

## INTRODUCTION: DEFINING THE BEST



When Ralph Lynn graduated from college in 1932, decked out in a variety of academic honors, he began doing other people's laundry to survive the depression. Ten years later, he acquired a correspondence-course teaching certificate and taught high school history classes for six months before entering the army in late 1942. He spent most of World War II in London looking at other people's dirty laundry—censoring soldiers' letters to keep them from revealing too much about troop movements to the folks back home—and reading history. When he came home in 1945, he asked his alma mater, Baylor University, to let him teach. Later, he went north to the University of Wisconsin to acquire a Ph.D. in European history. In 1953 he returned to Texas, where he taught for the next twenty-one years.

When Lynn retired in 1974, more than one hundred of his former students who now held academic posts paid him tribute. One of them, Robert Fulghum, who later wrote a much celebrated book claiming that he learned everything he needed to know about life in kindergarten, confessed that Ralph Lynn was the “best teacher in the world.” Another student, Ann Richards, who became the governor of Texas in 1991, wrote that Lynn's classes “offered us a window to the world, and for a young girl from Waco, his classes were great adventures.” They were, she explained some years after leaving the governor's mansion, like “magical tours into the great minds and movements of history.” Hal Wingo, who took classes from Lynn long before he became the editor of *People* magazine, concluded that Lynn offered the best argument he knew for human cloning. “Nothing would give me more hope for the future,” the



editor explained, "than to think that Ralph Lynn, in all his wisdom and wit, will be around educating new generations from here to eternity."<sup>1</sup>

What did Lynn do to have such a sustained and substantial influence on the intellectual and moral development of his students? What do any of the best college and university teachers do to help and encourage students to achieve remarkable learning results? What does Jeanette Norden, a professor of cell biology who teaches the brain to medical students at Vanderbilt University, do that enables her students to learn so deeply? How does Ann Woodworth, a professor of theater at Northwestern University, lift her acting students to heights of thespian brilliance? Given that human cloning is not an option, is it possible to do some intellectual cloning, to capture the thinking of people like Don Saari from the University of California at Irvine, whose calculus students have sometimes claimed 90 percent of the A's on departmental examinations? Can we capture the magic of Paul Travis and Suhail Hanna, who taught history and literature in a small freshwater college in Oklahoma in the 1970s and later at other institutions from Pennsylvania to Kansas, inspiring their students to new intellectual levels?

What makes some teachers successful with students of diverse backgrounds? Consider the case of Paul Baker, a teacher who spent nearly fifty years empowering his students to find their own creativity. In the 1940s Baker developed for an undergraduate theater program a course he called "Integration of Abilities," a mind-charging exploration of the creative process that attracted as many future engineers, scientists, and historians as it did actors and other artists. By the late 1950s, he used the course to build the graduate program in theater at the Dallas Theater Center and later at Trinity University, revolutionizing theater productions around the world. By the 1970s he was employing the integrations method as head of the new performing arts magnet high school in Dallas, changing the lives of



many students whom others had dismissed as failures. In the early 1990s, now retired on a small ranch in East Texas, he took the same approach in creating a program for the local elementary school that pushed standardized test scores in that rural community to historic highs. How did he do it?

For more than fifteen years I have raised such questions in looking at the practices and thinking of the best teachers, those people who have remarkable success in helping their students achieve exceptional learning results. Much of the inspiration for the inquiry came from the extraordinarily successful teachers I have encountered in my own life. It has occurred to me that teaching is one of those human endeavors that seldom benefits from its past. Great teachers emerge, they touch the lives of their students, and perhaps only through some of those students do they have any influence on the broad art of teaching. For the most part, their insights die with them, and subsequent generations must discover anew the wisdom that drove their practices. At best, some small fragment of their talent endures, broken pieces on which later generations perch without realizing the full measure of the ancient wealth beneath them.

