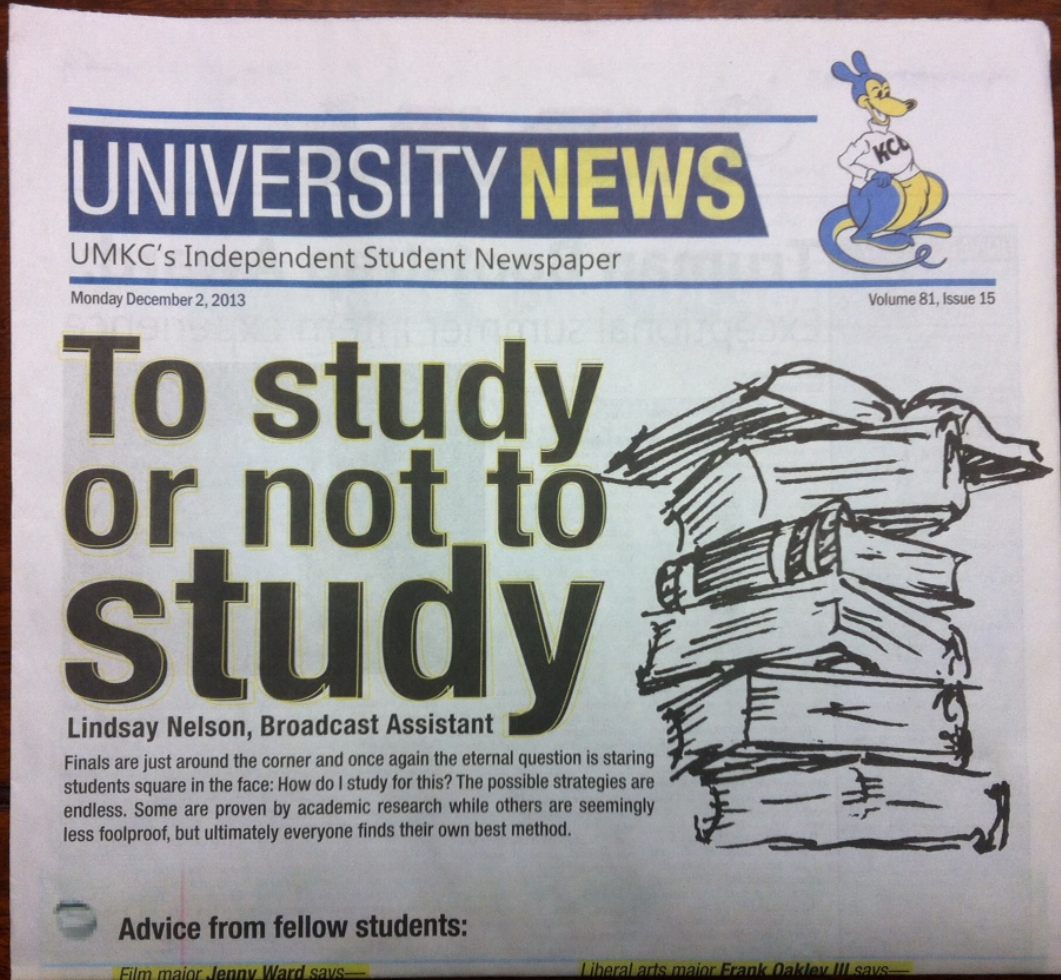


The Flipped Classroom

David W. Cornell, PhD, CPA

“This is my son. He’s a doctor, but not the kind who helps people.”

Why We Are Here



Agenda

Overview of the flipped classroom

- What it is
- How I implemented it

Motivation for flipping the classroom

Benefits of flipping the classroom

- Student evaluations of teaching
- Student performance

Costs of flipping the classroom

Example

The Flipped Classroom

The term flipped classroom implies

- Students listen to lectures at home
- Students do homework in class

If effectively doubles the “touch time”

- Lectures are no longer constrained in length
- How time is spent in class becomes flexible

Class time is the constrained variable. We must use it as effectively as possible.

