

What the Best College Teachers Do

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The following represents summary outline notes on the information contained in the book cited above. Page references in the book are provided in the event that further contextual information is desired. Please report any inaccuracies or make suggestions to F. Joseph Peabody at peabody.byu.edu. (formatted by JMG 7/08)

CHAPTER 1. Defining the Best

Two acids tests for excellence in teaching p. 7

1. Evidence that most students are highly satisfied with the teaching and inspired by it to continue to learn. The teacher had reached students intellectually and educationally and had left them wanting more.
2. Helping and encouraging students to learn in ways that would usually win praise and respect from both disciplinary colleagues and the broader academic community. This implies a sweeping sense of educational worth that stems 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.

Major conclusions pp. 15-19

The best college teachers:

1. Know their subject matter extremely well
 - Fundamental principles
 - Organizing concepts that others can see
 - Know how to simplify and clarify complex subjects
 - Cut to the heart of the matter with provocative insights
 - Can think about their own thinking
 - Have an intuitive understanding of human learning
 - Learning-centered vs. instruction-centered
2. Prepare for their teaching sessions as serious intellectual endeavors, as important as research and scholarship
 - Focus on student learning objectives
 - Learning-centered vs. instruction-centered
3. Expect more from students
 - Not just piling on more assignments
 - Employ objectives that embody the kind of thinking and acting that is expected for life
4. Create a natural critical learning environment
 - People learn by confronting intriguing, beautiful, or important problems, authentic tasks that will challenge them to grapple with ideas, rethink assumptions, examine mental models of reality
 - Learners have a sense of control over their education
 - Work collaboratively with others
 - Believe that their work will be considered fairly
 - Try, fail, receive feedback from expert learners in advance of and separate from any summative judgment
5. Treat students fairly
 - Reflect a strong trust in students
 - Believe students want to learn and can
 - Display openness- talk about intellectual journey- encourage students to do same

- Share secrets for learning material
- Discuss openly and enthusiastically their own sense of awe and curiosity about life
- Treat students with simple decency

6. Check progress and evaluate efforts

- Have a systematic program to evaluate efforts and make appropriate changes
- Avoid judging students on arbitrary standards
- Assessment of students flows from primary learning objectives

Putting these skills to work in your teaching pp. 19-21

General points to consider:

1. Sometimes the best of teachers fail.
2. They don't blame students for difficulties faced.
3. They have a strong sense of commitment to the academic community.

"Ultimately, I hope this book will inspire readers to make a systematic and reflective appraisal of their own teaching approaches and strategies, asking them 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." Bain p. 21

CHAPTER 2. What Do They Know About How We Learn?

- the best teachers do not necessarily have a long publication record
- Have a keen sense of the history of the discipline including controversies- nature of thinking
- Use this ability to think about their own thinking - metacognition
- Distinguish between foundational concepts and elaborations or illustrations of those concepts
- Realize where people are likely to face difficulties developing their own comprehension
- Can use this understanding to simplify and clarify complex topics: tell the right story, raise provocative questions
- Knowledge is constructed- not received
- Students come with existing paradigms
- New knowledge tries to fit existing paradigms
- We want students to build new mental models of reality

Key concepts: pp. 26-47

1. Knowledge Is Constructed, Not Received

- We construct our sense of reality out of all the sensory input we receive
- We build patterns of the way we think the world works
- Our brains are both storage and processing units
- New sensory input is integrated into already existing mental models
- Some students bring misconceptions of reality to class
- Highly effective teachers want students to see a portion of reality the way the latest research and scholarship in the discipline has come to see it

2. Mental Models Change Slowly

- Deep learning vs. surface learning
- Face a situation in which their mental model will not work- "expectation failure"
- They care that it does not work strongly enough to stop and grapple with the issue at hand
- Be able to handle the emotional trauma that may accompany challenges to long-

standing beliefs

3. Questions Are Crucial

- Questions help construct knowledge- indexing information
- Memory holds questions
- Associated answers stimulate students to ask their own questions
- Memory generates questions and changes knowledge structure