A decade ago, I confronted the tragedy of losing some of that wealth in the death of a talented teacher whom I never formally met. When I was a graduate student at the University of Texas in the early 1970s, I heard about a young professor, fresh from his own studies at the University of Chicago, who had students sitting in the aisles for the chance to take his class. Nearly every day, I saw a small army of people follow Tom Philpott from class to the departmental lounge, where they continued the conversations his teaching had started. In the late 1980s my son and daughter-in-law took Philpott's class in U.S. urban history, and I watched as it provoked new questions and perspectives. I listened with renewed interest to their stories of students—even many who were not registered for the



class—who crowded into the legendary teacher's classroom for a charge to their intellectual batteries. I wanted to interview Philpott about his teaching and possibly videotape some classes, but that chance never came. A short while later he took his own life. His colleagues eulogized him, his students remembered his classes, and perhaps a few of them who became teachers carried some pieces of his talent into their own careers. But for the most part his library of teaching talents and practices burned to the ground when he died. His scholarship on the development of neighborhoods in Chicago remains, but he never captured his own scholarship of teaching, and no one else did it for him.

In this book I have tried to capture the collective scholarship of some of the best teachers in the United States, to record not just what they do but also how they think, and most of all, to begin to conceptualize their practices. The study initially included only a handful of teachers at two universities, but eventually it encompassed professors at two dozen institutions—from open admissions colleges to highly selective research universities. Some taught primarily students with the best academic credentials; others worked with students who had substandard school records. Altogether, my colleagues and I looked at the thinking and practices of between sixty and seventy teachers. We studied nearly three dozen of them extensively, the others, less exhaustively. A few of the latter subjects were speakers in one of the annual series I organized at Vanderbilt and Northwestern that featured professors from other institutions who had achieved impressive teaching results. The subjects came from both medical school faculties and undergraduate departments in a variety of disciplines, including the natural and social sciences, the humanities, and the performing arts. A few came from graduate programs in management, and two came from law schools. We wanted to know what outstanding professors do and think that might explain their accomplishments. Most important, we wanted to know if the lessons they taught us could inform other people's



teaching. I have directed this book to people who teach, but its conclusions should also be of interest to students and their parents.

### DEFINING EXCELLENCE

To begin this study we had to define what we meant by outstanding teachers. That turned out to be a fairly simple matter. All the professors we chose to put under our pedagogical microscope had achieved remarkable success in helping their students learn in ways that made a sustained, substantial, and positive influence on how those students think, act, and feel. The actual classroom performance of the teachers did not matter to us; so long as the teachers did not do their students (or anyone else) any harm in the process, we cared little about how they achieved their results. Dazzling lecture styles, lively classroom discussions, problem-based exercises, and popular field research or projects might or might not contribute to the *telos* of good teaching. Their presence or absence, however, never dictated which people we investigated. We chose teachers because they produced important educational results.

What counted as evidence that a professor profoundly helped and encouraged students to learn deeply and remarkably? That question proved to be more complex. No one type of evidence would do in every case. We simply looked for proof of an educator's excellence, and if we found it, we used that person in the study. In some cases the evidence came in clearly labeled packages; in others, we had to collect it from unmarked jars and piece it together like anthropologists in search of a lost civilization. The types of evidence available depended on both the individual and the discipline.

Jeanette Norden from Vanderbilt University's Medical School and Ann Woodworth from the Theatre Department at Northwestern illustrate two different patterns of evidence. Norden's medical students face a standardized test of their learning in the form of the National Board of Medical Examiners and the United States



Medical Licensing Examination. Their group performance on sections of the exam that cover Norden's field provides a strong indication of her students' learning. So does the students' testimony about how well her class prepared them for the rotation in neurology, the National Boards, and careers in medicine. So do the examinations she uses in her classes, carefully and rigorously constructed instruments that take students through specific cases that require extensive knowledge, advanced understanding, and sophisticated clinical reasoning skills. And so do her colleagues' statements about how well her students are prepared for subsequent work. Norden has won every award for teaching granted by the medical school and selected by the students—some of the awards more times than the university will now allow. When Vanderbilt's chancellor established endowed chairs of teaching excellence in 1993, Norden was the first recipient of that honor. In late 2000, the American Association of Medical Colleges presented her with its Robert Glaser award for teaching excellence.