The Flipped Classroom

The instructor becomes a coach/tutor/mentor

Students are empowered to teach themselves

Interactions are enhanced

1. Student-to-student
2. Instructor-to-student

Implementing the Flipped Classroom

Recording lectures

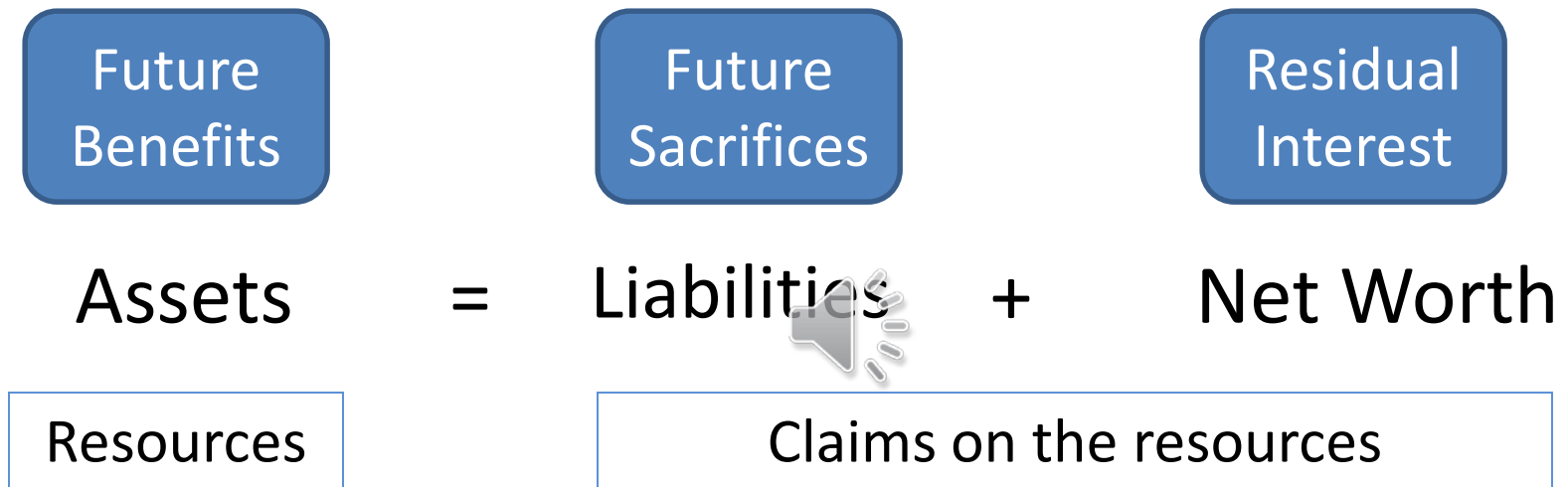
1. PowerPoint

- Record audio
- Videos

2. Tegrity

- My preference because most of my work is in Excel

Example of Recording on PowerPoint



Recording a Lecture on PPT

This works well for lectures on concepts