4. Caring Is Crucial

- Learn best when asking a question that they care about or adopt a goal that they want to reach
- What motivates/ discourages?
- Teachers developed series of attitudes, conceptions, practices that motivate
- Intrinsic interest lessens when the extrinsic reward (grades) is removed- student perception is that they are being manipulated by external reward
- Loss of "locus of causality"
- Avoid person praise (you are so smart) minimum performance level
- Provide task praise (you did that well) mastery orientation
- Move students toward learning goals and mastery orientation
- Give students as much control as possible over learning
- Non-judgmental feedback
- Stressed opportunities to improve
- Looked for ways to stimulate advancement
- Avoid dividing students "sheep and goats"
- Encourage collaboration and cooperation
- Avoid grading on curve- achieve highest standard
- Plentiful opportunities to revise and improve work
- Avoid using grades to persuade students to study
- Invoke subject enthusiasm
- Avoid language of demands- promises
- Invite students as colleagues to dinner, not as a summons to court
- Help students understand connection between current topics and larger fundamental inquiry
- Discuss the big questions- global implications
- Allow students to ask, "Who gives a damn?"
- Socratic method- construct a puzzle, discussion is all tied up, clarification to untie puzzle
- Different kinds of learners
 - Bulimic learners
 - Performance avoiders
 - Deep learners
 - Strategic learners
- Abstain from appeals to competitive
- Stress beauty, utility, intrigue of questions
- Pursue answers to questions vs. information
- Make promise to students – try to help each one achieve as much as possible
- Craft and outline for students fascinating notions about what it means to develop as intelligent and educated people
- Bring challenging objectives
- Listen to students' ambitions

Developmental View Of Learning

- Received knowers- getting right answers- the banking model
- Subjective knowers- if it feels right
- Procedural knowers- play the game
- Commitment knowers- independent, critical, creative
- Separate knowers – able to learn on their own
- Connected knowers – able to learn with others

CHAPTER 3. How Do They Prepare To Teach?

The best teachers focus primarily on what the students will learn, supported secondarily by what and how they will teach. They concentrate on engaging students by creating a learning environment.

They ask the following questions as they prepare to teach p. 49

1. What should my students be able to do intellectually, physically, or emotionally as a result of their learning?
2. How can I best help and encourage them to develop those abilities and habits of the heart and * to use them?
3. How can my students and I best understand the nature, quality, and progress of their learning?
4. How can I evaluate my efforts to foster that learning?

Planning questions as you prepare to teach. pp. 50-60

1. What big questions will my course help students answer, or what skills, abilities, or qualities will it help them develop and how will I encourage my students interest in those questions and abilities?
 - Plan backward- begin with results desired (goals).
 - Motivate students to want to achieve same goals.
2. What reasoning abilities must students have or develop to answer questions that the course raises?
 - Use evidence to draw conclusions.
 - What does it mean to think like a (insert discipline-specific practitioner title)?
 - What are the particular abstract reasoning abilities required?
 - Where are students likely to have difficulty in reading or solving problems in the field?
 - How can I encourage them to grapple collectively?
 - How can I provide a sequence of experiences to refine reasoning abilities?
3. What mental models are students likely to bring with them that I will want them to challenge? How can I help them construct that intellectual challenge?
4. What information will my students need to understand in order to answer the important questions of the course and challenge their assumptions? How will they obtain that information?
 - What will I include in my lecture? Focus on what students need to learn.
 - Students should be able to explain something, how to read more effectively, explain high points to each other, help stimulate reason through ideas and information in readings.
 - What key information or concepts can I clarify to provide students with foundations (scaffold) from which they can continue to build their understanding?
 - What can we do in class to help students learn outside of class?
5. How will I help students who have difficulty understanding the questions and using evidence and reason to answer them?
 - Plan explanations.
 - Devise questions to focus on insightful issues.
 - What can we ask students to write to encourage to grapple with important ideas?
 - What can I show them, stories, voices?
 - How can I identify students who will have the most difficulty?
 - How can I create environment in which students can reason together and challenge each other?
6. How will I confront my students with conflicting problems (maybe even conflicting claims about the truth) and encourage them to grapple (perhaps collaboratively) with the issues?
 - teach the classic debate issues- pairing thinkers from opposite positions