Ann Woodworth also came with a plethora of teaching awards—including appointment to an endowed chair of teaching excellence at Northwestern. But those recognitions, while important and substantial, gave us no direct evidence about student learning. Woodworth's field certainly emphasizes dramatic accomplishments. What convinced us that her teaching was worthy of careful study? First, we had a large body of testimony from her students, not just that she was entertaining or witty, but that she helped them achieve substantial results. We were impressed with the consistency of the testimony, with the kinds of praise the students offered ("you'll learn more from her class than from any other at this school"; "this class changed my life"), and with the perfect marks they gave her in response to questions about stimulating intellectual interest and helping students learn. Second, we had considerable evidence about



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what Woodworth taught, information we gathered from her students, from her account of her courses, and from a term-long observation of one of her classes. Finally, we saw the performances of her students, both in final productions and in classroom work, in which her assistance often transformed a stale rendition into something magical.

Glowing reviews from students and colleagues alone were insufficient, however. We wanted indications from a variety of sources that a particular teacher was worthy of study. Although we did not insist that every instructor present exactly the same kinds of support, we did have two acid tests that all instructors had to meet before we included them in our final results.

First, we insisted on evidence that most of their students were highly satisfied with the teaching and inspired by it to continue to learn. This was no mere popularity contest; we were not interested in people because they were well liked by their students. Rather, we wanted indications from the students that the teacher had "reached them" intellectually and educationally, and had left them wanting more. We rejected the standards of a former dean who used to say, "I don't care if the students liked the class or not as long as they learned the material," which meant "I just want to see how they performed on the final." We too were concerned with how students performed on the final, but we had to weigh the growing body of evidence that students can "perform" on many types of examinations without changing their understanding or the way they subsequently think, act, or feel.<sup>2</sup> We were equally concerned with how they performed after the final. We were convinced that if students emerged from the class hating the experience, they were less likely to continue learning, or even to retain what they had supposedly gained from the class. A teacher might scare students into memorizing material for short-term recall by threatening punishment or imposing excessively burdensome workloads, but those tactics



might also leave students traumatized by the experience and disliking the subject matter. Any teacher who causes students to hate the subject has certainly violated our principle of "do no harm."

We recognize that some professors might be enormously successful in helping a few students learn but far less so with most of them. Colleagues have told us about former professors who stimulated their intellectual development but left most students flat. These people obviously valued those mentors and sometimes even modeled their own careers after them, taking pride in what they saw as the elite cadre of their satisfied students, and perhaps even believing that alienation of the masses set them on a higher plane. Such professors may have great value for the academy, but they did not make our cut. We sought people who can make a silk purse out of what others might regard as a sow's ears, who constantly help their students do far better than anyone else expects.

Our second acid test concerned what students learned. This is tricky because it involved judgments about a variety of disciplines. We sought evidence that colleagues in the field or in closely related fields would regard the learning objectives as worthy and substantial. Yet we remained open to the possibility that some remarkable teachers developed highly valuable learning objectives that ignored the boundaries of the discipline and even, on occasion, offended many disciplinary purists—the medical school professor, for example, who integrated issues of personal and emotional development into a basic science class, helping to redefine the study of medicine. Indeed, most of the highly successful teachers in the study broke traditional definitions of courses, convincing us that success in helping students learn even some core material benefits from the teacher's willingness to recognize that human learning is a complex process. Thus we had to apply a sweeping sense of educational worth that stemmed not from any one discipline but rather from a broad educational tradition that values the liberal arts (including the natural sciences), critical thinking, problem solving,



creativity, curiosity, concern with ethical issues, and both a breadth and depth of specific knowledge and of the various methodologies and standards of evidence used to create that knowledge.

In short, we included in our study only those teachers who showed strong evidence of helping and encouraging their students to learn in ways that would usually win praise and respect from both disciplinary colleagues and the broader academic community. But we also tried to include some educators who were operating on the fringes of current norms, defining learning wealth in important new ways. We also studied a few people who were highly successful with some classes and less so with others. For example, some teachers achieved wonderful results with large or small classes, advanced or beginning courses, but not with both. Such cases allowed us to make some comparisons between what worked and what did not.

