicit learning skills instruction.

There's much more about all of these intricacies in the chapters ahead.

At this point the consideration is how these key characteristics of learner-centered teaching grow out of and uniquely integrate a number of different educational theories. Although any number of us who use learner-centered approaches would claim that for

us they function as the philosophy that drives our instructional decision making and grounds our practice, learner-centered teaching is not described in the literature as an educational theory or philosophy. Rather, it is regularly tied to existing theories like those briefly highlighted next.

Attribution Theory and Self-Efficacy

When applied to education, Attribution Theory identifies what students attribute their success or failure to. Heider (1958) is credited with originating the theory. It was developed further by Wiener (1986) and researchers like Covington (1992). When students try to explain an academic outcome (like how well they did or didn't do on an exam), they generally attribute it to either ability or effort—how competent they are or how hard they tried. We've all seen how strongly attributions influence student behavior. Students regularly show up in our classes convinced they can't do something—write, solve problems, dance, or give a speech. A fine teacher of developmental writing once told me that the toughest challenge teaching deficient writers was persuading them that they could indeed write. How can you write if you don't have the ability? Some of these beliefs we see in ourselves. I am no good with computers. I can't make most technology tools work. When my husband is gone, I don't watch TV because I can't figure out how the silly remote control works. Are all thirty-five of those buttons really necessary?

Attribution Theory also explores how the cause (or source of the attribution) is tempered by what Weiner (1986) identified as control, stability, and locus. Is the cause under the student's control? Students tend to see ability as something they are born with, not something they can control. Is the cause stable or does it fluctuate? If a lack of ability is what causes you to do poorly in math, that cause is stable and unlikely to change, which makes it tricky to explain success unless you attribute it to blind luck. Is the locus associated with internal factors or external ones? For example, believing that the teacher put "tricky" questions on the exam or included problems not like those assigned as homework allows the student to blame external forces for poor performance. It also illustrates how locus mediates cause attribution.

Self-efficacy, not unrelated to Attribution Theory, has to do with students' beliefs about their capabilities—whether they can learn something. Bandura (1997), whose work in the area is most influential, has shown that what students believe about what they can and can't do influences all sorts of academic decisions from choice of major, to participation in activities, to their pursuit of job interviews. The power of these beliefs is illustrated by things like test anxiety, where a student may know the material very well but because the testing situation raises all sorts of doubts about capability she performs poorly.

Because beliefs about self-efficacy are formed from a variety of different sources of information, teachers and classmates can be instrumental. To build a sense of self-efficacy, students need to be in learning situations that "(1) construe ability as an acquirable skill, (2) deemphasize competitive social comparisons and highlight self-comparison of progress and personal accomplishment, and (3) reinforce the individual student's ability to exercise some control over the learning environment" (Stage, Muller, Kinzie, and Simmons, 1998, p. 26).

The bottom line is that many students do not have much faith in themselves as learners. Learner-centered approaches respond by challenging those beliefs with things like carefully sequenced assignment sets, which increase the likelihood of success, with clear demonstrations of how effort makes a difference, and with teaching that lets students own the responsibility for learning and for the decisions they make about learning.

Radical and Critical Pedagogy

This educational theory was first and now most famously articulated by the Brazilian educator Freire in a 1970 book, *Pedagogy of the Oppressed* (rereleased in 1993 by a U.S. publisher). The central tenet of radical or critical pedagogy (I will use the terms interchangeably, although those who work in this area make distinctions between the terms) rests on the idea that education is 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."

Freire's equation of education with social change grew out of his experiences teaching illiterate peasants to read, a skill they then used to challenge corrupt political regimes that had long repressed them. Those who view the growth of knowledge as an objective, rational process oppose attaching this "political" agenda to education. 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) offers a clear description of how this political agenda manifests itself in every classroom. "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."

As you might suspect, this theory does not endorse teaching as the transmission of knowledge from authorities. Aronowitz (1993, p. 89) explains Freire's intentions for the classroom: "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."

The idea of education as a vehicle for social change is not a dominant feature of current learner-centered practices. Those of us who use these approaches, especially in more egalitarian countries and cultures, are not trying to educate the masses so that they can redress social injustices. That may be an implicit goal of all education, but it's not the reason usually given for adopting these approaches. The interest is more in overcoming students' predilection to passivity. We are trying to teach in ways that encourage students to accept responsibility for learning. We want them to leave our classes believing that what and how they have learned enables them to figure out more things on their own and for themselves.