- understand current scientific conclusions- looking at earlier beliefs- tracing historical thought
7. How will I find out what they know already and what they expect from the course, and how will I reconcile any differences between my expectations and theirs?
 - Pass out cards asking what students want to know.
 - Pass out list of topics- indicate interest level.
 - How do I stimulate students to ask good questions?
 - How do I build a community of learners?
 - How do I link class questions to larger issues?
 - Am I willing to change course to match student interests?
 8. How will I help students learn to examine and assess their own learning and thinking, and to read more effectively, analytically, and actively?
 - Can I demonstrate how I learn and solve problems?
 - Can I offer advice to help students develop and understanding of supported ideas?
 - Group students grapple with complex text.
 9. How will I find out how students are learning before assessing them, and how will I provide feedback before- and separate from- any assessment of them?
 - How can I encourage students to think aloud in a non-threatening atmosphere?
 - How can I encourage students to struggle with thoughts without facing assessments?
 - How can I provide significant feedback? - individual, groups, TA
 10. How will I communicate with students in a way that will keep them thinking?
 - How can I stimulate student involvement?
 - How do I provide brief explanations, moderation of discussion, and instructions?
 - What is the role of paper, internet, film, video?
 11. How will I spell out the intellectual and professional standards I will be using in assessing students work, and why do I use those standards? How will I help students learn to assess their work using those standards?
 - How can I guide students to look carefully at their thinking and reasoning?
 - How can I help them understand, appreciate, and adopt standards of good reasoning?
 12. How will the students and I best understand the nature, progress, and quality of their learning?
 - How do students develop intellectually?
 - What are the best indicators of how learners understand something?
 - How will we know how they can reason?
 - Students might assist in answering these questions
 13. How will I create a natural critical learning environment in which I embed the skills and information I wish to teach in assignments (questions and tasks) that students will find fascinating- authentic tasks that will arouse curiosity, challenge students to rethink their assumptions, and examine their mental models of reality? How will I create a safe environment in which students can try, fail, receive feedback, and try again?

CHAPTER 4. What Do They Expect Of Students?

Avoid stereotype vulnerability p. 68

- Look for and appreciate individual value of each student.
- Have great faith in student's ability to achieve.

Students will be buoyed by positive expectations that are genuine, challenging yet realistic, and that take their work seriously.

- Message to students: "What you bring to the class is yourself and your desire to participate, and what you do here depends finally upon that."
- Provide a "promising syllabus." A promising syllabus is based on trust, rejection of power, and setting standards that represent authentic goals rather than "schoolwork."

Major parts of the promising syllabus p. 74-79

1. Lay out promises or opportunities that the course offered, what kind of questions answered, what kind of intellectual, physical, emotional, or social abilities developed, invitation to a feast that student had control over whether accepted.
2. Explain what students would be doing to realize promises (requirements) avoiding language of demands- student control over their education.
3. Summarized how instructor and students would understand nature and progress of learning.

Results:

1. Trust succeeded because it was realistic. It demanded an ambitious yet honest appraisal of what any one person could do.
2. Teachers took great pains to explore students learning, to analyze their work carefully, to determine how different people learn, to design assignments to fit needs. They had an understanding of and an appreciation for external factors that influence learning.
3. In large classes they explore composite picture of types of students.
4. When students had difficulty they first looked for problems in the course itself.
5. They tried to overcome difficulties of motivation and comprehension.

Expecting more from students with low grades pp. 79-83

This is an interesting case study in which researchers significantly decreased the gap between the academic performance of the mainstream American college student and the minority student.

Fundamental ideas about learning pp. 83-85

“The best teachers believe that learning involves both personal and intellectual development and that neither the ability to think nor the qualities of being a mature human are immutable.”

Intellectual development pp. 85-6

What reasoning abilities will students need to possess or develop to answer the questions the discipline raises?

