PRINCIPLES OF EFFECTIVE COURSE DESIGN: WHAT I WISH I HAD KNOWN ABOUT LEARNING-CENTERED TEACHING 30 YEARS AGO

David A. Whetten
Brigham Young University

Ten years ago, after 20 years as a university professor, I was asked to direct the teaching and learning support center at my university. I quickly realized I had almost no knowledge of the published scholarship on this subject. From my reading of this literature, I found the research on the predictors of student learning particularly informative. In particular, I gained an appreciation for the impact of course design. In this article, I summarize a framework for designing "significant learning experiences." In discussing the three key components of course design (learning outcomes, learning activities, and learning assessments), I offer tips and give examples relevant for the field of management. My intent is to share the most important information I have learned from a decade of conversations with experts on student learning—the things I wish someone had taught me 30 years ago.

Keywords: course design; learning-centered teaching; student learning; learning objectives; learning activities; learning assessment

Early in my career, following a discouraging semester of teaching, one of my mentors, Lou Pondy, advised me, "You'll warrant the title of professor, David, when you discover what you're willing to profess." Initially, I interpreted his counsel too literally—obsessing over what I would say at the end of each section of the course, for example, that would constitute my distinctive professorial stamp. Over time, I've come to understand that the most important professing I do as a teacher involves my thoughtful choice of reading material, assignments, activities, and, most of all, learning objectives. After all, our actions really do speak louder than our words.

To understand the importance I attach to my message, you need to know something of my journey. After being a professor at the University of Illinois for 20 years, I joined the Brigham Young University (BYU) Marriott School of Management faculty. Two years later, I was asked to serve as the director of the BYU Faculty Center, a faculty development campus-support unit with a specific charge to foster learning-centered teaching. I've now served for over a decade. This is not what I expected to be doing for roughly a third of my career, but it has been a worthwhile experience, in part because of what I've learned about being a better teacher—things that I wish someone had told me 30 years ago.

Reflecting on my decade of working with colleagues steeped in the scholarship of teaching and learning, I'm reminded of the following experience: Several years ago, I overheard a neighbor who was serving as a middle manager in a large company comment that he saw no reason to enroll in a management training workshop offered by a business school colleague because "it's not clear to me what a professor of management has to say that will help me be a better manager." A few years into my work at the Faculty Center, I realized that for most of my career I had held a similar view of professors of education: I was a successful teacher, so what could I learn from those who merely studied what I did for a living?

What I have, in fact, learned from these experts is that, broadly speaking, we are in the midst of an unfolding paradigm shift in higher education, from focusing on teaching to focusing on learning (Barr & Tagg, 1995; Campbell & Smith, 1997; Davis, 1993; Diamond, 1998; Halpern, 1994; Svinicki, 1999). Although good teaching fosters good learning, the point of the teaching–learning distinction is that teaching does not automatically translate into learning. As one wise mentor put it, "If your students aren't learning, you're not teaching." Furthermore, research shows that the time professors invest in improving their teaching often does not translate into greater student learning (Boice, 1991). In fact, as suggested by the comparison between the teaching and learning paradigms in Table 1, efforts focused on what we as teachers do in the classroom can, as likely as not, inhibit student learning.

This sobering observation reminds me of a conversation I had with my college golf instructor. One day at the driving range, I was demonstrating my swing while remarking, "Practice makes perfect." His disarming response was, "Only if you begin with a good swing. My advice to you is to either stop practicing or change your swing." In teaching, as in golf, repeating poor teaching mechanics can actually move us away from, not closer to, our performance objective of effective student learning.

So what changes in my swing as a teacher am I trying to make that I wish someone had corrected earlier in my career? Let me set the stage for my extended response with the following story: Before I came to BYU, a participant in a junior faculty workshop asked my advice. He had recently accepted

TABLE 1
Recent Paradigm Shift in Higher Education

	Teaching Focus	*Learning Focus*
Orienting questions	What do I want to teach?	What do students need to learn?
	How can I cover the designated course material?	How can we accomplish specific learning objectives?
Teacher's role	Provide/deliver instruction	Produce learning
	Transfer knowledge to students	Elicit student discovery and construction of knowledge
	Classify and sort students	Develop each student's competencies and talents
Success criteria	Teacher's performance	Students' performance
	Inputs, resources	Learning, student-success outcomes
Assumption about teachers	Any expert can teach	Teaching is complex and requires considerable training

SOURCE: Adapted from Barr and Tagg (1995, pp. 6-7).

a job at a top-tier private business school whose MBAs had a reputation for running off all but the very best teachers, and this young assistant professor had not yet taught an MBA course. My recommendation at the time was to find the highest-rated MBA teacher and attend every class for a semester, taking copious notes. Today, I'd offer a different suggestion: Find the MBA course that consistently receives the highest marks for student learning and carefully examine how the course is designed. It's not that we can't learn anything of value about student learning by observing great teachers; it's that emphasizing classroom observation perpetuates the myth that the key to learning is a talented instructor.

