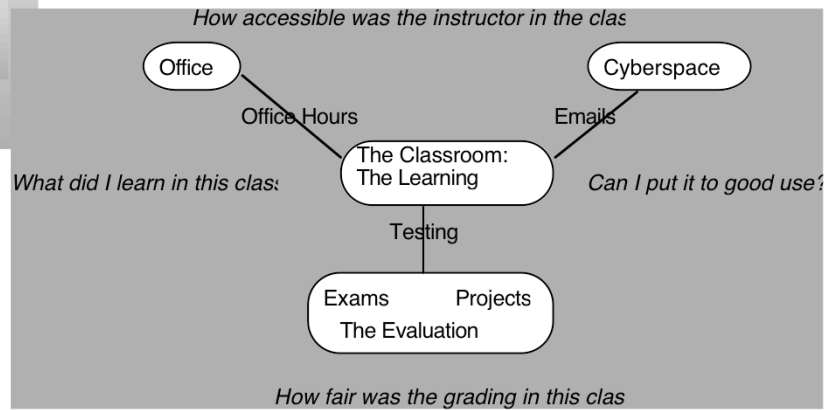


Teaching: Art or Science

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An age old question in every discipline... How much of what we do can be taught and how much are we born with?

The Elements of Teaching



The ingredients for teaching a large class are the same as those needed for a small class.

The importance of testing...

Why do you give exams and quizzes?

- Because I am required to...
- Because it forces students to keep up with the material..
- It is the basis for their grades..
- All of the above
- None of the above (Give me your reason then..)

Which of the following best describes your exam writing/grading philosophy?

- I give easy exams but grade tough
- I give tough exams but grade easy
- I give easy exams and grade easy
- None of the above

What are the characteristics a good grading system? Of a bad one?

How you approach giving and structuring exams depends in large part on why you give exams...

Exams and Grading

- Tie exams to your course objective: Structure your exams around what you want students to learn from the class and not from ease of grading or other objectives.
 - *Corollary: Unless you plan to religiously follow a textbook, avoid test banks.*
- Make it difficult to cheat: People cheat... and even a few cheaters can create the perception that the grading is not fair.
 - Multiple versions
 - Tougher enforcement of the rules
- Speedy noisy feedback is better than perfect delayed feedback: Quick feedback is even more important for a large class than for a small one. Students have a much tougher time gauging how well or badly they are doing.
 - Give quizzes early and often
 - Provide grades back as quickly as you can
- Be fair: Listen to grading grievances and admit your mistakes.

If you have to compromise on how you teach and how you test students, when you are teaching a large class, you will find yourself (and the students) dissatisfied with the final output.

Being clear and consistent about how you will be testing and grading is critical in a large class.

1. Start the first session off by explaining what form the tests will take, how much they will weigh and how the final grades will be assessed
2. Stick with it.
3. Be much stricter about allowing deviations from the rules. While this just may be a headache with a class of 20 can be devastating in a class of 150 or 300.

This may sound technically infeasible, but giving feedback quickly is much more critical in a large class. Students in large classes have a much tougher time gauging where they stand and how they are doing. Anxiety about performance is therefore rampant, and quick and constant feedback is necessary.

Office hours and other delights...

Do you enjoy having office hours?

- Yes
- No
- Sometimes

If you dislike office hours, why do you dislike them?

- They are an imposition on my time
- They are boring
- Too many people with too many questions

Just asking... Most people that I have talked to either dislike office hours or resent the drain it puts on their time.

Interaction outside the class

- Minimize administrative issues: Be as clear and decisive as you can be about the administration of the class and how you will be grading students.
- Learn from doubts/questions: Reduce the proportion of your office hours you are spending answering the same question over and over.
 - If you are asked the same question more than three times by different students, either open a class by posing the question for the whole class and answering it (or)
 - Developing a help manual for the class, where you start listing the questions with your answers and make the manual available to all students (or)
 - Use technology. Put your help manual online. It makes searching easier
- Have an open-door policy. Being available does not mean that you will be inundated by students.

How do you interact with 300 students outside the classroom?

First, eliminate questions that arise because of poor organization. A simple mistake like getting a chapter number wrong on the syllabus can cost you. Fix the mistake as quickly as you can.

Second, reduce repeat questions on the same topics. Help students find the help they need without having to come to you.

Third, be available, if needed.

Some creative uses of email..

1. Reinforcing lessons from class
 - a. Short summary of class right after class ends
 - b. Newsletter at the end of each week
 - c. Articles relating to the topic at hand (from business press...)
2. Reminders of cases and exams coming due.
3. Keep track of your outliers...
 - a. The Good outliers, who are interesting in delving deeper into the subject than you will be able to cover in class.
 - b. The Neutral outliers, who hope to fade into the background.
 - c. The Bad outliers, who have given up on the class

Email Rules

1. **Set aside time to answer email. Don't view it as an imposition.**
2. **If you open email, answer it.**

Email is part of our lives now.. No point fighting it.