My experiences talking about learner-centered teaching have convinced me that the power issues raised by this theory are a

central concern to faculty. Time and again in workshops, teachers tell me that students are not ready to handle learning decisions. They are unprepared and not motivated. They need and want teachers who tell them exactly what to do and how they must do it.

This transfer of power to students realized initially by giving them some control over learning decisions is further addressed in a masterfully edited conversation between Freire and Horton (Horton and Freire, 1990). Horton's theories of education emerged out of his work preparing disenfranchised African Americans to pass voting tests. Both Freire and Horton shared power with the poorest of poorly prepared students, those who could not read. And did they find that even these students could be trusted with decisions about their learning? They did indeed, and when students were so trusted, their motivation to learn increased dramatically.

Radical pedagogy challenges many common assumptions about who is responsible for what in the teaching learning process. It is a theory that questions the role of teacher authority in student learning experiences and one that challenges teachers to explore ethically responsible ways of sharing power with students. Making all the learning decisions for students may be what they want, but it is not an approach that develops confident, motivated learners. Radical pedagogy is about changing the power dynamic in classrooms for the benefit of students and learning.

Feminist Pedagogy

Feminist pedagogy is also about changing the power dynamic in the classroom, but for reasons that have more to do with teachers than with students. Like radical pedagogy, this theory finds that most 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 a history of male domination, and the forms patriarchy entrenched in society have found root in the academy and its classrooms. As a result, students (usually females, especially in male-dominated fields) are treated differentially. Their learning is inhibited by power structures that protect the powerful.

Feminist pedagogy sees patriarchy as of a perversion of power. Those in power love and protect their power to the disadvantage of those they control. They resist giving up power, not admitting their love of power, but instead offer up reasons why those in their classrooms are not capable of making decisions for themselves. Said more bluntly, the power issue is more about faculty and less about students.

Being in control in the classroom does come with a seductive set of advantages that include being able to set the agenda, direct the action, squelch most forms of dissent, and showcase one's intellectual and pedagogical prowess. The benefits of being in control may be the reason some teachers object to learner-centered approaches that require them to share power. This theory prompts individual teachers to explore the real reasons why learner-centered approaches seem untenable.

In feminist classrooms, teachers are facilitators of learning. More metaphorically, the teacher is like the maestro who directs others to make music or the gardener who prepares and plants, feeds, and waters, trims and prunes, making it possible for flowers to bloom with beauty and fragrance, or the midwife who brings experience and expertise to the birth of learning.

Feminist theory also critiques the competitive aspects of education. It posits that education does a much better job of teaching students to compete than to cooperate. Although not a feminist scholar, Kohn (1986) amasses a persuasive collection of evidence against the competitive aspects of educational practices such as grading on a curve. Learner-centered approaches encourage cooperation. They value the learning that occurs when students collaborate and work best in classrooms where learning can happen anywhere and should happen everywhere. Feminist hooks (1994, p. 12) describes these classrooms as "radical spaces of possibility."

Because the messages of both radical and feminist pedagogy are confrontational and the agenda political, discussion of them mostly occurs in venues far removed from the classroom. As a consequence, most faculty are unfamiliar with work done in these areas, even though many learner-centered ideas can be traced back to these theories. These more democratic and equalitarian views of education call into question traditional power structures

and the role of teacher authority. They propose that students be empowered to accept responsibility for learning and that teachers are successful when they are no longer needed.

Constructivism

At the core of this currently prominent educational theory is 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). Fosnot (1996, p. 29) expands this description by explaining that learning "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." This theory of education and learning rests on the work of a variety of psychologists and philosophers, most notably Piaget, Bruner, von Glaserfeld, and Vygotsky.

Unlike critical pedagogy and feminist pedagogy, which are almost never mentioned in the work of practitioners, constructivism is regularly offered as a justification for using learner-centered approaches. The approaches associated with constructivism often involve group work, although those writing about the theory more regularly refer to the act of individual learners connecting new information to what they currently know in ways meaningful to them. The distinction is something of a moot point, because when students work together in groups, each group member still deals with content individually, relying on his or her own experiences and understandings.

