

Part One

Transforming Teaching to Be More Learner-Centered

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Chapter 1

Introduction

ARE YOU INTERESTED in improving the quality of your students' learning? Do you want your students to be able to better retain what they learned in your courses so that they will be able to apply their knowledge to new situations? Would you like your students to take more responsibility for their learning? Although you may have answered yes to all of these questions, you may not know how to achieve these learning outcomes. This book offers practical suggestions within a systematic framework to help you make changes in how you teach that will enhance your students' learning.

Instructors usually plan courses by deciding what content they will teach and how they will organize the content into lectures. The emphasis on what instructors do often leads to students' being passive learners. Further, instructors and employers complain that students or graduates cannot apply what they previously learned and are unable to learn on their own. For over a decade, literature geared toward college and university instructors (Barr & Tagg, 1995; DeZure, 2000; Fink, 2003; Gardiner, 1994) has called for reform that changes the focus from what *instructors* do to what the *students* are learning. Educators call the traditional method *instructor-centered teaching* and the newer format *learner-centered teaching*. Although this call for action began with isolated individuals, it has gained increasing support from many international and national professional organizations, such as Association of American Colleges and Universities, American Educational Research Association, the National Science Foundation, and the National Research Council.

Learner-centered teaching does not use a single teaching method; rather, it emphasizes a variety of different method types that shift the role of instructors from givers of information to facilitators of student learning or creators of an environment for learning. With all of the ways we have to disseminate information using technology, the instructor should not be the primary source of knowledge for students. In learner-centered teaching, the instructor focuses on what students are learning, how they are learning, and how they can use the learning (Weimer, 2002).

Why Instructor-Centered Approaches Are Not Very Effective

Research shows that many college students fail to engage with the material. Instead, students often memorize material for which they have no understanding—and thus they often do not remember material they studied earlier.

The National Science Foundation (NSF) sees many disadvantages to instructor-centered approaches. According to the NSF, there are unintended consequences of too much emphasis on teaching at the expense of learning, including graduates who are not prepared to solve real-world problems and lack the skills and motivation to continue to learn beyond their formal education. The unintended consequences related to beginning students in the sciences include more students with negative attitudes toward the sciences, technology, engineering, and mathematics (the STEM disciplines) and high attrition rates in these educational programs, especially in the early courses. Although the NSF work focuses on the STEM disciplines, these claims probably apply to other disciplines as well (Springer, Stanne, & Donovan, 1999).

Resistance to Learner-Centered Approaches

Instructors are resistant to changing their instructional methods. Many disciplines are content-rich, and there is a perception that content coverage is very important. Some instructors believe that they cover less material if they use learner-centered approaches. Other instructors also feel that they do not have control over what material they must cover in their courses because their courses or content are prerequisites for more advanced courses. Further pressures for professional program accreditation lead many instructors to believe that they need to continue to use traditional teaching methods.

The choice of terminology can encourage or hinder instructors' acceptance of a teaching approach. The higher-education literature uses several terms to describe the approach that focuses on the learner or student. The first of these, *learner-centered teaching*, places the emphasis on the person who is doing the learning (Weimer, 2002), emphasizes the important interrelationships between instructors and learners (Blumberg, 2004), and focuses on the process of learning. The term *learner-centered teaching* appeals to instructors because it identifies their critical role of teaching in the learning process. A commonly used variation of learner-centered teaching is *learning-centered teaching*. *Learning-centered teaching* focuses on the process of learning. The phrase *student-centered learning* is also used, but some

instructors do not like it because it appears to have a consumer or customer satisfaction implication that they feel is not appropriate in educational settings. Acquiring an education, they feel, is not equivalent to purchasing an item. Learning does not come automatically to students simply because they pay tuition. *Student-centered learning* also seems to encourage students to be more empowered and appears to take the teacher out of the traditional critical role. In addition to the preceding reasons, I have chosen *learner-centered teaching* to be more consistent with Weimer's (2002) terminology.

Before I review the strong research evidence for why learner-centered approaches are superior to instructor-centered approaches, I will discuss a case study to help you visualize what a learner-centered course might look like. This case study illustrates how an instructor transformed a traditional course to make it very learner-centered.

Case Study: A Course That Became Learner-Centered

Andrew Peterson (Peterson, 2006) has taught a required management course to more than one hundred pharmacy students each semester for the past ten years. For the first five years, he and guest practitioners lectured to mostly uninterested students who did not see why they needed to take this course. Even though the course was worth four credits, students did not see the value of the material and thus did not routinely attend class. He assessed the students using multiple-choice examinations.

Five years ago, Peterson decided to transform this course to help students see the relevance of the content to their careers. Now he rarely lectures; instead, the students mostly work in small groups and make presentations to the class on the content.

Box 1.1 describes the management course as Peterson teaches it now. Table 1.1 shows the contrasts between the old manner in which he taught the course and the learner-centered ways in which he now teaches it.

Andrew Peterson perceives many advantages to the learner-centered way he now teaches the Pharmacy Systems Management course. As Table 1.1 shows, these advantages include increases in student engagement with the content, learning, personalization, student satisfaction, and students' ability to apply what they learn to other situations. I will be referring to this case study later in this book.

If you agree with him that the transformed methods for teaching this course are superior to the old ways and if you would like to learn how to

Box 1.1. Pharmacy Systems Management: A Learner-Centered Course

Pharmacy Systems Management is a required course for pharmacy students. The course introduces students to aspects of management that they are most likely to face in pharmacy practice, including human resource management and purchasing. Students learn to apply these concepts within the context of current pharmacy environments.

After discussions with other instructors, Peterson concluded that the way he assessed students reinforced their notion that this course was not relevant to them. He decided to assess students in ways that are more similar to how pharmacists would use the content of the course. This, he reasoned, might help the students connect the material with their future practice. Thus the first part of the transformation came about with a decision not to give exams. Although this seemed like an easy change, it forced Peterson to review the objectives of the course and of each individual class. He decided that written and oral assessments would more realistically represent what pharmacists actually do.