In the Classroom...

These are some of the overheads I use in one class session in my corporate finance class where I introduce the question of how firms should raise money - whether they should equity or debt.

Rather than talk about teaching in the abstract, I will use a set of overheads from one session that I teach in my corporate finance class on the right mix of debt and equity that a firm should use in funding a business...This session is midway through the class (about the 14th session in a 27 session class)

The Classroom

- In the classroom,
 - Put it in context - provide the big picture
 - Be clear about where you are going before you take off.
 - Make it relevant
 - Explain why what you will be doing matters before jumping into topics
 - Frame topics to appeal to the widest audience
 - Make it real
 - Use real companies
 - Connect to everyday occurrences
 - Keep people involved
 - Active versus Passive participation
 - Look for Aha! Moments
- Know your strengths and weaknesses and choose a teaching style that reflects them.

The ingredients for a successful class. Necessary but not sufficient conditions?

Show them the big picture..
First Principles

- Invest in investments that yield a return greater than the minimum acceptable rate of return or hurdle rate.
 - The hurdle rate should be higher for riskier projects and reflect where you get the funds - owners' funds (equity) or borrowed money (debt)
 - Returns on investments should be measured based on cash flows generated and when you get these cash flows; they should also consider both positive and negative side effects of these projects.
- Choose a mix of debt and equity that minimizes the hurdle rate and matches the assets being financed.
- If there are not enough investments that earn the hurdle rate, return the cash to owners of the business.
 - The form of returns - dividends and stock buybacks - will depend upon the owners' characteristics and preferences.

Objective: Maximize the Value of the Business

SHOW THE BIG PICTURE

Frame each session in the context of a big picture. This way

1. you provide a motivation for why you will be talking about what you are
2. You provide a context for the topic, and connections to both what has been done already and what is coming.
3. Start the class with a familiar page, and allow it to settle in before new concepts are introduced

Task 1: The Big Picture for the class you teach...

- Think about the big picture/ first principles that govern the class that you are teaching now. While doing this,
 - Avoid the jargon that is endemic to every discipline
 - Think in terms of the principles that govern how you think through problems in your discipline rather than on tactics or strategy.
 - Put first principles in common sense terms
 - Keep it compact (should fit on a page)
- Test it out by explaining what you are trying to do in your class to someone who does not know anything about your discipline and, better still, does not care.

Not all of us are lucky enough to be able to frame classes the way we want them to. All too often, we are given classes structured by other people and asked to teach them. One test of how difficult it is to get a class to make sense is whether you can put together a big picture for the class. If you find yourself constructing laundry lists rather than a compelling story, you have a tough class to teach. If this happens,

-Be subversive. Teach the class that you want to teach while meeting all of the criteria required of you.

-Work at making some cohesive sense of the material that you have to teach and a way of tying it together

The Financing Mix Question

- In deciding to raise financing for a business, is there an optimal mix of debt and equity?
 - If yes, what is the trade off that lets us determine this optimal mix?
 - If not, why not?

CONTROL THE AGENDA

Pose the basic question that you will be trying to answer in this class, before you delve into models and details. This will frame the discussion for the rest of the class.

Task 2: The question of the day is....

- For each session in your class, outline the key question or questions that you hope to answer. In doing so, keep in mind that
 - Most good lectures revolve around one question
 - Framing the question correctly will make it easier for your students to follow the class.
 - Your lecture should revolve around answering the question.

Remember that your class is not the focal point of any of your student's lives. They have other classes, lives to live, personal crises to overcome, families to deal with.... Giving them a hook before each class makes it easier for them to understand the material in the class and hold on to what matters.

Motivate the discussion
Why your debt ratio matters...

- Every business, small or large, private or public, has to choose a mix of debt and equity to fund its operations.
- It is possible that there exists a mix of debt and equity that is best for each business, and that the mix could be different for different businesses.
- If such a mix exists, we should try to find it even though we may be constrained by internal and external factors from moving to that mix.

You may believe that every topic and model you cover is important but it is your job to explain to others why this is so, even though it may be obvious to you.

Task 3: Make it relevant

- For each lecture in your class, explain why answering the question you will be addressing in that session matters. In coming up with the motivation, remember that the following don't work:
 - You need to know it because it will be on the exam
 - Everyone in my discipline (finance, marketing ..;) believes that it is important to know this...
- If you cannot find a good reason why students should know the answer to a question, perhaps you should not ask it in the first place...

If the only reason you can give for why your students have to study something is that it will be on the exam, you have failed. You need to make whatever you are teaching have a deeper meaning....