For example, I remember spending hours scripting how I was going to lead class discussions. The only educational model I had been exposed to as a student presumed that learning entailed listening to the learned—the proverbial sage-on-the-stage model. Hence, as I crafted provocative discussion questions, I did so with the expectation that my answers needed to be significantly more profound than those offered by the students—otherwise, I reasoned, I wasn't adding value as a teacher. In contrast, I have come to understand that the most important things I can do to influence student learning involve carefully planning what my *students—not* their teacher—will do before, during, and after each class. In sum, I have learned that the most effective teachers focus their attention on course design.

Here is a sampler of the evidence supporting this proposition: First, at the conclusion of an extensive study of student learning, known as the Harvard

Assessment Project, encompassing 1,600 student interviews and 65 faculty interviews at 25 colleges and universities, Richard Light (2001), the study director, offered the following summary comment: "The best part of these examples [of exceptional teaching] is that they rarely depend on inborn or immutable personality traits of any given faculty member. Rather, students identify certain planned efforts these special professors made" (p. 105).

Second, regarding these "planned efforts," listen to what the immediate past president of the U.S.-based professional association for faculty development professionals, Dee Fink (2005), had to say:

> When we teach we engage in two closely related, but distinct activities: We design the course and we engage in teacher-student interactions. In order to teach well, one must be competent in both course design and teacher-student interactions. However, of these two activities, our ability to design courses well is usually the most limiting factor. Most of us have had little or no training in how to design courses. In addition, during the last two decades, research on college teaching and learning has generated new ideas about course design that have, in essence, "raised the bar" in terms of what's possible.

Third, in the mid-1980s, a task force assembled from the leading authorities on the predictors of student learning produced a report titled "Seven Principles for Good Practice in Undergraduate Education" (Chickering & Gamson, 1987, 1991). A list of these principles is reproduced as Table 2. When scanning this list, first note what is *not* included, namely, any evidence of individual-differences explanations of effective teaching. None of these predictors of student learning are dependent on a certain personality profile or teaching style. One does not have to be perky or witty to provide prompt feedback or to allow students opportunities to learn from their mistakes. Generally speaking, these predictors of student learning reflect choices made during the course design process. For example, active learning, student cooperation, diverse learning approaches, time on task, and high expectations are all tied to course activities and assignments. Even the amount of student–faculty contact and the promptness of our feedback on assignments often reflect the number of professional commitments we accepted or declined prior to the beginning of the semester. The feeling one gets from this characterization of significant learning experiences is of a self-confident teacher who is willing to challenge students to do their best in exchange for his or her commitment to do the same.

I can relate to Dee Fink's (2005) observation that professors don't, as a general rule, receive training in course design. To make matters worse, the only time I can remember anyone in my department expressing an interest in my course syllabus was when I missed a submission deadline. The notion that the keys to effective student learning were to be found in a course syllabus was never a topic of conversation. Putting together my course syllabus

TABLE 2
Seven Principles for Good Practice in Undergraduate Education

Effective learning . . .
1. Encourages teacher–student contact
2. Encourages cooperation among students
3. Encourages active learning
4. Gives prompt feedback
5. Emphasizes time on task
6. Communicates high expectations
7. Respects diverse talents and ways of learning

SOURCE: Summary of Chickering and Gamson (1987).

has largely been a perfunctory exercise. It was like a time-and-space jigsaw puzzle, in which I had to fit the table of contents of the selected textbook, supplemental readings, two exams, six group presentations, and my favorite set of exercises, movie clips, and so forth, into 28 class periods. When I was satisfied I had a nice mix of individual and group assignments, lecture and small group discussions, written reports, and tests and that I was allocating the appropriate amount of time to the topics I planned to cover in this course, I added a paragraph or two about the relevance of the course material for current and future managers and headed off to the copy center.