The review of the daily class objectives led Peterson to create student-management teams representing different types of pharmacies. The students work in their groups to solve problems relating to their type of pharmacy, because pharmacy systems management relies on teamwork and cooperation. For example, in one activity students determine what action the managers would need to take relating to medication errors. The students in a hospital pharmacy group discuss how they could prevent medication errors from occurring or how they would handle the public relations if an error did occur. Several times during the semester, each group presents some of its findings to the rest of the class, which allows students to hear how other types of pharmacies view a particular topic.

There are four required written assignments, several oral presentations, and additional elective assignments during the semester. These assignments assess the students' understanding of the content and help them reflect on their experiences. Two of the four required assignments are self-assessments. The midpoint assessment asks students to describe what they have learned in class so far, assess how well they are performing on their assignments and in their groups, and describe what they intend to do during the second half of the semester to improve (or maintain) their performance. The other required written assignments focus on content.

The instructor grades all assignments using a rubric-scoring sheet. Rubrics are checklists or scoring guides that list the concrete components you are looking for when you grade a student (Suskie, 2004). They also identify different levels of performance within each of these graded components. In this course, students receive the rubric ahead of time; they are encouraged to share their work with their group members and use the rubric as a guide for developing their papers. If a paper does not meet the satisfactory level noted in the rubric, the student must redo the paper until it meets that level. For each redo, there is an associated grade reduction.

The instructor determines grades based on a combination of performances in written assignments, oral presentations, and group participation. The instructor specifies what is required to earn each grade level. For example, to earn a C, the student must successfully complete the four required assignments and at least two oral presentations, plus four other written assignments, and must participate in 50 percent of the group activities.

teach in similar ways, read on! In the next sections, I will summarize the reasons why there is widespread support for learner-centered teaching. Then I will review the research evidence that learner-centered approaches lead to better outcomes than traditional instructor-centered approaches.

TABLE 1.1

Contrasts Between Instructor-Centered and Learner-Centered Approaches for the Pharmacy Management Course.

Course characteristics that remain the same	Instructor-centered characteristics of original course	Problems and concerns with the old way course was taught	Changes made	Learner-centered characteristics of the transformed course	Benefits to student learning and other outcomes
Class size: >100 students seated in an auditorium-style classroom	Instructor used no activities in which students interact with material, instructor, or each other.	Students often felt disconnected from faculty. Students tended to remain with their friends and not interact with others students.	Students are organized into twenty groups of six people representing the managers of different types of pharmacies. Students remain with their group throughout the semester.	Instructor routinely uses activities in which students interact with material, instructor, and each other	Instructor gets to know students individually as well as in groups. Students interact with other students with whom they normally would not; they report this is a benefit.
<i>Class schedule:</i> Class meets twice weekly for two-hour session.	Instructor used one approach, that of lectures, throughout the course without focusing on creating an environment for learning or accommodating different learning styles.	Students were not engaged and were bored by the lecture format.	Student groups engage in varied in-class activities. Groups make presentations.	Instructor intentionally uses various teaching/learning methods that are appropriate for student learning goals.	Students enjoy variety of activities done in class.
<i>Type of material students need to learn:</i> Students need to learn abstract, conceptual material,	Instructor used content that helps students build a knowledge base. Instructor allowed students	Students memorized facts; learned content in a superficial way without an emphasis on understanding	Students use active learning strategies in more than two-thirds of the classes. Students teach	In addition to building a knowledge base, instructor uses content to help students: • Evaluate why	Active learning, active engagement in the content promotes a deeper understanding of material.

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TABLE 1.1

Contrasts Between Instructor-Centered and Learner-Centered Approaches for the Pharmacy Management Course. (Continued)

Course characteristics that remain the same	Instructor-centered characteristics of original course	Problems and concerns with the old way course was taught	Changes made	Learner-centered characteristics of the transformed course	Benefits to student learning and other outcomes
<p>in contrast to scientific, factual content they learn in other classes.</p> <p>Students need to be able to apply information to their careers.</p>	<p>to memorize content.</p> <p>Instructor provided content so students can learn it in isolation, without providing opportunities for them to apply knowledge to new content.</p>	<p>and without personal meaning.</p> <p>Students did not feel material was important to their careers.</p>	<p>each other within their groups.</p> <p>Groups present to the entire class.</p>	<p>they need to learn content</p> <ul style="list-style-type: none"> • Practice using inquiry or ways of thinking in the discipline • Learn to solve real-world problems <p>Instructor encourages students to transform and reflect on most of the content to make their own meaning out of it.</p> <p>Instructor frames and organizes content so students can learn additional content that is not taught.</p>	<p>Use of groups as managers allows for direct application of material to simulated real-life situations.</p>
<p><i>Attendance policy:</i> Attendance is optional.</p>	<p>Although attendance was optional, the instructor felt students should attend even when</p>	<p>Class attendance varied from 25% to 75%.</p> <p>Students felt they could memorize</p>	<p>Students are responsible for learning during class through group activities and other active learning processes.</p>	<p>Instructor</p> <ul style="list-style-type: none"> • Helps students to take advantage of opportunities to learn 	<p>Student attendance at all classes increases to nearly 100% on group activity days.</p>

(Continued)

TABLE 1.1 (Continued)