We wanted to study teachers who had a sustained influence on their students, but the evidence for that proved difficult to obtain, especially in the early phases of our research. We talked with some students years after they had taken a particular professor and heard their testimonies about the way the class touched their minds and influenced their lives. We did not, however, systematically follow students; nor did we rely on those interviews alone to decide that someone deserved attention. Instead, we looked for something that would tell us more immediately that the impact was lasting. The concept of deep learners, first developed by Swedish theorists in the 1970s, helped us spot indications of sustained influence.<sup>3</sup>

We assumed that deep learning was likely to last, and so we listened closely for evidence of it in the language students used to describe their experiences. Did they speak about "learning the material" or about developing an understanding, making something their own, "getting into it," and "making sense of it all?" We were drawn to classes in which students talked not about how much they had to remember but about how much they came to understand



(and as a result remembered). Some students talked about courses that “transformed their lives,” “changed everything,” and even “messed with their heads.” We looked for signs that students developed multiple perspectives and the ability to think about their own thinking; that they tried to understand ideas for themselves; that they attempted to reason with the concepts and information they encountered, to use the material widely, and to relate it to previous experience and learning. Did they think about assumptions, evidence, and conclusions?

Consider, for example, two sets of comments. One came from students who told us that the class “required a lot of work,” that the professor motivated them to “get it done,” and was thorough and fair, “covering,” as one student put it, “all the stuff that would be on the exam” and “never surprising us with problems we hadn’t seen.” The students dwelled on being successful “in the course” and offered high praise because the instructor helped them achieve that goal. While these comments were all quite favorable, they did not necessarily point to deep learning. In contrast, the second set of students talked about how they could “put a lot of things together now” or “get inside” their own heads. They stressed that they wanted to learn more, sometimes spoke about changing majors to study under a particular professor, and seemed in awe of and fascinated with how much they didn’t know. “I thought it was all cut and dried before I took this course,” one student explained. “It’s pretty exciting stuff.” They talked about issues that the course had raised, how they learned to think differently, how the course had changed their lives, and what they planned to do with what they had learned. They easily discussed arguments they had encountered, questioned assumptions, and distinguished between evidence and conclusions. Students mentioned books they had subsequently read because the course raised their interest, projects they had undertaken, or changes in plans. In commenting about a math class one student explained, “He didn’t just show us how to solve the



problem but helped us think about it so we could do it on our own. I can think through problems better now." In reference to a history class, that reflection became, "I don't just memorize stuff in here. I have to think about arguments and evidence." The second set of comments suggested sustained influences while the first didn't tell us enough.

As our inquiry developed, it generated enormous interest from colleagues, who often suggested that we consider particular people. All potential subjects entered the study on probation while we examined their learning objectives and pressed them for evidence about success in fostering meaningful results. Sometimes we quietly dropped people from consideration, not because we came to believe that they were ineffective teachers, but because we just did not have enough data to know, one way or the other. My objective in this book is not to notify these colleagues who were not included in the study but to learn as much as possible from the most successful teachers. Consequently, though I mention the names of many people we analyzed, I do not provide a complete list.

## CONDUCTING THE STUDY

Once we had identified our subjects, we studied them. Some we observed in the classroom, laboratory, or studio; others, we videotaped. For still others, we did both. We had long conversations with many of the teachers and their students; looked at course materials, including syllabi, examinations, assignment sheets, and even some lecture notes; considered examples of students' work; conducted what we called "small group analyses," in which we interviewed entire classes in small groups; asked some people to analyze and describe their own teaching practices and philosophies in more formal reflections; and in a few cases actually sat in on an entire course. The methods of collection and analysis varied, but they all came from approaches common in history, literary analysis, investigative



journalism, and anthropology. The talks we heard, the interviews we conducted, the class materials and other writings we read, and the notes we took while observing a class formed the texts that we subsequently scrutinized (see the appendix for details on the study).

### STUDENT RATINGS

Before turning to a summary of the major findings of our study, we should consider one more methodological issue: What role can student ratings play in helping identify outstanding teaching? How did they influence our decisions?

In meeting new faculty members, I have discovered that many teachers have a vague knowledge of the famous Dr. Fox experiments, a knowledge just blurry enough to produce skepticism about any attempt to identify and define teaching excellence. In that study, originally published in the 1970s, three researchers hired an actor to deliver a lecture to a group of educators. They instructed him to make his delivery highly expressive and entertaining but to offer little content in a talk riddled with logical confusions and repetitions. The experimenters gave their "professor" a fictional curriculum vitae, complete with a list of publications, and called him Dr. Fox. When they asked listeners to rate the lecture, the numbers appeared quite favorable, and one of the respondents even claimed to have read some of Dr. Fox's work.<sup>4</sup>