Learning-Centered Course Design

What I've learned was missing from this haphazard design process was careful consideration of what students needed to learn and how I could best facilitate the learning process (Diamond, 1998). Figure 1 shows a framework we use at BYU to teach workshops on learning-centered course design. It is adapted from Fink's book, *Creating Significant Learning Experiences* (2003). In our workshops, we discuss the three course design elements in this figure twice. The first time through the model, we focus on the characteristics of course objectives, activities, and assessments that have been shown to foster learning. We then discuss the importance of aligning our objectives, activities, and assessments to produce a coherent, holistic learning experience. In what follows, I'll highlight some of the more important things I've learned from contemporary literature on course design.

BEGIN WITH EXPLICIT, HIGH-LEVEL LEARNING OBJECTIVES

Looking back, I was not a great fan of "behavioral objectives" when I first heard about them in the 1980s. I was put off by the endless debates over what is a goal versus an objective and, reflecting my "teaching focus," I saw no
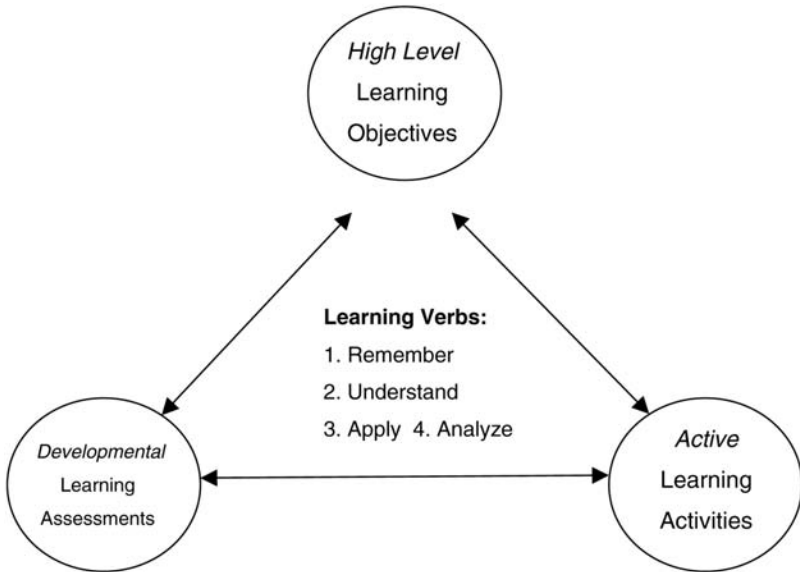
Figure 1:   Effective Selection and Alignment of Course Design Components
SOURCE: Adapted from Fink (2003, p. 62).

point in announcing on the first day of class that the purpose of the course was for students to learn what I planned to teach. I now understand that the careful specification of learning objectives is the most important step in the course design process because it informs all other design choices. Specifically, if they are used as intended, learning objectives constitute the teacher's distinctive imprint or signature on a course, reflected in carefully selected topics, assignments, readings, activities, and assessments.

Authors writing on this subject speak of "learning goals," "learning objectives," or "learning outcomes." The intended message is that teachers should specify what they expect their students to learn in a course or, more specifically, how they expect their students will be changed by this learning experience and what they should be able to *do* upon completion. Learning-expectation statements typically follow the convention of specifying an object (students), a subject (content matter), and an action verb (type of learning). For example, "Students will be able to recognize the three different types of interpersonal conflict and apply the type-appropriate conflict resolution practices." The contemporary scholarship on this subject primarily focuses on the action verb component and emphasizes the value of "higher levels" of learning. In Table 3, these are the ones broadly classified under the "Application" heading. Readers familiar with Bloom's taxonomy

of learning objectives will recognize this table as a revised version of his model (Anderson & Krathwohl, 2001).

To help you identify suitable learning objectives for a particular course, ask yourself questions like these: What are the three or four most important things I hope students will master during this course? What do students in this course need to learn to prepare them for subsequent courses? What would I like my students to be doing consistently 5 years from now? How can I engender a love of this subject matter that will foster my students' commitment to lifelong learning? Assuming that students will master the content of this course, how might they use this information to accomplish something important in an organizational setting?