Course characteristics that remain the same	Instructor-centered characteristics of original course	Problems and concerns with the old way course was taught	Changes made	Learner-centered characteristics of the transformed course	Benefits to student learning and other outcomes
	<p>they were not expected to be active learners. Instructor did not encourage students to take responsibility for their own learning. Instructor extensively used extrinsic motivators to get students to earn grades.</p>	<p>sufficient material to pass exams without coming to class. Poor attendance promoted dissension and dissatisfaction among those students who routinely attended. Often, students would look for "extra credit" for attending, as attendance did not positively improve one's grade (that is, nonattendees could get notes and still do well on tests).</p>	<p>Students cannot get notes from others when they miss active learning activities done in class. Grade directly relates to participation in group activities.</p>	<ul style="list-style-type: none"> • Fosters an understanding of consequences of not taking advantage of such learning opportunities, like missing class. Instructor inspires and encourages students to become intrinsically motivated to learn. 	<p>Students understand learning occurs in class and with peers. Students are accountable for all of their time and their efforts in class. Students see direct application of the material to their careers.</p>
<p><i>Assessment of students: Must assess students and assign a final grade.</i></p>	<p>Instructor used only two summative assessments (to make decisions to assign grades). Instructor did not integrate assessment within the learning process.</p>	<p>Promoted "learn and dump" phenomenon. Students did not appear to retain information in later years; often told other faculty "we never learned that."</p>	<p>Exams were eliminated from class. Assessments now include written assignments, group activities, group presentations, in-class assessments, written assessments,</p>	<p>Consistently throughout the learning process, instructor integrates:</p> <ul style="list-style-type: none"> • Formative assessment • Constructive feedback <p>Instructor mostly</p>	<p>Students feel more relaxed about learning material without the pressure of exams. Multiple assessment strategies allow students to demonstrate ability through various formats.</p>

(Continued)

TABLE 1.1

Contrasts Between Instructor-Centered and Learner-Centered Approaches for the Pharmacy Management Course. (*Continued*)

Course characteristics that remain the same	Instructor-centered characteristics of original course	Problems and concerns with the old way course was taught	Changes made	Learner-centered characteristics of the transformed course	Benefits to student learning and other outcomes
	<p>Instructor did not consider peer and self-assessments relevant.</p> <p>Instructor did <i>not</i> use</p> <ul style="list-style-type: none"> • Assignments that are open-ended • Test questions that allow for more than one right answer 		<p>and peer and self-assessments.</p> <p>Students contract for their grade by deciding on the amount of elective work they will do.</p>	<p>integrates assessment within the learning process.</p> <p>Instructor encourages students to use peer and self-assessments routinely.</p> <p>Instructor uses</p> <ul style="list-style-type: none"> • Mastery (students redo assignments until they reach acceptable level). • Contract grading (students contract for their grade based on how much acceptable work they do) to determine what grade students will earn. <p>Instructor routinely uses assignments that are open-ended.</p>	<p>Students retain information and use it in other courses.</p>

Widespread Support for Learner-Centered Teaching

There is a logical progression from knowing the advantages of learner-centered approaches, to accepting this approach, to making changes in your teaching. The support for why you should implement learner-centered teaching comes from numerous sources, including national educational reform task forces, research on student learning outcomes, accreditation standards, and educational and psychological research.

The increasing importance given to a national survey of college students' engagement in their educational activities highlights the focus on student learning. The National Survey of Student Engagement (NSSE) is a measure of educational quality and indicates the kinds of learning environments that the students encounter. The swift growth in the number of institutions of higher education using this survey is a testament to the widespread acceptance of learner-centered teaching (Ewell, 2001). Results from 972 colleges and universities surveying more than 844,000 students have led the NSSE researchers to develop five benchmarks of effective educational practices: raising the level of academic challenge, using active and collaborative learning, fostering meaningful student-faculty interactions, creating enriching educational experiences, and establishing a supportive campus environment (National Survey of Student Engagement [NSSE], 2005). All of these benchmarks are consistent with learner-centered teaching.

Student engagement through learner-centered approaches leads to desirable student outcomes. The benefits of learner-centered education include increased motivation for learning and greater satisfaction with school; these outcomes lead to greater academic achievement (Slavin, 1990; Johnson, 1991; Maxwell, 1998). Students in learner-centered programs differ from students in more instructor-centered programs in some concrete and specific ways (Blumberg, 2004); namely, they

- Know why they need to learn content
- Have a self-awareness of their learning abilities and how they acquire knowledge (Association of American Colleges and Universities, 2002)
- Can use knowledge to solve problems (Fink, 2003)
- Have the ability to continue to learn throughout their lives. (Association of American Colleges and Universities, 2002), as they can retrieve and evaluate information that they need to learn (Doherty, Riordan, & Roth, 2002)
- Can communicate their knowledge outside the classroom (Fink, 2003)

The assessments of student learning outcomes are fundamental to the current accreditation process for institutions of higher education and for professional programs. Student learning outcomes form a “common currency” with which one can judge the equivalence and value of various learning experiences (Middle States Commission on Higher Education, 2003b). This focus on the assessment of student learning is congruent with learner-centered teaching (Middle States Commission on Higher Education, 2003b).

Educational and Psychological Research Supports Learner-Centered Teaching

What psychologists and educators have discovered about learning and the learning process forms a strong rationale for implementing learner-centered teaching. A joint task force of the American Psychological Association and the Mid-Continent Regional Educational Laboratory integrated this research into the fourteen learner-centered psychological principles (Lambert & McCombs, 2000). Alexander and Murphy (2000) further summarized these learner-centered principles into the following five domains:

- The knowledge base
- Strategic processing and executive control
- Motivation and affect
- Development and individual difference
- Situation or context

I summarize this research here to enable you to use it as you transform your teaching and to help you describe why you made the changes you made.

The Knowledge Base

Current knowledge is the foundation on which students can build future knowledge (Alexander & Murphy, 2000). Learning is a constructive process that involves building links between new information and experiences onto the individual’s existing knowledge base. These links may add to, modify, or reorganize existing knowledge. In order to learn, each person needs to construct or make his own meaning of knowledge (Alexander & Murphy, 2000). Therefore you, as an instructor, cannot construct knowledge for your students. When students do not integrate new knowledge with prior knowledge, they cannot use this knowledge in the future even in situations just slightly different from the one in which they learned it.

Often when students just memorize material they are not establishing links to prior knowledge (Alexander & Murphy, 2000).