Many faculty members familiar with this experiment have concluded that student ratings are useless because lectures filled with junk can "seduce" students if the teacher is entertaining. But on closer examination, the original Dr. Fox study had one major flaw: it asked the wrong questions. Many of the questions simply asked if the actor did what he was instructed to do. For example, he had been told to display expressiveness and enthusiasm, and one of the survey questions then asked, "Did he seem interested in his subject?"<sup>5</sup> No wonder the ratings were so high. Not a single one of the



eight questions asked the audience members if they had learned anything—the element we regarded as so crucial in spotting excellent teaching. Researchers made no effort to test the listeners on the knowledge they had gained from the lectures (although subsequent experiments with Dr. Fox did so), or even to ask them whether they believed they had in fact learned anything.

Far less well known and publicized were the subsequent studies done on what came to be known as the “Dr. Fox effect,” which pointed out these methodological flaws in the original study and drew far more conservative conclusions from the investigations. All told, what we can learn about identifying teaching excellence from the Dr. Fox experiments seems pretty meager. At best, they may help us understand what questions we should and shouldn’t be asking on the student rating forms. Rather than asking if professors were expressive or used a particular technique, we should ask if they helped students learn or stimulated their interest in the subject. Indeed, research has found high positive correlations between student ratings and external measures of student learning when such questions are used.<sup>6</sup> Most important, student ratings can, as one observer put it, “report the extent to which the students have been reached [educationally].”<sup>7</sup> If we want to know if students think that something has helped and encouraged them to learn, what better way to find out than to ask them. As for expressiveness, Herbert Marsh, an Australian researcher, and others found in subsequent Dr. Fox experiments that students usually perform better on examinations after hearing exciting lecturers than they do after dull ones, but that should surprise no one.<sup>8</sup>

Students do not always have sophisticated definitions of what it means to learn in a particular discipline. Thus we could not rely on the numbers alone to tell us whether someone had been helping people learn at the high level expected in this study. That information came only from looking at course materials, including syllabi and methods of evaluation, or from interviewing both instructors



and their students. Student ratings could help supplement these more qualitative inquires, especially the numbers that emerge from questions like the two that appeared on both the Northwestern and the Vanderbilt student rating forms: Rate how much the teaching helped you learn, and rate how well the course stimulated you intellectually.

Yet many people remain highly suspicious of any study of teaching quality that draws even part of its evidence from student ratings. Educators not familiar with the Dr. Fox experiments may have a headline acquaintance with a more recent study. In 1993 Nalini Ambady and Robert Rosenthal showed students short film clips of teachers and asked them to rate those professors using the same instrument others had used after taking classes with the same instructors.<sup>9</sup> The researchers wanted to know how small the exposure could be and still generate ratings that were substantially the same as those that came after an entire semester of viewing the professor. When *Lingua Franca* and other publications reported that high positive correlations began to appear after the experimental group saw only a few seconds of the professor, some academics came to believe that all student ratings arise from superficial observations and amount to little more than the most primitive of popularity tests. These critics failed to consider, however, that the Ambady and Rosenthal study could point to a much different conclusion: students, with long histories of dealing with both highly stimulating and discouraging teachers, may develop an ability to guess quite accurately, even after only a few seconds of exposure, which professors will ultimately advance their education and which will not. In short, the instant judgments may stem from concerns about who can help them learn and grow rather than from a focus on amorphous qualities of personality and friendship. Ambady and Rosenthal made this point in their article: "Not only do we possess the remarkable ability to form impressions of others . . . but, perhaps more remarkably, the impressions that we form can be quite accurate!"



For our part, we have relied not on instant impressions but rather on the kind of detailed and sustained study outlined above and discussed more fully in the pages to come. I will return in the last chapter to the process of evaluating teaching, but for now it is worth emphasizing that this study follows the criteria of outcomes. We identify teaching excellence when we see evidence about remarkable feats of student learning and indications that the teaching helped and encouraged those results; we learn something about developing teaching excellence when we try to discover what fostered that educational success. Ratings from students of how much they learned and whether the professor stimulated their interests and intellectual development often told us a good deal about the quality of teaching, but we looked at far more evidence before concluding that it was exceptional.