Regarding higher level learning objectives, a common concern raised by teachers, especially those teaching particularly difficult subjects, is that students can't apply something they don't understand. Although this is true, it is also true that students achieve a deeper level of understanding when they are required to apply what they are learning. Thus, comprehension should be viewed as a means to the end of deeper student learning, rather than as an end in itself. Viewed in this way, comprehension is something to be achieved as quickly and efficiently as possible preparing students for higher (deeper) learning opportunities. Thus, as noted in Table 3, learning objectives should focus on what students will be able to apply, analyze, evaluate, or create, with the understanding that remembering and understanding the relevant course content is a critical prerequisite.

Realistically, the material most management professors teach is not particularly difficult to understand. In fact, I often begin my introductory courses citing Will Rogers's folksy observation, "Common sense ain't necessarily common practice." I tell students I'm willing to grant them that everything they'll learn in this course can be classified as common sense. But then I present research showing wide variance in the performance of practicing managers on the subjects covered in the course. (For more information, see Whetten & Cameron, in press, "Introduction.") Students are thus primed for a course noted for its heavy use of practice exercises and application assignments.

Anecdotal support for the use of higher level learning objectives comes from the Harvard Assessment Project: "Faculty members who had an especially big impact are those who helped students make connections between a serious curriculum, on the one hand, and the students' personal lives, values, and experiences on the other" (Light, 2001, p. 110). "As they begin each new course, what do students hope to get out of it? Details vary, but the most common hope students express is that each class, by its end, will help them to become a slightly different person in some way" (Light, 2001, p. 47).

In summary, students learn best when they have clear learning goals and when comprehension is viewed as a means to the end of personally relevant

TABLE 3
A Taxonomy of Learning Objectives (Verbs)

| Level 1: Remember | Comprehension | | Application | | |
	Level 2: Understand	Level 3: Apply	Level 4: Analyze	Level 5: Evaluate	Level 6: Create
Recognize Recall	Interpret Classify Summarize Compare Explain	Execute Implement	Differentiate Organize Attribute	Checking Critiquing	Generating Planning Producing
Retrieve relevant knowledge from long-term memory	Construct meaning from instructional messages, including oral, written, and graphic	Carry out or use a procedure in a given situation	Break material into parts and relate to one another and to larger structure/purpose	Make judgments based on criteria and standards	Put elements together to form a coherent, functional whole; reorganize into new patterns

SOURCE: Adapted from Anderson and Krathwohl (2001, pp. 67-68).

learning applications. Said differently, it is through meaningful application that lasting comprehension takes place.

USE VALID DEVELOPMENTAL ASSESSMENTS OF STUDENT LEARNING

Until recently, I assumed that the biggest obstacle to student learning in my courses was my students' singular focus on grades. After all, I opined, if their interest in the course material is limited to, "Is this going to be on the test?" how could any significant learning occur? Although I still yearn for an introductory course filled with students whose motivation for learning extends beyond their course grade, I now understand that this is not a requirement for them to learn what I consider to be the most beneficial aspects of the course. In fact, the literature on course design has helped me see students' preoccupation with grades as an asset rather than a liability for learning. In brief, as the teacher of one of the highest rated courses at BYU astutely observes, "There is nothing wrong with 'teaching to the test' if the test accurately reflects the course's learning objectives."

Management professors who teach reinforcement theory should not be surprised to learn that the first thing students look for in a course syllabus is the section on course requirements. This is the litmus test students use to determine what we as teachers believe are the most important parts of the course. In the minds of our students, what we test and how we test says more about our educational goals, values, and philosophy than anything else we do or say during the term. Understanding this, I now begin with the end of learning assessments in mind—meaning, I think about how I'm going to assess what students have learned about a subject before introducing it, and I focus the in-class and out-of-class learning activities on preparing students to do well on the assessments.

To help you select effective, course-appropriate learning-assessment tools, consider questions like the following:

- Given the stated learning outcomes for this course, how can I best assess student learning?
- How can I effectively assess higher level learning outcomes?
- How can I assess learning in ways that enhance and extend, rather than culminate, students' involvement with the subject matter?
- If, during an upcoming reaccreditation process, I were asked to provide evidence of learning for this course, what would be the best evidence I could provide?