Prior knowledge is a good predictor of future learning. For example, children's religious affiliation influenced how they understood and recalled information contained in texts about religious practices (Lipson, 1983). When prior knowledge is flawed or misleading, it interferes with one's ability to learn correct information. For example, when scientific facts or theories do not support commonplace notions of science, students do not change their beliefs about how the world functions. Therefore, one of the mainstays of good science instruction is that students must confront their misconceptions about the world in order to learn science (Svinicki, 2004).

Knowledge is domain- or discipline-specific and multifaceted. Novices' organization of knowledge is different from an expert's organization of this knowledge. What is clear to you as a content expert in your field is often not clear to your students. In addition, students can be novices in some disciplines while being expert or intermediate in other domains (Alexander & Murphy, 2000).

Strategic Processing and Executive Control

Strategic processing means that a person's mental actions and executive control are self-regulating or that the person is monitoring his or her mental actions. Psychologists sometimes group these under the terms *general cognitive* or *meta-cognitive strategies*. In addition to having a knowledge base, successful learners think about their own learning and assess how successful they are as learners. They consciously use different thinking strategies in different learning situations (Alexander & Murphy, 2000). Throughout higher education, you can expose students to different learning strategies and allow them to practice them.

Students who think about their own thinking (a practice called *meta-cognition* by psychologists) learn better than students who do not employ this strategy. Regardless of your discipline, you can foster meta-cognition by encouraging students to monitor their thinking. You can ask questions about your students' thought processes as they conduct their work (Alexander & Murphy, 2000). This is similar to mathematics instructors asking students to show their work and not just the answers. You can ask students to explain what they do when they cannot find the answer or cannot solve the problem.

Researchers found that college students use a combination of three different approaches to their learning: deep, surface, and strategic (Ramsden, 2003).

Surface learning is learning in isolation; it often employs rote memorization of facts. Students easily forget what they studied through surface learning because they did not make the content meaningful to them. *Deep learning* contrasts sharply with surface learning because in deep learning the students connect what they are presently learning to their own experiences. They make connections between a theory and real-world examples. Students organize the information when they are engaged in deep learning. As you might suppose, psychologists advocate for deep learning. *Strategic learning* is doing whatever it takes to pass the course or get a good grade, such as doing assignments according to how previous successful students did them. Retention varies with strategic learning approaches, depending on what the students do.

Students may use different learning approaches depending on what instructors or their educational programs demand of them. Survey results show that as students enter medical school, they largely use surface and strategic learning approaches. There are two major forms of the preclinical or classroom phase of medical education: one form relies largely on lectures to cover the material, the other uses facilitated small-group discussions of patient cases. There are few lectures in the latter programs and these students often read the material on their own. Evidence from many different medical programs in North America, Europe, and Australia indicates that students in these small-group discussion programs use deep learning. Their peers in the lecture-based programs, some even in the same school but in different tracks, continue to use surface and strategic approaches to learning (Blumberg, 2000).

Motivation and Affect

Motivation relates to how needs and desires direct thoughts and behaviors. Affect, a related construct, refers to the feelings or emotions that people have. Affect also influences thoughts and behaviors (Alexander & Murphy, 2000).

The effort that students invest in the learning process greatly influences the quality and quantity of their learning. Conclusive research evidence supports these observations. This research shows that personal involvement, intrinsic motivation, and personal commitment lead to more learning. People who have a positive self-concept, who set realistically high goals for themselves, and who think that school is relevant to them do better in school than those who do not have these characteristics (Alexander & Murphy, 2000).

Research supports common educators' beliefs that motivational constructs such as confidence and control over learning influence learning and

achievement. Beliefs about one's own competency or ability to succeed, called *self-efficacy*, correlate with grades. Much research evidence shows that confident students try harder, are more engaged in their learning and thinking, and ultimately do perform better than students with less self-efficacy. Further, students who believe that they have control over their learning are more likely to be more actively engaged in their academic work and work harder, achieving higher grades than do students who do not believe they have control over their learning (Pintrich, 2003).

Just as knowledge is domain- or discipline-specific, so is a student's motivation to learn discipline- or task-specific. Students' interests vary among their courses. When students perceive a course to be not relevant to their interests or their careers, they are less likely to be motivated to excel in the course. As a learner-centered instructor, you try to find ways for students to connect students' personal interests to the overall course goals. For example, in a twentieth-century literature course, students can select from a list of novels for their own reading. Students very interested in war can read appropriate war novels, whereas others might choose books that look at a local culture of the same period.

Development and Individual Differences

Human development is a process that considers common and unique characteristics of people at the same age. Individual differences encompass variations among humans regardless of age. This domain considers the roles of both nature and nurture in learning (Alexander & Murphy, 2000).

Although most people think of development as a process limited to preschool, primary, or secondary school students, college students continue to develop. For example, Perry (1999) felt that college students go through four phases of how they understand knowledge and accept alternative perspectives.

There are important individual differences in learning. Students have different capacities for learning that are a function of prior experience and heredity. By the time students enter college they have developed their own preferences for how they like to learn. As students may not be aware of those learning preferences, asking students to take one of the many different self-assessment inventories can be very insightful. A commonly used one is the Kolb Inventory of Cognitive Styles, which places people on four axes: feeling, watching, thinking, and doing. The Myers-Briggs Type Indicator that places people along four continua of introversion/extraversion, thinking/feeling, sensing/intuition, and perceiving/judging is the foundation for the Kolb Inventory of Cognitive Styles (Bean, 1996). Although

the Myers-Briggs is a personality inventory, researchers have found that the personality types also predict learning preferences. For example, depending on where students fall on these continua on the Kolb or the Myers-Briggs Inventories, they prefer and excel at different types of writing assignments (Jensen & DiTiberio, 1989).

Situation or Context

How students learn, the situation, and the context all greatly influence what they learn. Theories of learning highlight the roles of active engagement and social interaction in the students' own construction of knowledge (Bruner, 1966; Kafai & Resnick, 1996; Piaget, 1963; Vygotsky, 1978). People learn better when they interact and collaborate with others throughout the instructional task. In collaborative and cooperative learning situations, students can see and appreciate the perspectives of others. These situations also facilitate reflective thinking that can promote better learning (Lambert & McCombs, 2000). The social context of learning is an integral part of the learning process, not merely a background context that the student encounters (Resnick, 1991).