Generalize the discussion
The Choices in Financing

- There are only two ways in which a business can make money.
 - The first is debt. The essence of debt is that you promise to make fixed payments in the future (interest payments and repaying principal). If you fail to make those payments, you lose control of your business.
 - The other is equity. With equity, you do get whatever cash flows are left over after you have made debt payments.
- The equity can take different forms:
 - For very small businesses: it can be owners investing their savings
 - For slightly larger businesses: it can be venture capital
 - For publicly traded firms: it is common stock
- The debt can also take different forms
 - For private businesses: it is usually bank loans
 - For publicly traded firms: it can take the form of bonds

BE INCLUSIVE

Assume nothing, or better still, assume that you are talking to a very diverse group of students with different backgrounds and interests. Generalize the discussion to have meaning to everyone in the class. Make clear why the topic that you will be discussing should have interests to different groups of people.

Task 4: Generalize your discussion

- Take a typical lecture and go through it looking for ways to say things that appeal to those from
 - From other countries
 - From other backgrounds (not finance, in my case)
 - With other interests

Get a sense of your student backgrounds... How old are they? Where are they from? What are they interested in? Where do they plan to go after your class?

Make it real
Measuring a firm's financing mix

- The simplest measure of how much debt and equity a firm is using currently is to look at the proportion of debt in the total financing. This ratio is called the debt to capital ratio:
$$\text{Debt to Capital Ratio} = \text{Debt} / (\text{Debt} + \text{Equity})$$
- Debt includes all interest bearing liabilities, short term as well as long term.
- Equity can be defined either in accounting terms (as book value of equity) or in market value terms (based upon the current price)

DEFINE TERMS (EVEN OBVIOUS ONES)

Even the simplest terms can be defined differently by different people or not be understood by others (who will be too embarrassed to ask questions). Give your definition of terms. This will allow you to bring different definitions together, and correct those who have the wrong definition to begin with.

Bring in real companies

Disney

Market value of equity = \$ 55 billion
Short Term Debt = \$ 3 billion
Long Term Debt = \$10 billion

Debt Ratio = $13/68 = 20\%$

Bookscape

Market value of equity = \$ 22 million
Short Term Debt = \$ 0
Long Term Debt = \$ 0

Debt Ratio = 0%

Aracruz

Market value of equity = 9 billion BR
Short Term Debt = \$ 3 billion BR
Long Term Debt = \$ 1 billion BR

Debt Ratio = $4/9 = 31\%$

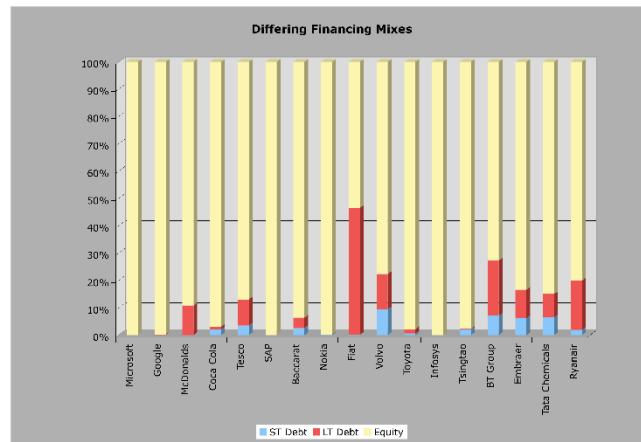
Real companies cement concepts and also bring home the fact that companies are different (and usually for good reasons)....

⌚ Application Test: What is your firm's debt ratio?

- Looking at the balance sheet of your firm on page 9, estimate the following:
 - Total interest bearing debt at your firm
 - The book value of equity
 - Book value debt to capital ratio
- Using the market value of equity in the firm on page 1, estimate the market value debt to capital ratio

APPLY! APPLY! APPLY!

The Real World Intrudes...



Shows how different real companies are in their choices of debt vs equity, ST debt versus LT debt....

Task 5: Make it real..

- When introducing a measure, a model or a proposition, follow it up by having students look at a real company. If possible,
 - Let them pick their own companies
 - Make it real time
 - Work with the companies in class
- If not, use a case...

Try finding a good example for every concept or model that you will be introducing in the real world.... This may seem like a lot of work but it is really incremental. Every time you read the business pages, look for real world examples and save them.

Roadmap...
The Trade Off: Debt versus Equity

- Benefits of Debt
 - Tax Benefits
 - Adds discipline to management
- Costs of Debt
 - Bankruptcy Costs
 - Agency Costs
 - Loss of Future Flexibility

SUMMARY, BEFORE DETAILS

Use anecdotes to bring home your point
Debt adds discipline to management

- If you are managers of a firm with no debt, and you generate high income and cash flows each year, you tend to become complacent. The complacency can lead to inefficiency and investing in poor projects. There is little or no cost borne by the managers
- Forcing such a firm to borrow money can be an antidote to the complacency. The managers now have to ensure that the investments they make will earn at least enough return to cover the interest expenses. The cost of not doing so is bankruptcy and the loss of such a job.