In reporting the results of the Harvard Assessment Project, Richard Light (2001) highlighted several surprising findings. One of these had to do with assessment:

I expected students to prefer courses in which they work at their own pace, courses with relatively few quizzes, exams, and papers until the end of the

term. Wrong again. A large majority of students say they learn significantly more in courses that are highly structured, with relatively many quizzes and short assignments. Crucial to this preference is getting quick feedback from professors—ideally with an opportunity to revise and make changes before receiving a final grade. In contrast, students are frustrated and disappointed with classes that require only a final paper. How can we ever improve our work, they ask, when the only feedback comes after a course is over, and when no revision is invited? (p. 8)

Although the notion that learning assessments should strive to stimulate further learning seems self-evident, research and experience show that it is the hardest element of learning-centered course design to implement effectively and consistently (Walvoord & Anderson, 1998; Wiggins, 1998). Looking back, I now recognize that I've been as preoccupied with grading as my students were with grades. Specifically, for too many years, my overriding concerns as I laid out my course requirements were to produce a certain grade distribution at the end of the semester, to minimize students' complaints about their grades, and to limit the amount of time I spent grading assignments and tests.

Inspired by a different view of learning assessment by the writings of scholars such as Weimer (2002) and Angelo and Cross (1993), I've experimented with having students take quizzes alone and then in test groups (Michaelson, Fink, & Watson, 1994); allowing students to resubmit graded papers; having a panel of practicing managers listen to and give feedback on the top three student projects; using cumulative tests, as well as problem-solving tests; and, for part-time MBA students, emphasizing on-the-job application assignments. I've also come to understand that not all assessments of learning need to be graded. It is both appropriate and useful for students to gauge their learning progress through formative self-assessments, feedback from peers, performance on practice tests, and so forth. I also ask students to rate themselves on course objectives that are difficult to grade, such as things pertaining to character development, including moral judgment and integrity.

Speaking of grading, I once heard a colleague say that he loved research and teaching so much he would do both for free. Therefore, he figured that his entire salary compensated him for attending faculty meetings and grading exams. With regard to grading written exams and term papers, educational scholarship has made great strides in making this a less onerous part of teaching. (I haven't found anything yet on how to make faculty meetings more interesting, but I'm still looking!) We all know that written assignments place the grader in double jeopardy: They take forever to grade, and students are more likely to challenge their grades. Fortunately, authorities on this subject have identified ways to reduce both grading time and student complaints (Davis, 1993; McBeath, 1992; Walvoord & Anderson, 1998). Here are two ideas that I have found particularly useful:

- Use a grading rubric. If there are 15 points available for a particular short essay question, they might be broken down into three sets of 5 points, each associated with a specific learning-objective-related evaluation standard (e.g., effectively applies course material in problem analysis and recommendations). The value of the rubric is enhanced as a learning tool if it is distributed and discussed before the test. Even better, it can be used to guide formative learning activities leading up to the exam.
- Give selective, developmental feedback. Not every student will benefit from the same comment, and no one benefits from general comments like "good job" or "dig deeper." Experienced graders are able to identify the most common mistakes that students make on a particular assignment and formulate one or two helpful suggestions for each. Working with a repertoire of these comments accumulated over time, they are able to efficiently give students useful, detailed, developmental feedback.

Regarding the assessment workhorse—multiple choice tests—I've learned that following a few basic rules significantly increases the quality of my test questions (Davis, 1993; Haladynn & Downing, 1989; McBeath, 1992). I've also learned how to use this test format to assess higher level learning through the use of scenario options in conjunction with alternative intervention strategies or problem statements linked to alternative solutions (McBeath, 1992; Walvoord & Anderson, 1998).

In summary, possibly the greatest impact we have as teachers on student learning involves our choice of assessments. What we assess signals what we believe is most important for students to learn and how we assess sets the high-water mark for student learning. It follows that the short-sighted decision to focus primarily on the assessment of student comprehension constitutes a significant opportunity cost from the perspective of student learning.

SELECT COURSE ACTIVITIES THAT FOSTER ACTIVE, ENGAGED LEARNING

It is important to point out that the order in which I am discussing the three components of course design reflects what is referred to as "backwards design" (Wiggins, 1998), signifying that decisions about how to assess student learning should precede decisions about how to help students learn. Thinking of course readings, activities, and projects as opportunities for students to prepare for tests and graded assignments helps us stay focused on our learning goals as we sift through stacks of possibilities for filling course time. Stated differently, having asked the questions, "What is our intended destination?" and "How will we know if we arrive?" one is now ready to address the all-important question of "How are we going to get there?"

Regarding the design of effective learning activities, educational scholars have been telling us for decades that *passive learning* is an oxymoron. The more our students are *uncovering* the topics in our course, rather than listening to us *cover* them, the more likely they are to master the course

material and own what they have learned. As a rule of thumb, if most of what students are doing during a class period is listening, they aren't engaged in active learning. And if most of our preparation time before a class period is focused on what we as teachers are going to be doing for 50 minutes, then active learning is not our top priority.