## MAJOR CONCLUSIONS

Let's begin with the major conclusions of this study, the broad patterns of thinking and practice we found among our subjects. One word of caution, however: anyone who expects a simple list of do's and don'ts may be greatly disappointed. The ideas here require careful and sophisticated thinking, deep professional learning, and often fundamental conceptual shifts. They do not lend themselves to teaching by the numbers.<sup>10</sup>

Our conclusions emerge from six broad questions we asked about the teachers we examined.

### *1. What Do the Best Teachers Know and Understand?*

Without exception, outstanding teachers know their subjects extremely well. They are all active and accomplished scholars, artists, or scientists. Some have long and impressive publication lists, the kind the academy has long valued. Others have more modest records; or in a few cases, virtually none at all. But whether well



published or not, the outstanding teachers follow the important intellectual and scientific or artistic developments within their fields, do research, have important and original thoughts on their subjects, study carefully and extensively what other people are doing in their fields, often read extensively in other fields (sometimes far distant from their own), and take a strong interest in the broader issues of their disciplines: the histories, controversies, and epistemological discussions. In short, they can do intellectually, physically, or emotionally what they expect from their students.

None of that should surprise anyone. This finding simply confirms that people are unlikely to become great teachers unless they know something to teach. The quality of knowing a discipline isn't particularly distinctive, however. If it were, every great scholar would be a great teacher. But that's not the case. More important, the people in our study, unlike so many others, have used their knowledge to develop techniques for grasping fundamental principles and organizing concepts that others can use to begin building their own understanding and abilities. They know how to simplify and clarify complex subjects, to cut to the heart of the matter with provocative insights, and they can think about their own thinking in the discipline, analyzing its nature and evaluating its quality. That capacity to think metacognitively drives much of what we observed in the best teaching.

We also found that our subjects have at least an intuitive understanding of human learning akin to the ideas that have been emerging from research in the learning sciences (see Chapter 2 for details).<sup>11</sup> They often use the same language, concepts, and ways of characterizing learning that we found in the literature. While others, for example, talk about transmitting knowledge and building a storehouse of information in the students' brains, our subjects talk about helping learners grapple with ideas and information to construct their understanding. Even their conception of what it



means to learn in a particular course bears the mark of this distinction. While others might be satisfied if students perform well on the examinations, the best teachers assume that learning has little meaning unless it produces a sustained and substantial influence on the way people think, act, and feel.

## *2. How Do They Prepare to Teach?*

Exceptional teachers treat their lectures, discussion sections, problem-based sessions, and other elements of teaching as serious intellectual endeavors as intellectually demanding and important as their research and scholarship. That attitude is probably most apparent in the answers our subjects gave to a simple question: "What do you ask yourself when you prepare to teach?" In some teachers that inquiry might have prompted uninspired responses that emphasized the mundane: How many students will I have? What will I include in my lectures? How many and what kind of tests will I give? What will I assign to read?

While those questions are important, they reflect a conception of teaching much different from the one embodied in the preparation of the people we studied. Our subjects use a much richer line of inquiry to design a class, lecture, discussion section, clerkship, or any other encounter with students, and they begin with questions about student learning objectives rather than about what the teacher will do. Chapter 3 examines the pattern of questions we heard most frequently and the conceptions of teaching and learning reflected in those inquiries.

## *3. What Do They Expect of Their Students?*

Simply put, the best teachers expect "more." But given that many professors "pile it on" their classes without necessarily producing great learning results, what do the most successful teachers do to stimulate high achievement? The short answer is that they avoid



objectives that are arbitrarily tied to the course and favor those that embody the kind of thinking and acting expected for life. Chapter 4 explores such practices and thinking more fully.

#### *4. What Do They Do When They Teach?*

While methods vary, the best teachers often try to create what we have come to call a “natural critical learning environment.” In that environment, people learn by confronting intriguing, beautiful, or important problems, authentic tasks that will challenge them to grapple with ideas, rethink their assumptions, and examine their mental models of reality. These are challenging yet supportive conditions in which learners feel a sense of control over their education; work collaboratively with others; believe that their work will be considered fairly and honestly; and try, fail, and receive feedback from expert learners in advance of and separate from any summative judgment of their effort. In Chapter 5 I discuss in detail the various methods the best professors use to offer a lecture, conduct a discussion, teach a case, or create other learning opportunities that help build this environment.