A meta-analysis review of research literature indicates that many students, especially those in the sciences and engineering or technology disciplines, learn best through active, small-group activities. Small-group learning is particularly effective in the early courses to reduce the attrition rates of students desiring to major in the discipline or for those nonmajors who want to gain literacy in that discipline. The positive gains associated with small group learning are significantly greater for students who are part of underrepresented groups in higher education, female, or both (Springer, Stanne, & Donovan, 1999).

The instructor plays essential roles in creating the learning situation or context. Rather than being the person who gives the information, the instructor's primary role is to be a guide or facilitator of learning by creating environments for student learning. In fact, when instructors encourage students to discuss the material, students perform better than they do after simply listening to lectures. Research shows that personal involvement, intrinsic motivation, and personal commitment lead to more learning (Alexander & Murphy, 2000). Through the creation of learning environments, you develop active learning situations for your students.

Active learning can take many forms, but it always actively engages the students in the learning process. Active learning requires, among other things, that the students perform meaningful learning activities and think about what they are doing (Bonwell & Eison, 1991). Small-group discussions,

requiring students to use inquiry to solve problems individually, and reflection or journal writing are common examples of active learning (Bean, 1996). There is a great deal of research supporting active learning, including a meta-analysis of the effectiveness of active learning. The results from 480 engineering students enrolled in twenty-three different courses employing both active learning and lecture methods at six different universities showed significantly greater learning gains for those students enrolled in the active learning courses (Prince, 2004).

Summary of the Research Evidence

When we consider all that psychologists and educational researchers know about how people learn, we have strong evidence that should lead us to adopt learner-centered approaches instead of instructor-centered approaches. One consistent recommendation of all of this research is the need to shift the emphasis from what *you* do to what the *students* do to learn.

When the focus becomes student learning, colleges attain higher rates of student retention and have better-prepared graduates than those students who were more traditionally trained (Matlin, 2002; Sternberg & Grigorenko, 2002). This body of research is the foundation of the learner-centered approaches discussed in this book. Many of the components discussed in this book parallel the points in this review of the literature. Here is a summary of the relevant, major points of this research:

- Students need to create their own understanding of material by connecting it with what they already know (Alexander & Murphy, 2000).
- Successful students are actively involved in their own learning, monitor their thinking, think about their learning, and assume responsibility for their own learning (Lambert & McCombs, 2000).
- Knowledge of learning preferences can lead to success in college because individual differences interact with teaching and learning methods in ways that can be helpful or hindering (Bean, 1996; Grasha, 1996; Lambert & McCombs, 2000).
- Personal involvement, intrinsic motivation, confidence in one's abilities to succeed, and a perception of control over learning lead to more learning and higher achievement in school (Alexander & Murphy, 2000).
- Learning is a social process; in comparison studies between students in lecture and active learning courses, there are significantly more learning gains in the active learning courses (Springer et al., 1999).

Application of This Research to Support Teaching

Although the psychological literature builds a strong case for learner-centered teaching, it is abstract and hard to translate into classroom or online educational practices. Maryellen Weimer, in her 2002 book *Learner-Centered Teaching*, discussed five practices that need to change to achieve this type of teaching. This organizational scheme brings all of the previous research and literature into a more applied focus for instructors. She broadly labeled these five practices as the Function of Content, the Role of the Instructor, the Responsibility for Learning, the Purposes and Processes of Assessment, and the Balance of Power. The next section of this chapter explains these five practices or dimensions of learner-centered teaching.

The Five Dimensions of Learner-Centered Teaching

Here is an overview of the five dimensions of learner-centered teaching.

- *The function of content* in learner-centered teaching includes giving students a strong knowledge foundation, the ability to apply the content, and the ability to learn more independently. Students need an understanding of why they need to learn the content, and they need to be actively engaged in their learning.
- *The role of the instructor* focuses on helping students learn. Instructors should not just disseminate information. Instead, they should create an environment in which students can learn. The teaching and learning methods that instructors use should be appropriate for student learning goals.
- *The responsibility for learning* shifts from the instructor to the students. Instructors should proactively assist their students to take responsibility for their own learning by creating situations that motivate students to accept this responsibility. Further, instructors should guide students to acquire skills that will help them learn in the future. When students assume responsibility for their own learning, they become self-directed, lifelong learners who are aware of their own abilities to learn.
- *The purposes and processes of assessment* shift from only assigning grades to include providing constructive feedback to assist student improvement. Learner-centered teaching integrates assessment with feedback as a part of the learning process.
- *The balance of power* shifts so that the instructor shares some decisions about the course with the students, such that the instructor and

the students collaborate on course policies and procedures. Learner-centered teaching maintains an appropriate balance of power between the instructor and the students by giving students opportunities to learn and some control over expressing perspectives and their methods of learning and assessment.

Contrasts Between Instructor-Centered and Learner-Centered Approaches

Contrasts between instructor-centered approaches and learner-centered approaches further explain each of the five dimensions. These contrasts between these two approaches illustrate differences in what you as an instructor do. In addition, your behaviors lead to differences in what you expect your students to do. Table 1.2 contrasts instructor-centered approaches with learner-centered approaches on one essential component of each of these five dimensions of learner-centered teaching.

TABLE 1.2
Contrasts Between Instructor-Centered and Learner-Centered Approaches on Each of the Five Dimensions of Learner-Centered Teaching.

Dimension	Definition of this dimension	An essential component	Instructor-centered approach	Learner-centered approach
The Function of Content	Content includes building a knowledge base, how the instructor and the students use the content.	Level to which students engage in content.	Instructor allows students to memorize content.	Instructor encourages students to transform and reflect on most of the content to make their own meaning out of it.
The Role of the Instructor	An essential role of the instructor is to assist students to learn.	Instructor uses teaching and learning methods appropriate for student learning goals.	Instructor <ul style="list-style-type: none"> • Does not have specified learning goals <i>and/or</i> • Uses teaching and learning methods that conflict with learning goals 	Instructor intentionally uses various teaching and learning methods that are appropriate for student learning goals.