1. Consciously raising questions- What do we know? How do we know? Why do we accept or believe? What is the evidence?
2. Being aware of gaps in information- conclusion reached in absence of complete information- tolerate ambiguity, taking something on faith
3. Discriminate between observation and inference- between established fact and subsequent conjecture
4. Recognize that words are symbols for ideas- not the ideas themselves- use words prior definition (shared experience) avoid technical jargon
5. Probing for assumptions- particularly implicit and unarticulated ones
6. Drawing inferences from data, observations, and evidence - recognize when firm inference cannot be drawn
7. Performing hypothetico-deductive reasoning - visualizing possible outcomes given principles and constraints
8. Discriminate between inductive and deductive reasoning - general to particular vs. particular to general
9. Testing a line of reasoning for internal consistency
10. Developing self-consciousness concerning one's own thinking and reasoning processes.

How can I cultivate the habits of mind that will lead to constant use of those intellectual skills? pp. 87-97

1. Practice - Give students opportunities to use reasoning abilities as they tackle fascinating problems and receive challenges to their thinking.

2. Ask students to consider implications of their reasoning for themselves, world view, policy debates, philosophical questions, moral/ religious.
3. Use course as a window to see what questions the discipline raises; information, inquiries, reasoning skills employed.
4. Advocacy generates controversy, and controversy arouses interest.
5. Choose questions and issues carefully- select common readings more cautiously- sequence materials: easy to difficult.
6. Pose questions, assignments, or resources to answer.
7. Avoid, "Who can tell me what this article said?"
8. "You don't teach a class, you teach a student."

CHAPTER 5. How Do They Conduct Class?

Unifying principles for conducting effective classes pp. 99-117

1. Create a natural critical learning environment
 - Use questions.
 - Skills, attitudes, information is embedded in questions and tasks they find fascinating because they are authentic and arouse curiosity.
 - Learn to think critically.
 - Reason from evidence, standards, environment in lectures, discussions, case studies, role-playing, field work, central project, everyone is working together.
 - Use guidance.
 - Help students understand significance of question, and frame question with clear implications.
 - Use an interdisciplinary approach.
 - Pose an historical struggle, or provocative questions.
 - Foster higher order intellectual activity.
 - Compare, apply, evaluate, analyze, synthesize, make and defend judgments.
 - "When I finish this process, I want the students to feel like they have invented calculus and that only some accident of birth kept them from beating Newton to the punch." p. 102
 - Help students answer questions.
 - Raise questions that will help them reason through the process, to see the nature of the questions.
 - Students develop their own answers- and defend them.
 - Leave students with a question.
 - What is the next question? What can we ask now? What major conclusions did you draw? What questions remain in your mind?
 - Pose an answer to a question that no one has raised.
 - The lecture becomes a way to clarify and simplify complex material while engaging important and challenging questions, or to inspire attention to important matters, to provide, to focus, not encyclopedic
 - Students encounter safe yet challenging conditions in which they can try, fail, receive feedback, and try again without facing a summative evaluation.
2. Get their attention and keep it.
 - Use some provocative act, question, statement.
 - Use a stimulating case study of goal-based scenario.
3. Start with students rather than the discipline.

-Attend to what people think they know, and move them to what you want them to know.

4. Seek comments.

-Ask students if they really want to pursue the course learning objectives as stated in the syllabus:

“The decision to take the course is yours, but once you make that decision, you have responsibilities to everyone else in this community of learners.”

-Highly effective teachers approach each class as if they expect students to listen, think respond, as evidenced by eye contact, enthusiasm in voice, willingness to call on students.

5. Help students to learn outside of class.

-Do in class what you think will best help and encourage students to learn outside of class.

-Give an explanation in class that helps to clarify and simplify, thereby enabling students to study more complex material outside of class.

-Start a discussion giving students a chance to confront existing notions and new ones

-Facilitate a debate to allow students to practice critical thinking skills and uncover their gaps in understanding.

-Facilitate groups work to help students build a sense of community.