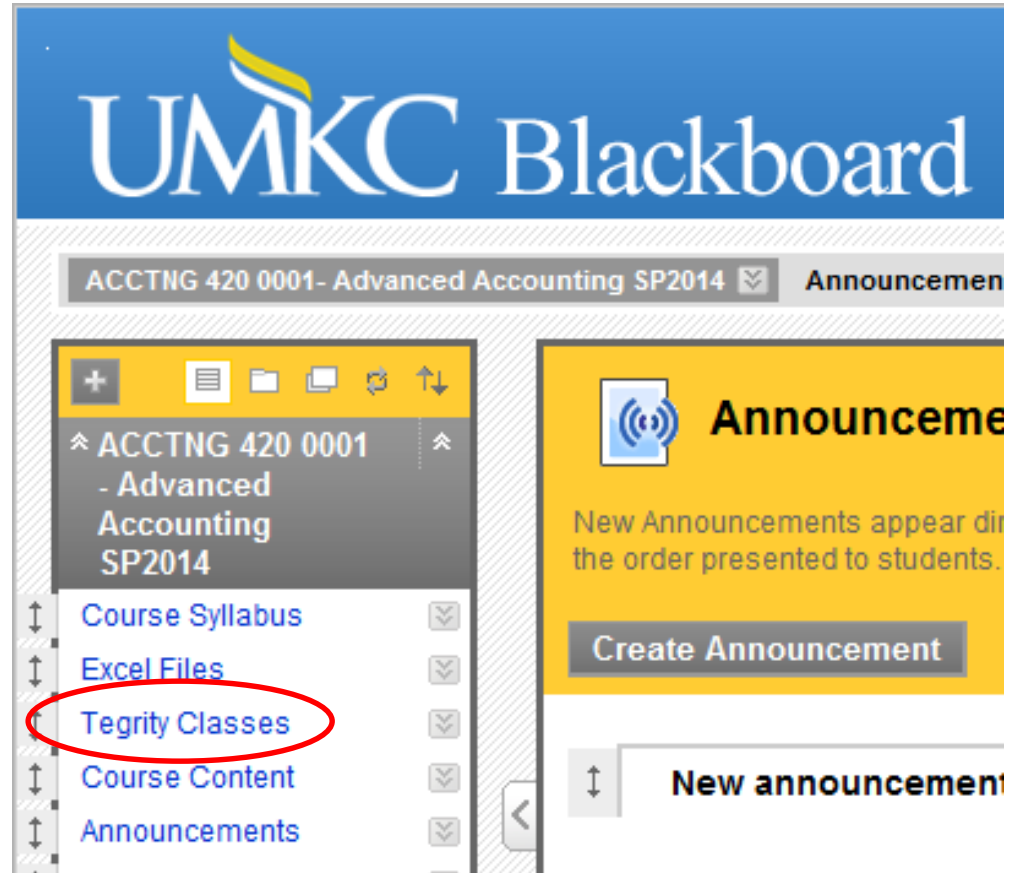
Disadvantages

- You are limited to what is on the slide
- The students have to click on each slide
 - Transitions are not smooth
- You cannot interact with the slide

Recording a Lecture with Tegrity

Tegrity is incorporated into Blackboard at UMKC

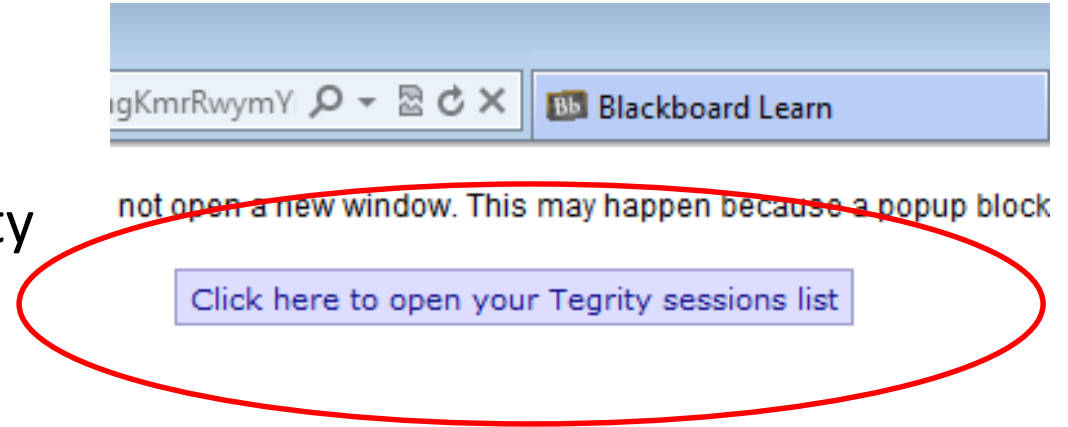
Click on Tegrity classes



Recording a Lecture with Tegrity

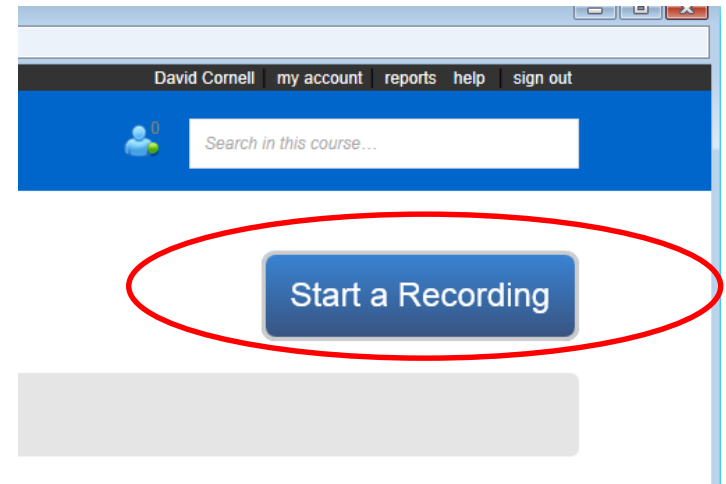
This window opens up

Click on “open your Tegrity sessions list”