(Continued)

TABLE 1.2

Contrasts Between Instructor-Centered and Learner-Centered Approaches on Each of the Five Dimensions of Learner-Centered Teaching. (*Continued*)

Dimension	Definition of this dimension	An essential component	Instructor-centered approach	Learner-centered approach
The Responsibility for Learning	Students should assume greater responsibility for their own learning over time.	<i>Responsibility for learning should rest with the students.</i>	Instructor assumes <i>all</i> responsibility for student learning (provides content to memorize, does not require students to create their own meaning of content, tells students exactly what will be on examinations).	Instructor provides increasing opportunities for students to assume responsibility for their own learning, leading to achievement of stated learning objectives.
The Purposes and Processes of Assessment	There are additional purposes and processes of assessment beyond assigning grades.	Formative assessment (giving feedback to foster improvement).	Instructor <ul style="list-style-type: none"> • Uses only summative assessment (to make decisions to assign grades) • Provides students with no constructive feedback 	Consistently throughout the learning process, instructor integrates <ul style="list-style-type: none"> • Formative assessment • Constructive feedback
The Balance of Power	The balance of power shifts so that the instructor shares some decisions about the course with the students.	Flexibility of course policies, assessment methods, learning methods, and deadlines.	Instructor mandates all policies and deadlines. <i>or</i> Instructor does not adhere to policies.	Instructor is flexible on most <ul style="list-style-type: none"> • Course policies • Assessment methods • Learning methods • Deadlines <i>and</i> Instructor always adheres to what instructor has agreed to with the students.

An Incremental Approach

As Table 1.2 shows, the contrast in teaching methods between the instructor-centered and learner-centered approaches is quite large. Just listing the learner-centered approaches may not suggest ways to change your own teaching. The dimension “The Responsibility for Learning” shown in Table 1.2 illustrates this contrast. Most instructors believe that students should assume responsibility for their own learning, but their behavior and that of their students do not always support this philosophy. Instructors may not know how to help students assume increasing responsibility for their own learning.

The methods we use to teach are quite varied; therefore, our teaching is necessarily at different levels of transitioning from instructor-centered to learner-centered. Further, because it is easier to make gradual changes in our teaching, this book proposes an incremental approach to transforming courses to be more learner-centered. This book discusses how you can make changes in your teaching gradually by changing only a few components within these five dimensions of learner-centered teaching at a time. Even these small steps often have a significant impact on the overall learner-centeredness of a course. Furthermore, small steps in one component often have spillover effects on other dimensions.

Moving from Instructor-Centered to Learner-Centered Teaching

Incremental steps allow you to make changes gradually as you make a transition from where you are now toward learner-centered teaching. The incremental approach used in this book describes two levels of transitioning for each component of each of the five dimensions of learner-centered teaching. This incremental approach makes the transformation process more manageable.

For example, Table 1.3 shows the incremental steps between the instructor-centered and learner-centered approaches on the essential component, the level to which students engage in content from the Function of Content dimension. Similar incremental steps exist for each of the other components. The two levels of transitioning, “lower” and “higher,” show small incremental steps, which are easier to implement. The last column on the right describes a learner-centered approach or the goals that you should be aiming for when transforming a course.

The instructor’s expectations and the way in which the instructor assesses the students determine the level to which students engage in the

TABLE 1.3

Incremental Transitions from Instructor-Centered to Learner-Centered Teaching on the Level to Which Students Engage in Their Learning.

The Function of Content				
Component	Employs <i>instructor-centered</i> approaches →	→ Transitioning to learner-centered approaches →		Employs <i>learner-centered</i> approaches
		Lower level of transitioning	Higher level of transitioning	
Level to which students engage in content	Instructor allows students to memorize content.	Instructor provides content so students can learn material as given to them without transforming or reflecting on it.	Instructor assists students to transform and reflect on <i>some</i> of the content to make their own meaning out of <i>some</i> of it.	Instructor encourages students to transform and reflect on <i>most</i> of the content to make their own meaning out of it.

content. In an instructor-centered approach, the instructor would allow the students to memorize facts, such as formulas or dates in history, without their having any meaning, and to later recall them on a test. At the lower level of transitioning, the instructor provides the content so that the students can actively learn it, perhaps by providing them with questions whose answers come directly from the textbook or the lectures. At the higher level of transitioning, the instructor provides activities that help students transform some of the content to make their own meaning out of it. For example, the instructor might ask the students to develop a chart or graph to summarize some material in the text. Finally, with a learner-centered approach, the instructor would expect the students to develop associations between what they read or heard in class and their own lives or real-world phenomena, thus forming their own meaning from all of the content. For example, the instructor could ask students to write journals reflecting on their reading. When students engage in the content at this level, they are more likely to remember it and be able to use it later.

Using Rubrics to Identify Incremental Steps Toward Learner-Centered Teaching

Table 1.4 is a rubric that shows the four levels between instructor-centered and learner-centered approaches on one essential component of each of the five dimensions of learner-centered teaching. Rubrics are matrices that

TABLE 1.4

Incremental Transitions from Instructor-Centered to Learner-Centered Teaching on One Component of Each of the Five Dimensions of Learner-Centered Teaching.