Early on, the group work most often associated with constructivist theories was collaborative learning, as promoted by Bruffee (1993), who advocated that student groups explore complex, cross-disciplinary problems. With a teacher or teachers among them as master learners, these groups would search for new, integrated, and often innovative solutions to the problems. This early work spawned a variety of learning community models that use

course structures to connect students, content, and teachers in exploratory learning situations. Learning community experiences are now part of college curricula at many institutions.

The idea that students might be involved in knowledge construction fits comfortably in the humanities and social science 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. As a consequence, objections to constructivist theories came first from these fields, although at this point they have been raised by educators in many fields.

One of the objections raised first involves the inefficiency of letting students discover knowledge for themselves. It takes time and often includes time wasted pursuing answers in places where they won't be found. Courses are sequenced assuming that a specified amount of content has been "covered" and can be built on in the next course, although most teachers have discovered content covered does not always mean content learned or remembered. Constructivists respond that in the process of figuring things out for themselves, students develop valuable learning skills. They learn problem solving by solving problems, even when they don't always do it perfectly; they learn to ask questions by asking questions; they learn to evaluate answers by evaluating answers; they learn to think critically by thinking critically.

It has been practitioners who have pointed out the importance of balance between the student's need to discover and the teacher's need to tell. Chemistry faculty members Ditzier and Ricci (1994, p. 687) write: "It takes all of our pedagogical skills to discover, on a daily basis, the right mix of interaction and passive observation that balances the need to present the chemists' elegant way of thinking with the importance of fostering student creativity." In the classroom, it doesn't have to be either-or; it can be a balance of both. Sometimes the content itself makes clear when students should simply be told an answer and when they should be working to discover it on their own.

A second objection involves the role of the teacher in learning environments where students are doing the messy work of learning for themselves. Those who object say it isn't fair or ethical to

give students a complicated problem and then let them sink or swim. Constructivists respond that this isn't what they are proposing; they want teachers to *support* learning, rather than *direct* it. Duffy and Raymer (2010), writing about inquiry-based learning, an example of a constructivist approach, explain that the guidance provided to learners is a critical part of the method: "However, the guidance is focused on promoting students' critical thinking rather than telling them what to do or what to pay attention to" (p. 4). Instructors using constructivist approaches do lecture, but generally this direct transfer of information occurs after students have grappled with the issue, after they have a sense of what it is they need to know. The benefit of waiting is that once students realize they need to know something, they listen attentively for the answers.

And finally, some object because they think constructivism means that teachers must give equal weight to whatever students propose, that every construction of personal meaning is acceptable, even those that aren't right or very good. This objection culminates with the assertion that constructivism dilutes the intellectual integrity of course content. It sacrifices academic rigor and standards.

The constructivists see this as another prevarication of what they are proposing. Constructing knowledge does not mean the learner makes up the knowledge—it's something much closer to positioning the new knowledge so that it connects with something already known and therefore makes sense to the learner. Teachers should pay attention to student understandings, not because they are viable alternatives to well-established facts, but because the way students think should shape the way they are taught. Moreover, once students have arrived at a conclusion or decided on a meaning, challenging their thinking is the next step in the process. Teachers should question students and design activities that require students to explain and defend what they propose. The goal is to get students to see quality variations among solutions.

Cooperative learning—a form of group work with a tightly prescribed task, interdependence among groups members, but individual accountability—has been used widely in the science disciplines in part because it responds to some of these objections. However, most cooperative learning structures are only marginally

constructivist. Recent years have seen the rise of a wide range of group work models (Process-Oriented Guided Inquiry, or POGIL; Guided Inquiry; and Peer-Led Team Learning, or PLTL; among others), which blur the distinctions between collaborative and cooperative learning. Most of these new models do retain the core ingredients of constructivism—students in groups are working on open-ended problems, they are accessing and organizing information they discover, and they are crafting their own solutions. New research highlighted in the next chapter documents how amazingly effective some of these approaches can be.

Beyond use by individual faculty, constructivist principles have been used to realign whole curricula, course sequences, and multiple sections of individual courses. For an example, see Ege, Coppola, and Lawton (1996), who used constructivist theories to redesign the introductory organic chemistry course taken by all chemistry, biology, and premed majors at the University of Michigan.