Although I've always valued having students discover knowledge over my revealing it to them, I still find it challenging to design effective learning activities that go beyond introducing a subject and/or motivating students to learn the subject to actually engaging students in the learning process. I've come to recognize that student involvement is not the same as student learning: Learning is enhanced by involvement, but not all involvement produces learning. As I've tried to dispassionately evaluate the learning potential of my favorite learning activities, I have found that in many cases what I've changed is not the activity itself but how it is used. For example, instead of asking a general question (such as, "What did you learn from this exercise/role-play/case/video clip?"), I introduce the activity by tying it to a specific learning objective and assigned reading and then focus the postactivity discussion on reinforcing these critical connecting links. For example, in a module on motivation, I might ask, "What did you learn from this activity about how to effectively diagnose the cause(s) of poor performance, as introduced in the reading?"

In my ongoing search for better learning activities, I have discovered several excellent resources in the teaching and learning literature, including Davis (1993), McKeachie et al. (1999), Bonwell and Eison (1991), Wilkerson and Gijselaers (1996), and Sutherland and Bonwell (1996). Here are some particularly useful suggestions I have distilled from these sources:

- Use problem-based learning to entrain the metaskills of effective diagnosis, principled analysis, and systematic comparisons.
- Encourage direct application of the course material in on-the-job settings, and report the results to the class.
- Require groups of students to diagnose the skill-development needs of a practicing manager and use this information to design and teach a course-based workshop to the manager.
- Assign time for reflection, including minute papers at the end of a class period and/or the ongoing use of learning portfolios or journals.
- Facilitate student interaction with the teacher and with classmates through provocative class discussions, team projects, small group work, presentations, and peer feedback.

During the years I supervised the required undergraduate management course at the University of Illinois, the most important initiative we took to enhance student learning was requiring students to read the assigned material prior to class. To reinforce this stated expectation, we gave random pop quizzes at the beginning of class. But more important, we began using class

time in such a way that students who hadn't read the material felt left out of a highly interactive, engaging learning process. For example, during a role-play exercise or a case discussion, students were given bonus points for linking their comments, observations, and suggestions to specific points in the reading assignment. More than anything else, how we used our class time sent a clear signal that informed application was our primary learning objective.

Returning to the results of the Harvard Assessment Study (Light, 2001), the contribution of carefully considered course assignments to student learning came through in the interviews Light had with college students. Here are three particularly illuminating observations:

> We asked some graduating seniors this question: "Which courses had the biggest impact on your learning, why was this impact so big, and exactly how were these courses structured?" The results were eye-opening. We learned that *how* students study and do their homework assignments outside of class is a far stronger predictor of engagement and learning than particular details of their instructor's teaching style. The design of homework really matters. Specifically, those students who study outside of class in small groups of four to six, even just once a week, benefit enormously. (pp. 51-52)

> Students identify the courses that had the most profound impact on them as courses in which they were required to write papers, not just for the professor, as usual, but for their fellow students as well. (p. 64)

> The relationship between the amount of writing for a course and students' level of engagement—whether engagement is measured by time spent on the course, or the intellectual challenge it presents, or students' interest in it—is stronger than any other course characteristic. (p. 55)

As illustrated by these research results, the best source of information about the effectiveness of learning activities in our courses is student feedback. Consistent with the learning–predicting principle of Time on Task, introduced in Table 2, you might ask your students at the end of a semester to report how much time they spent on specific assignments, on preparing for each test, and so forth. It is particularly important to ask them how much they believe various activities and assignments contributed to their mastery of the course learning goals. Along these lines, a particularly well-designed course at BYU has a section in the syllabus reporting how previous students who have demonstrated the greatest mastery of the course objectives used their time before, during, and after each class.

In summary, given a choice between two learning outcomes—(a) My students will be able to pass the final exam in my course and (b) My students will actually use the material in this course 5 years from now in their work—we'd all prefer option (b). However, in line with Steve Kerr's (1975) timeless observation regarding the folly of "rewarding A while hoping for B," for too long I acted as if (a) would do just fine. I now understand

that the more my students are actively engaged in the learning process, the more likely they are to achieve my hopes and aspirations for them as *former* students.