#### *5. How Do They Treat Students?*

Highly effective teachers tend to reflect a strong trust in students. They usually believe that students want to learn, and they assume, until proven otherwise, that they can. They often display openness with students and may, from time to time, talk about their own intellectual journey, its ambitions, triumphs, frustrations, and failures, and encourage their students to be similarly reflective and candid. They may discuss how they developed their interests, the major obstacles they have faced in mastering the subject, or some of their secrets for learning particular material. They often discuss openly and enthusiastically their own sense of awe and curiosity about life. Above all, they tend to treat students with what can only be called simple decency.



### 6. *How Do They Check Their Progress and Evaluate Their Efforts?*

All the teachers we studied have some systematic program—some more elaborate than others—to assess their own efforts and to make appropriate changes. Furthermore, because they are checking their own efforts when they evaluate students, they avoid judging them on arbitrary standards. Rather, the assessment of students flows from primary learning objectives. In Chapter 7 I discuss some methods they use to collect feedback on their teaching, how they use evaluation of students to help accomplish that end, and how they design the grading to keep the focus on real learning objectives.

Three more general points need to be made before I move on: First, this is a book about what outstanding teachers do well; it's not intended to imply that they don't ever come up short or that they don't struggle to achieve good teaching. They all had to learn how to foster learning, and they must constantly remind themselves of what can go wrong, always reaching for new ways to understand what it means to learn and how best to foster that achievement. Even the best teachers have bad days, as they scramble to reach students. As the study revealed, they are not immune to frustrations, lapses in judgment, worry, or failure. They don't even always follow their own best practices. Nobody is perfect. As we move through the book, emphasizing what works best, it may be easy to forget those imperfections, or to think that great teachers are born, not made. Yet the evidence suggests otherwise. I suspect that part of the success they do enjoy stems, in part, from the willingness to confront their own weaknesses and failures. When we asked one of our earliest subjects, a philosophy professor from Vanderbilt, to give a public talk about his teaching, he tellingly chose as his title, "When my teaching fails."

Second, they didn't blame their students for any of the difficulties they faced. Some of our subjects taught only the best of students;



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others, only the weakest; but many worked with individuals from a variety of backgrounds. We wanted to know what cut across all these grounds, whether anything was common to the best teaching in both highly selective institutions and schools with the most open of admissions policies.

Third, we noticed that the people we selected generally had a strong sense of commitment to the academic community and not just to personal success in the classroom. They saw their own efforts as a small part of a larger educational enterprise rather than as an opportunity to display personal prowess. In their minds, they were mere contributors to a learning environment that demanded attention from a fellowship of scholars. They frequently worked on major curricular initiatives and joined public conversations about how to improve teaching in the institution. Many of them talked about how the success of their own teaching hinged on something students learned in other classes. Consequently, they tended to maintain vigorous exchanges with colleagues about how best to educate students and often cited something they learned from working with others. Fundamentally, they were learners, constantly trying to improve their own efforts to foster students' development, and never completely satisfied with what they had already achieved.

### LEARNING FROM THE STUDY

How can anyone use these conclusions to improve their teaching? The full answer to this simple question will take the entire book to explain, but an initial point seems obvious: We cannot take single pieces of the patterns noted here and simply combine them with other, less effective or even destructive habits and expect them to transform someone's teaching any more than adopting Rembrandt's brush strokes would, by itself, replicate his genius. We must understand the thinking, attitudes, values, and concepts that lie behind pedagogical masterpieces, observe practices carefully but



then begin to digest, transform, and individualize what we see. To take the Rembrandt analogy a step further, the great Dutch artist could not be Picasso any more than the Spanish painter could replicate his predecessor; each had to find his own genius. So too must teachers adjust every idea to who they are and what they teach.

Ultimately, I hope this book will inspire readers to make a systematic and reflective appraisal of their own teaching approaches and strategies, asking themselves why they do certain kinds of things and not others. What evidence about how people learn drives their teaching choices? How often do they do something only because their professors did it? Ideally, readers will treat their teaching as they likely already treat their own scholarship or artistic creations: as serious and important intellectual and creative work, as an endeavor that benefits from careful observation and close analysis, from revision and refinement, and from dialogues with colleagues and the critiques of peers. Most of all, I hope readers will take away from this book the conviction that good teaching can be learned.