Constructivism closely aligns with many learner-centered practices. Most fundamentally, it proposes that students must be interacting with the content—something far different from the passive receipt of information from an authority. In the constructivist interaction, students connect new material with what they already know. They may mold and shape the new information so that it fits with what they already believe and know, or they may use the new information to reshape, enlarge, and deepen their current understandings. A form of the verb "to construct," this is about students building knowledge with the guidance of teachers who have built knowledge structures out of this material previously.

Transformative Learning

Transformative learning theory is based on constructivist assumptions, according to Cranton (2006, p. 23), an adult educator who has done much work in this area. It is about learners constructing personal meaning and doing so through processes of examination, questioning, validating, and revising—what adult educators call critical reflection. But it is the conclusion of the reflection process that differentiates transformative learning from construc-

tivism. As the name indicates, this is learning that transforms, that changes learners in deep, profound, and lasting ways. Often what changes are taken-for-granted beliefs, unchallenged assumptions, and habits of the mind never before questioned. Sometimes this learning can be the result of a single event—what Mezirow and Associates (2000) call a "disorienting dilemma"—or the transformation can take place gradually, over time, as events and experiences trigger more critical reflection. Either way, this is the kind of learning that changes what people believe, how they act, indeed, who they are. It should be the ultimate objective of education, especially higher education.

This is another area of theory and research not generally known by those interested in learner-centered teaching, even though the practitioner literature is filled with accounts of changes in learners that those in adult education would call transformative. Unfortunately, teachers typically attribute changes that are transformative to chance—changes happen or they don't; they can't be planned or controlled. When teachers take this view, they don't think about specific things they might do to promote, advance, and otherwise increase the possibility of transformative learning experiences. So even though there is evidence (ably summarized by Pascarella and Terenzini, 1991, 2005) that college experiences change students, there's a possibility of more transformative learning experiences if teachers see a role for themselves in promoting it.

There's also a strong possibility that because learner-centered approaches focus the student so directly on learning, they lead students in the direction of transformative learning experiences. These are approaches that encourage reflection, critique, and the development of self-awareness. Learners can be transformed across a broad range of areas, according to adult education theory, and it may be that learner-centered approaches increase the likelihood of various kinds of transformative experiences.

Most of us using these approaches have seen them transform what many students believe about learning. Once they start taking responsibility for learning and making some of the decisions associated with it, they begin to see what they can accomplish when they are independent, self-directed learners. At some point there

really is no turning back. I was abruptly confronted with this once in my graduate course on college teaching. We had invited a renowned scholar to class to discuss questions students had raised about some of his research and writings. He arrived and proceeded to lecture from a carefully prepared set of notes. Shortly after he began, a student interrupted, "Doctor, we asked you to class because we have questions we'd like to discuss with you. We'd prefer to deal with our questions and share ideas with you." The scholar was clearly taken aback, but a discussion did follow, and after class he remarked to me, "I've never had students do that to me before, but their questions clearly indicated they didn't need to listen to a lecture on the topic."

Although learner-centered approaches do transform beliefs about learning effectively, they don't transform all students. Perhaps they would if students experienced them more regularly in the curriculum, or if we knew more about which designs and what sequences had the greatest impact, perhaps we could better promote transformative learning. Even so, enough is known to justify the purposeful intervention of teachers to learning that changes students in these deep and profound ways.

Moreover, experience with learner-centered approaches doesn't just transform students. This way of teaching can also transform what teachers believe about learning and their role as teachers. I've already described how profoundly it changed my beliefs about teaching and practices in the classroom. These equally profound changes are also regularly described in the practitioner literature, but again, teachers do not identify what happened to them as a transformative learning experience. For examples, see Tompkins (1991), Mazur (2009), and Spence (2010).

This book begins with my first learner-centered teaching experiences and then subsequent discovery of the theories on which these approaches rest. As my experiences have unfolded and as learner-centered ideas have linked with various education theories, there is no neat, orderly progression of experiences, ideas, or connections. Things are more muddled and messy than clear and coherent. And the hodgepodge nature of this knowledge domain continues in the research realm, as the next chapter

reveals. Learner-centered teaching was not discovered, explained by a theory, and then proven with a systematic line of research. But despite the inherent messiness of how one teacher stumbled onto these ideas and how the ideas themselves loop over and under, around and through a variety of educational theories, there is support—theoretical, empirical, and experiential—that these approaches to teaching promote more and better learning for students.