ANALOGY!

Task 6: Explain with every day occurrences...

- When explaining a concept, see if you can come up with something from everyday life that brings it home. If you can,
 - Make it personal
 - Make it funny
 - And keep it connected to what you are trying to explain
- Try it out on an audience. If it does not work, try modifying it. If it does, remember it and keep fine tuning it.

Don't force analogies... and don't go for just humor. Focus on your material first, and be comedians or entertainers later.....



Seek active participation Added Discipline...

Assume that you buy into this argument that debt adds discipline to management.

Which of the following types of companies will most benefit from debt adding this discipline?

- Conservatively financed (very little debt), privately owned businesses
- Conservatively financed, publicly traded companies, with stocks held by millions of investors, none of whom hold a large percent of the stock.
- Conservatively financed, publicly traded companies, with an activist and primarily institutional holding.

PARTICIPATION! (PASSIVE OR ACTIVE)

Task 7: Create active participation...

- Take a few open ended questions that you currently ask in class and see if you can convert them into a multiple choice questions, with each answer representing a feasible answer (albeit with a different assumption needed to get there).

Again, try to add one participation question to each lecture each time you teach. You will build up to many more over time.

(When you ask a question and get an unexpected but very good answer, save it)

Set up the process
Debt: Summarizing the Trade Off

Advantages of Borrowing

1. Tax Benefit:

Higher tax rates --> Higher tax benefit

2. Added Discipline:

Greater the separation between managers and stockholders --> Greater the benefit

Disadvantages of Borrowing

1. Bankruptcy Cost:

Higher business risk --> Higher Cost

2. Agency Cost:

Greater the separation between stockholders & lenders --> Higher Cost

3. Loss of Future Financing Flexibility:

Greater the uncertainty about future financing needs --> Higher Cost

SUMMARIZE... REPEAT... SUMMARIZE

Let them figure it out
A Hypothetical Scenario

- Assume you operate in an environment, where
 - (a) there are no taxes
 - (b) there is no separation between stockholders and managers.
 - (c) there is no default risk
 - (d) there is no separation between stockholders and bondholders
 - (e) firms know their future financing needs

What are the costs and benefits of borrowing in this scenario? What are the implications for an optimal debt ratio?

LET THEM FIGURE IT OUT SOMETIMES....

Aha!

The Miller-Modigliani Theorem: When your financing mix is irrelevant

- In an environment, where there are no taxes, default risk or agency costs, capital structure is irrelevant.
- The value of a firm is independent of its debt ratio.

Makes your students feel like they deserve the Nobel prize.

Aha²: Build on confidence

⌚ Application Test: Would you expect your firm to gain or lose from using a lot of debt?

- Considering, for your firm,
 - The potential tax benefits of borrowing
 - The benefits of using debt as a disciplinary mechanism
 - The potential for expected bankruptcy costs
 - The potential for agency costs
 - The need for financial flexibility
- Would you expect your firm to have a high debt ratio or a low debt ratio?
- Does the firm's current debt ratio meet your expectations?

Close the discussion with the broad question that you began the discussion with...

Task 8: Create aha moments!

- If you could do it, what part of your class would you want your students to have the aha moment on? How would you go about making it easier from them to get there?
 - A simple framework for thinking through problems
 - No extraneous issues and questions
 - No buzz words...
 - A non-threatening atmosphere
- The more important the proposition, the greater the payoff to letting them get there on their own...

Don't plan for it but be open to it.

Use technology wisely

- Go for the steak, not the sizzle
 - Don't let technology get in the way of your message
 - Your audience is less dazzled that you think... and a lot more jaded.
- Technology is your tool... not the other way around
 - Don't change your teaching style to match technology
 - Start with your class and think of how technology will help you deliver it better.
- Good technology cannot substitute for good teaching
 - Technology will not make up for laziness and lack of preparation
 - Use technology to enhance your strengths and minimize your weaknesses
- If technology can fail, it will
 - Always have a back up plan, and a plan to back that one up
 - In your worst case scenario, you still need to teach

Technology is your tool. If you cannot live without a technological device, that is no longer true.

Closing Thoughts on Teaching...

- Remember the three Es
 - Enthusiasm
 - Energy
 - Empathy
- Its easy to teach when you are in the “zone”. The real test is whether you can teach when you are out of it.
- Be yourself.
- Have fun. It is infectious.

Teaching is not a profession. It is a passion. Let it show.