SYSTEMATICALLY AND CONTINUOUSLY ALIGN
COURSE DESIGN ELEMENTS

The importance of aligning course learning objectives, activities, and assessments has been noted several times already. However, because it is an integral part of learning-centered course design, it warrants further attention. Soon after joining the Faculty Center, I learned of a recent survey of BYU's graduating seniors asking them to evaluate their educational experience. The result that caught my attention was this: The number one complaint from our graduates was that in too many cases what they were tested on did not reflect the course description, including the stated objectives or what the teacher had led them to believe was important to learn. I remember thinking, "I'm contributing to this problem."

Sobered by this realization, I turned to my Faculty Center colleagues for help. Regarding the frequency and consequences of the misalignment of course objectives, activities, and assessments, here's what I learned:

> Lack of excellence in American schools is not caused by ineffective teaching, but mostly by misaligning what teachers teach, what they intend to teach, and what they assess as having been taught. . . . Presently, we find no other construct that consistently generates such large effects [on student learning], which is probably why the idea of instructional alignment is so well-entrenched in the conventional wisdom of instructional designers, even if not in the programs currently found in most classrooms. (Cohen, 1987, p. 19)

In terms of solutions, the single most effective and practical tool I've found for aligning course elements is the consistent use of action verbs, introduced earlier in conjunction with Table 3. Suppose one of your course objectives is to help students *apply* certain principles of effective interpersonal relations to their daily activities. To achieve alignment between this stated objective and the course activities and assessments, use the word *apply* to introduce test questions and assignments as well as in grading rubrics for written or oral reports. The point, of course, is that by consistently using the same verb (or verbs from the same category in Table 3) in our learning objectives, activities, and assessments, students can see how related parts of a course reinforce each other.

I've also found it helpful to visualize learning activities as the spokes of a wheel, connecting the learning-objective hub with the learning-assessment rim. Used in this manner, learning activities help students understand what we mean by a particular learning objective. In addition, when course activities

TABLE 4
Course Alignment Diagnostic Test

	Course Objectives		
	Understand	*Apply*	*Create*
Course assignments			
Attendance	X		
Group project		X	X
Term paper	X	X	X
Exams	X	X	
Journal		X	X
Test questions			
Question 1	X		
Question 2	X	X	
Question 3	X		
Question 4	X	X	
Question 5	X		X

prepare students for graded assessments, students appreciate not being surprised by the content or format of a test, and they are motivated to take the pretest learning experiences seriously. For example, if the best way to assess a course objective involving the action verb *evaluate* is through case analysis, then the learning activities leading up to a case-based assessment should demonstrate effective ways to analyze a case and provide opportunities for students to receive feedback on their ability to incorporate key course concepts in their analysis.

Here's another simple but effective way to check alignment. When BYU Faculty Center staff consult with professors on course design, they often construct an *alignment matrix*, like those shown in Table 4. Here, I'm illustrating how the fit between course objectives and course activities, as well as between course objectives and individual test items, can be assessed. Obviously, a more complete assessment would include both subjects and verbs (e.g., *integrate* motivation theories, *critique* leadership theories). My intent here is to illustrate how a stated commitment to a particular level of learning should be reflected in subsequent course design choices. With regard to the cells in the matrix, the number of course elements that should support a given learning objective depends on how much emphasis you think each warrants. The purpose of this alignment check is to ensure that what the students are experiencing during a course reflects your carefully considered intentions. In a well-designed (aligned) course, students at the end of the semester should be able to fill in a blank alignment matrix with a high degree of reliability.

As a way of tying together what I've learned about course design, let me direct your attention to Table 5. Kim Cameron and I recently sent to our

TABLE 5
Developing Management Skills Learning Model

Skill assessment	Diagnostic surveys and experience logs (What do I need to improve?)
Skill learning	Subject matter: Translation of research into behavioral guidelines (What are the best bets for handling difficult management responsibilities?)
Skill analysis	Cases (According to the behavioral guidelines, what happened and why?)
Skill practice	Role-plays and exercises (How am I doing in my efforts to improve?)
Skill application	Transfer of learning into everyday practice (How am I going to apply what I've learned?)