Dimension	An example of one component of this dimension	Instructor-centered approach →	→ Transitioning to learner-centered approaches →		Learner-centered approach
			Lower level of transitioning	Higher level of transitioning	
The Function of Content	Level to which students engage in content	Instructor allows students to memorize content.	Instructor provides content so students can learn material as given to them without transforming or reflecting on it.	Instructor assists students to transform and reflect on <i>some</i> of the content to make their own meaning out of <i>some</i> of it.	Instructor encourages students to transform and reflect on <i>most</i> of the content to make their own meaning out of it.
The Role of the Instructor	Teaching and learning methods appropriate for student learning goals	Instructor <ul style="list-style-type: none"> • Does <i>not</i> have specified learning goals <i>or</i> • Uses teaching and learning methods that conflict with learning goals 	Instructor : <ul style="list-style-type: none"> • Uses teaching and learning methods without regard for student goals • Does not use active learning activities 	Instructor uses <i>some</i> teaching and learning methods that are appropriate for student learning goals.	Instructor intentionally uses <i>various</i> teaching and learning methods that are appropriate for student learning goals.
The Responsibility for Learning	Responsibility for learning should rest with the students	Instructor assumes <i>all</i> responsibility for student learning (provides content to memorize; does not require students to create their own meaning of content; tells students exactly what will be on examinations).	Instructor assumes <i>most</i> responsibility for student learning (provides detailed notes of content to be learned and reviews content to be examined while helping students learn the material and meet objectives).	Instructor provides <i>some</i> opportunities for students to assume responsibility for their own learning.	Instructor provides <i>increasing</i> opportunities for students to assume responsibility for their own learning, leading to achievement of stated learning objectives.

(Continued)

TABLE 1.4

Incremental Transitions from Instructor-Centered to Learner-Centered Teaching on One Component of Each of the Five Dimensions of Learner-Centered Teaching. (Continued)

Dimension	An example of one component of this dimension	Instructor-centered approach →	→ Transitioning to learner-centered approaches →		Learner-centered approach
			Lower level of transitioning	Higher level of transitioning	
The Purposes and Processes of Assessment	Assessment within the learning process	Instructor <ul style="list-style-type: none"> • Sees assessment as less important than teaching <i>and</i> <ul style="list-style-type: none"> • Does not integrate assessment within the learning process 	Instructor <i>minimally</i> integrates assessment within the learning process.	Instructor <i>some-what</i> integrates assessment within the learning process.	Instructor <i>mostly</i> integrates assessment within the learning process.
The Balance of Power	Flexibility of course policies, assessment methods, learning methods, and deadlines	Instructor <ul style="list-style-type: none"> • Mandates all policies and deadlines <i>or</i> <ul style="list-style-type: none"> • Does not adhere to policies 	Instructor <ul style="list-style-type: none"> • Is flexible on <i>a few</i> course policies, assessment methods, learning methods, and deadlines <i>and</i> <ul style="list-style-type: none"> • Infrequently adheres to these flexible decisions 	Instructor <ul style="list-style-type: none"> • Is flexible on <i>some</i> course policies, assessment methods, learning methods, and deadlines <i>and</i> <ul style="list-style-type: none"> • Somewhat adheres to what was agreed upon 	Instructor <ul style="list-style-type: none"> • Is flexible on <i>most</i> course policies, assessment methods, learning methods, and deadlines <i>and</i> <ul style="list-style-type: none"> • Always adheres to what instructor has agreed to with the students

identify (1) important traits or components and (2) levels of performance within each of these components (Walvoord, 2004). Many instructors, such as the pharmacy management instructor described earlier in this chapter, use rubrics to grade student assignments efficiently and objectively (Suskie, 2004). I use rubrics in another way throughout this book, to show how you can determine the learner-centered status of courses. Further, these rubrics

show you how you can identify incremental steps in course transformation from instructor-centered to learner-centered approaches.

In the example given in Table 1.4, I have included only one essential component for each dimension of learner-centered teaching. In reality, experience tells us that each dimension is complex and is composed of more than one component. Through discussions with over 250 instructors and faculty developers, and a review of the literature on learning and learner-centered teaching, I have identified between four and seven major components of each of these five dimensions and developed a separate rubric for each of the five dimensions. Each of five rubrics corresponds to a different dimension of learner-centered teaching according to Weimer's (2002) ideas and contains specific components of the dimension. In the rest of the book, you will find detailed descriptions of the rubrics and the components, and implementation examples for each of these components. Each step of the rubrics explains what instructors can do to make their courses more learner-centered; the instructor's perspective is the focus throughout. You will have many opportunities to practice using the rubrics.

Table 1.5 shows the rubric for one of these dimensions, that of the Role of the Instructor. The rubric format is similar to the one already shown, with the component named or described in the column on the left column and four levels of transformation, from instructor-centered to learner-centered.

Using Rubrics at the Beginning of a Change Process

You can use the rubrics as a self-assessment tool at the beginning of a change process toward learner-centered teaching. First, the rubrics allow you to determine your status on the learner-centered continuum. Second, they help you identify specific components you might want to change. Third, the rubrics suggest incremental changes you can make on these components to transform your teaching.

Transforming your overall approach to teaching a course may take several years, whereas moving from one level to the next on a specific criterion on a rubric within a dimension is a realistic short-term goal. Chapter Three discusses the transformation process I propose in more detail. This transformation process to make courses more learner-centered is not an easy one, and you are likely to encounter a variety of obstacles along the way, but the results are worth the effort. Chapter Ten, *Strategies for Overcoming Obstacles and Resistance*, offers specific ways for you to overcome these obstacles. Although being a learner-centered instructor should be your goal, it is not necessary or practical to be learner-centered on every component.

TABLE 1.5

The Rubric for the Role of the Instructor Dimension of Learner-Centered Teaching.