6. Engage students in disciplinary thinking.

-Encourage students to think about information and ideas the way scholars in the discipline do.

-Encourage students to understand, apply, analyze, synthesize, and evaluate evidence and conclusions.

-Offer explanations, analogies, questions to help students understand fundamental concepts and solve their own problems.

“While others argue that students learn (memorize?) information first and use reasoning later, the professors we studied assumed that learning facts can occur only when students are simultaneously engaged in reasoning about those facts.”p115

7. Create diverse learning experiences.

-Provide visual information- pictures, diagrams, flowchart, timelines, film, demonstrations.

-Use auditory- speech, visual symbols, written words, math notations.

-Facilitate having students interact to talk things out.

-Allow students to engage in independent reflection.

-Allow students to hear someone else’s explanation.

-Facilitate inductive organization of materials, i.e. fact to data to experiments to general principles and theories.

-Facilitate deductive organization, i.e. apply principles to specific situations.

-Encourage sequential insights.

-Facilitate repetition and familiar methods. Provide a balance of systematic and messy learning techniques.

Employing the craft of teaching in the classroom pp. 117-134

They have the ability to talk- to communicate orally in ways that stimulate thought.

Good Talk

-Use stimulating talk, clear directions, thorough explanations, a conversational style rather than a performance.

-Encourage interaction: teacher/student/student

-Offering gestures and body language that conveyed desire to communicate

-Checked on student comprehension as they talked

-Everyone in room included in discussion- talk to distant corners

- Use rhetorical questions- assess student reactions
- Learned student names
- Moved from behind podium- no obstructions
- Ask for feedback from students
- Paused for 10 seconds at a time- looking at students
- Visibly struggle with an idea- how to explain it
- Engage in constant banter with students- students ask questions, make comments
- In large lecture hall- gestures larger than life
- A sense of the dramatic- to stop talking and let an idea land
 - “They know how to make silence loud.”
- Know when to change pace- rhythm, content, focus, directions, punctuating with stories, questions, humor
- The intention is to stimulate every student’s interests.

Warm Language

- Use an involved style, i.e. tells the story rather than just referring to it.

Making Explanations

- Begin with simple generalizations, then move to complexity and specificity.
- Use familiar language before using specialized vocabulary.
- Use an initial oversimplification with metaphor or analogy.
- Realize that learners must first construct knowledge rather than simply absorb it.

Getting Students to Talk

- Encourage students to think and learn how to engage in an exchange of ideas.
- Ask students to struggle with their own thinking and understanding on a subject to express their ideas to others, and to have their ideas challenged.
- Teacher or students raise significant questions.
- Use stories to stimulate discussion (humor, puzzles).
- Pose moral dilemmas.
- Don’t ask students to discuss assigned readings. Ask them to discuss ideas, issues, problems related to the readings.
 - Think – students think individually
 - Pair – students share with a partner
 - Square – student pairs share with another pair
 - Share – some (or all) groups of four share with entire class
- Divide class into groups that work together.
 - Divided by either student choice or based on preliminary survey to obtain mix.
- Individual work > group work > report to class with discussion.
- Call on students, but with care so as not to cross-examine.
 - Ask questions: What is the key problem? What are we trying to solve? What do we need to know? What are the key definitions and concepts?
 - Student responds, then ask another student to summarize student’s response.
- Get students to lay their thinking on the table.
 - Ask questions: Are there any good solutions? What are the possibilities?
- Stimulate evaluations:
 - What solutions have we considered? How do we compare solutions? What are the implications of the solutions? What are the consequences? What is the “best” solution? Why? What do you reject? Why?
- Ask concluding questions:
 - What have we learned here? What else do we need to know to confirm/ reject

hypotheses? What questions remain unanswered? How do we answer unanswered questions?