SOURCE: Adapted from Whetten and Cameron (2007).

publisher, Prentice Hall, the seventh edition of our textbook, *Developing Management Skills* (Whetten & Cameron, 2007). We are both delightfully surprised that what began as our personal quest to develop an application-focused management course is now used in a wide range of undergraduate and MBA courses and is being taught in several countries and languages. I believe the success of this educational venture is largely because, quite by accident, we utilized key learning-centered course design principles. (For an expanded discussion, see Whetten & Cameron, in press, "Introduction"; see also Whetten & Campbell Clark, 1996.)

As summarized in this table, the overall objective of the *Developing Management Skills* book and course is to translate proven knowledge into consistent sound practice through the medium of behavioral skill development (Whetten & Cameron, 2007). In the initial Skill Assessment/step, students engage in a systematic needs assessment, linked to their current understanding and expertise. Then, in skill learning, students are exposed to pertinent scholarship on the subject, summarized as a set of behavioral guidelines. These guidelines are then used to inform students' critiques of case studies—what we call Skill Analysis. The behavioral guidelines also serve as a standard for Skill Practice activities, including in-class role-plays and other exercises. Finally, to complete the learning cycle, students are encouraged to formulate specific Skill Application plans, identifying how they intend to embed what they have learned into everyday practice. These plans might focus on their work within student project teams in this or other classes; their relationships with roommates, close friends, or possibly a landlord; their responsibilities as a fraternity or sorority officer; or some aspect of their part-time or full-time work activities. We ask each student to report on the outcome of at least one of their Skill Application plans, either by giving a brief in-class report or by submitting it to the course Web site. This assignment enriches the learning experience for other students and reinforces the course's emphasis on higher order learning outcomes.

We have also attempted to incorporate effective learning principles and practices into our teaching support material. For example, in the "Instructor's

Manual," we present a learning matrix for each chapter, showing how specific learning objectives are linked to specific elements in each of the five sections of the chapter (Whetten & Cameron, in press). In addition, we have worked with education specialists to develop assessments of higher level student learning. Some of the assessment options we provide include role-play tests, individual tests followed by group tests, integrated case-based tests, and scenario-based multiple choice questions.

Frequently Asked Questions

Before wrapping up, let me address three frequently asked questions about learning-centered course design.

First, given that this looks like a lot of extra time and effort, is it worth it? From my experience, a well-designed course is like a well-written exam: It takes longer to prepare, but the additional time is more than made up later via faster grading and fewer student complaints. When my father was teaching me some basic carpentry skills, I remember his encouragement to "measure twice and cut once." Over the years of working on various home-improvement projects, the wisdom of avoiding wasted time and materials by spending more time than I'd prefer planning a project and repeatedly measuring my cuts has been demonstrated many times over. My experience with course design is similar. What I like about contemporary thinking on this subject is that it focuses on the design components that are likely to have the greatest impact on student learning and, therefore, help professors avoid wasting their time chasing educational fads or discovering on their own, through trial and error, effective educational principles and practices.

Second, doesn't this rule out individuality and spontaneity? That depends on one's meaning. By definition, the value of a thoughtful plan is that it intentionally rules out options that have been shown not to produce the desired results. However, course plans should not be so rigid that they preclude the exploration of interesting emergent topics and questions or responding to the needs of an unexpected mix of students. The benefit of a clear, coherent course plan is that it helps students and teacher alike recognize when adjustments are needed and what these adjustments should entail. Stated differently, the purpose of a course plan is to provide clear direction, not to eliminate thoughtful adaptation. As Igor Stravinsky said with regard to his unique style as a composer, "It is within the greatest limitations that I found the greatest freedom."

Third, how can this approach to teaching be used in multisection introductory courses involving several teachers? Anyone who has taught in this setting has struggled with the question of how much of the course should be common to all sections. On one hand, students have the right to expect that all sections of a course will cover the advertised core content. On the

other hand, no one is well served by courses that are designed by one person and taught by another, so to speak. The course design process outlined in this article provides a systematic, principled, coherent approach for multisection course design. The chief benefit of a common focus on student learning is that it provides a much-needed standard for deciding whose favorite activity, assignment, or assessment to include.

Conclusion

These are the highlights of what I've learned from my fortuitous, decade-long association with teaching and learning experts. I went into this experience expecting to pick up some useful teaching tips for polishing my performance as a teacher; I will leave this experience with a very different view of teaching—focused on student learning outcomes and framed as teacher-as-course-designer.

Now comes the hard part: reducing the gap between what I now consider to be common sense and my years of ill-informed common practice. If I had understood the impact that course design has on student learning 30 years ago, I wouldn't have so many bad habits to overcome!

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