The Role of the Instructor

Component	Employs <i>instructor-centered</i> approaches →	→ Transitioning to learner-centered approaches →		Employs <i>learner-centered</i> approaches
		Lower level of transitioning	Higher level of transitioning	
1. Creation of an environment for learning through (1) organization and (2) use of material that accommodates different learning styles	Instructor uses the same approach or approaches throughout the course even if the students are not learning.	Instructor does not focus on creating a learning environment, but students do learn.	Instructor creates a learning environment through use of one out of the two subcriteria.	Instructor creates a learning environment by using both subcriteria: through organization and use of material that accommodates different learning styles.
2. Alignment of the course components: objectives, teaching or learning methods, and assessment methods—for consistency	Instructor does <i>not</i> align objectives, teaching or learning methods, and assessment methods.	Instructor <ul style="list-style-type: none"> • <i>Minimally</i> aligns objectives, teaching or learning methods, and assessment methods <i>or</i> • Aligns two out of the three course components 	Instructor <i>some-what</i> aligns objectives, teaching or learning methods, and assessment methods.	Instructor explicitly, coherently, and consistently aligns objectives, teaching or learning methods, and assessment methods.
3. Teaching or learning methods appropriate for student learning goals	Instructor <ul style="list-style-type: none"> • Does <i>not</i> have specified learning goals <i>or</i> • Uses teaching and learning methods that conflict with learning goals 	Instructor <ul style="list-style-type: none"> • Uses teaching and learning methods without regard for student learning goals • Does not use active learning activities 	Instructor uses <i>some</i> teaching or learning methods that are appropriate for student learning goals.	Instructor intentionally uses <i>various</i> teaching or learning methods that are appropriate for student learning goals.

(Continued)

TABLE 1.5 (Continued)

The Role of the Instructor				
Component	Employs <i>instructor-entered</i> approaches →	→ Transitioning to learner-centered approaches →		Employs <i>learner-centered</i> approaches
		Lower level of transitioning	Higher level of transitioning	
4. Activities involving student, instructor, and content interactions	Instructor uses no activities in which students actively interact with material, or instructor, or each other.	Instructor uses a <i>few</i> activities in which students actively interact with material, or instructor, or each other.	Instructor uses <i>some</i> activities in which <ul style="list-style-type: none"> • Students actively interact with material, or instructor, or each other <i>or</i> <ul style="list-style-type: none"> • There are some three-way interactions 	Instructor <i>routinely</i> uses activities in which students actively interact with material, and instructor, and each other.
5. Articulation of SMART objectives: <ul style="list-style-type: none"> • Specific • Measurable • Attainable • Relevant • Time oriented 	Instructor <ul style="list-style-type: none"> • Articulates vague course objectives <i>and/or</i> <ul style="list-style-type: none"> • Does not articulate objectives in syllabus 	Instructor articulates in syllabus course objectives that do not have all five attributes of SMART objectives.	Instructor articulates SMART objectives in syllabus but does not refer to them throughout the course.	Instructor articulates SMART objectives in syllabus and regularly refers to them throughout the course.
6. Motivation of students to learn (intrinsic drive to learn versus extrinsic reasons to earn grades)	Instructor extensively uses extrinsic motivators to get students to earn grades.	Instructor <ul style="list-style-type: none"> • Provides <i>limited</i> opportunities for students to become intrinsically motivated to learn • Uses extrinsic motivators to get students to earn grades 	Instructor provides <i>some</i> opportunities for students to become intrinsically motivated to learn.	Instructor inspires and encourages students to become intrinsically motivated to learn.

Choosing a Course to Transform

You will have a better idea of how to become a learner-centered instructor if you apply what you learn about the transformation process to a course of your own. As you read the book, you will find opportunities to evaluate

the status of the course—the degree to which it is currently instructor-centered or learner-centered—and then to identify incremental steps for transforming it.

Before proceeding, choose the course on which you will work; to describe it, complete the worksheet given in the following application activity. For purposes of helping you understand this book, I recommend that you choose a course that meets these criteria:

- You are very comfortable with the course content and enjoy teaching it.
- The course is not in your own research area; if it is, you may be too close to the material to allow the course to become learner-centered.
- You have taught the course at least three times and expect to continue teaching it on a regular basis.
- You feel that you can improve the course so that students learn more or achieve better outcomes.

Using Rubrics to Determine Status of Educational Programs or for Teaching Dossiers

You can also use the rubrics as a program assessment tool to show the status of your curriculum or to show the changes that you and your colleagues have made toward becoming more learner-centered. If you and your fellow instructors were to do this before implementing changes and then afterward, you would be able to look at the changes your educational program made over time. Individual instructors can use the rubrics to document how their teaching has evolved as they incorporate more learner-centered approaches. These rubrics could be placed in teaching dossiers for promotion or when applying for new positions. You could include a rubric in your annual evaluation of your teaching. Chapter Three will further discuss this use of the rubrics.

Chapter Summary

This chapter introduced the concept of learner-centered teaching through a case study of a course that the instructor transformed from instructor-centered to learner-centered. The chapter described the advantages of learner-centered approaches and reviewed the literature that strongly suggests the use of learner-centered teaching. Next, the chapter contrasted instructor-centered teaching with learner-centered teaching, explaining the idea of incremental steps between these two approaches. Rubrics were introduced; for the purpose of this book, these contain checklists identifying

the components to consider when determining whether a course is instructor-centered or learner-centered. The rubrics also identify levels of performance or incremental steps within each of these components. The rubrics relate to Weimer's (2002) five dimensions of learner-centered teaching—the Function of Content, the Role of the Instructor, the Responsibility for Learning, the Purposes and Processes of Assessment, and the Balance of Power—which you will use as you read the rest of the book to determine how to transform a course of your own.

APPLICATION ACTIVITY

Choosing a Course to Transform

Pick a course that you want to analyze and think of how you can transform this course to be more learner-centered. You will be analyzing this course for most of the rest of this book.

Choose a course based on the criteria listed in the section "Choosing a Course to Transform."

Describe the Course Demographics

Course name and number _____

Type of course: classroom _____ laboratory _____ seminar _____ online _____
service-learning or field experience _____ other _____

Size of course: fewer than 20 students _____ 21–59 students _____
60–150 students _____ more than 150 students _____

Level of the course: developmental (remedial) _____ general education _____ upper level
undergraduate _____ graduate _____ professional _____

Continuing learning or in-service _____

Other special considerations (for example, you team teach the course with another instructor or you teach this course only in summer school—a short, intensive time)

Do you want to start by making small changes, perhaps just adding separate techniques?
Yes _____ No _____

Alternatively, do you perhaps want to be more integrative in your transformation by making more unified changes? Yes _____ No _____