“Great teachers are not simply great speakers or discussion leaders; they are, more fundamentally, special kinds of scholars and thinkers, leading intellectual lives that focus on learning, both theirs and their students’. Their attention to the details of performance stems from a concern for the learners, and their focus is on the nature and processes of learning rather than on the performance of the instructor.” p. 134

CHAPTER 6. How Do They Treat Their Students? p. 135

- Good teachers are willing to spend time with students, to nurture their learning.
- Do not foster a feeling of power over, but investment in, students.
- Practices stem from a concern for learning.
- Make the class user-friendly by fostering trust
- Employ various pedagogical tools in a search for the best way to help each student.
- Have the attitude that, “There is no such thing as a stupid question.”
- Everyone can contribute and each contribution is unique.
- Do not convey the feeling that you are a “high priest of arcane mysteries.” Jerry Farber.
- Do not make your classroom an “an arena for expertise, a ledger book for the ego.”
- Students see science as a “frozen body of dogma” that must be memorized and regurgitated.
- Foster the feeling that teachers are fellow students/ human beings struggling with mysteries of the universe.

CHAPTER 7. How Do They Evaluate Their Students And Themselves? p. 150

- Student assessment and teacher evaluation are intertwined.
 - Use assessment to help students learn.
 - Use exams to evaluate how well teacher helped students learn.
 - Revise teaching based on assessment results.
 - The teacher’s responsibility is to develop ability, not just to find it.
 - Evaluation and assessment should stress learning rather than performance.
- What kind of intellectual and personal development do I want my students to enjoy in this class, and what evidence might I collect about the nature and progress of their development?
- Make time expectations clear at the beginning of the course.
- Avoid arbitrary extra credit; it does not reflect learning.
- Collect information about students: their ambitions, approaches to and concepts of learning, way of reasoning, mental models, temperaments, habits of heart and mind, and daily matters that occupy attention.
- Use a survey form/ pre-test, vocabulary test, rank course objectives/ questions end of class evaluation. What major conclusion drawn? Why draw conclusions? What questions remained?
- Use a mid-term evaluation: third party consultant- instructor leaves
 - Students divided into small groups.
 - 6-7 minutes spent answering questions on paper.
 - In what ways has the instructor/ instruction helped you learn? Can you suggest some changes that would better help you learn and grow? What is the nature of your learning?
 - Consultant brings groups back together for group feedback.

Assessing Students p. 151

- The goal is to help students learn to think about their own thinking so they can use the standards of the discipline or profession to recognize shortcomings and correct their reasoning as they go.
- Grades represent clearly articulated levels of achievement.
- Test for how well they understand.
- All exams are comprehensive - you don't just learn something to "kiss it goodbye" once the exam is over.
- Student failure on exams can be corrected on subsequent exams.

Evaluation of Teaching p163

- Should be based on learning outcomes.
- Does the teaching help and encourage students to learn in ways that make a sustained, substantial, and positive difference in the way they think, act, or feel without doing them any major harm?

Possible questions to be answered in teaching portfolios:

- Is the material worth learning?
- Are my students learning what the course is teaching?
- Am I helping and encouraging students to learn?
- Have I harmed my students- engendering only short term, bulimic learning?
- Produce an extensive examination of learning objectives.
- Review students work as a reflection of their learning.
- Analyze the kinds of standards and methods used in assessing that work.
- Look closely at the levels of learning expected.

Student Ratings p. 165

"Rate your learning in this course."

Responses have a high positive correlation with independent measures of their learning.

- Teaching must be judged using a learning perspective.

Teaching Portfolios- used as scholarly case evidence and conclusions that answer questions such as:

What have you tried to help and encourage students to learn?

Why are those learning objectives worth achieving?

What strategies did you use?

Were those strategies effective in helping students learn?

Why or why not?

What did your students learn as a result of your teaching?

If they are not learning what you want them to learn, why not?

Did you stimulate their interest in the subject?

Professors tend to give high marks to colleagues who teach the way they do, and lower ratings to those who do not, regardless of the amount of learning that has or has not taken place.

Peers can provide essential comments on the qualities of learning objectives, syllabus, assessments, assignments, reports from teacher, examples of student work.

Excellent teachers develop their abilities through constant self-evaluation, reflection, and a willingness to change.

Teaching occurs only when learning takes place.