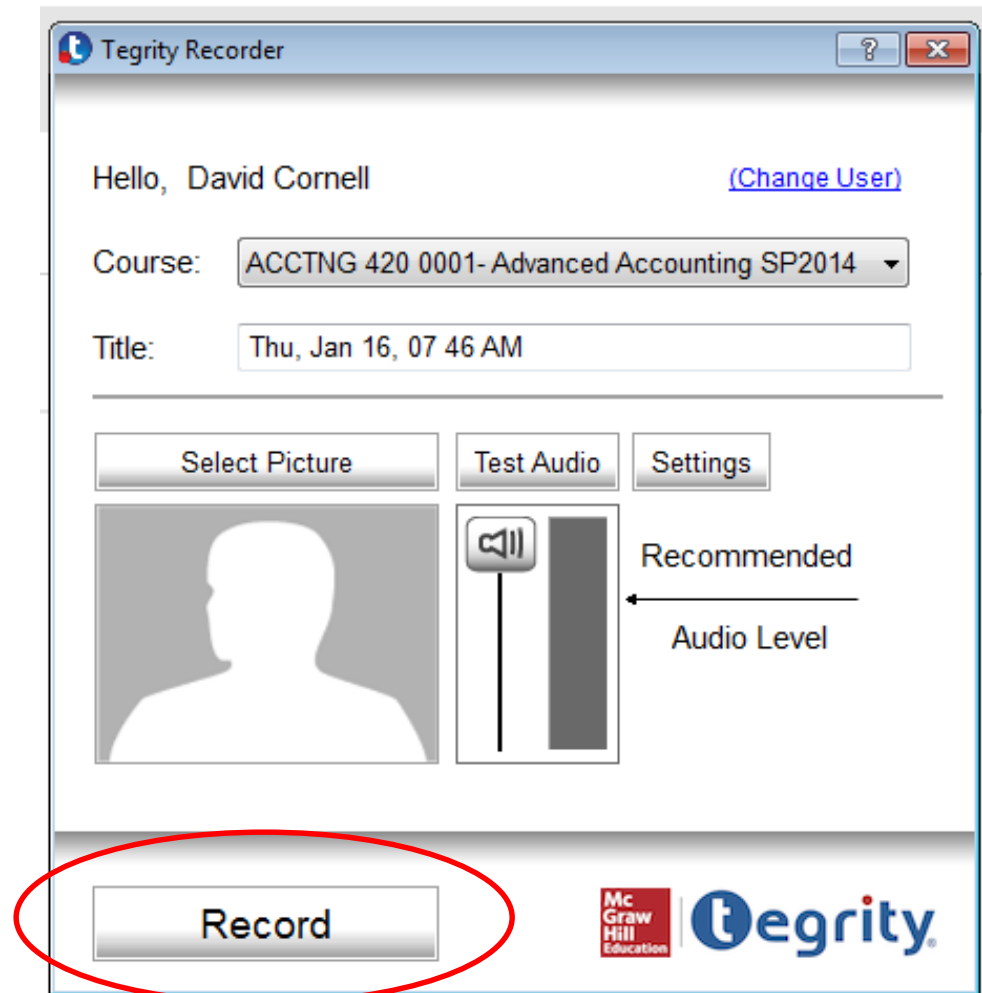
Recording a Lecture with Tegrity

Click on start a recording



Recording a Lecture with Tegrity

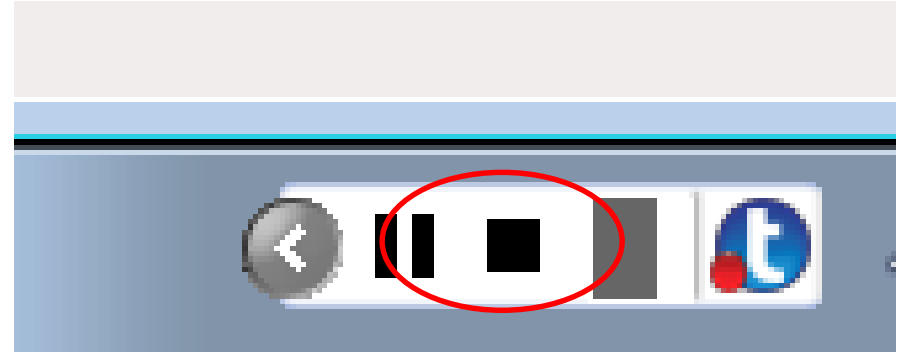
Keep clicking



Recording a Lecture with Tegrity

When you are done, click
the stop button

It will ask you if you want
to save the recording



That is all there is to it.

Recording a Lecture with Tegrity

Tegrity records

- Audio
- Everything on the computer screen
- Video of the instructor (if you want to)

Tegrity is perfect for recording interactive lectures

Limited editing features, however

Motivation for Flipping the Classroom

My goals as an educator are

1. Students learn more in my class than they have in any class that they have ever taken
2. Everyone has fun in class
 1. I bring to class
 - A sense of humor
 - Knowledge
 - Energy
 2. Students should bring
 - A sense of humor
 - Willingness to engage me and other students
 - Desire to learn
 - Work ethic

Development of My Teaching Goals

My teaching goals are a direct result of my experience in making the transition from student to professional

My first assignment at Coopers & Lybrand was to work on a partnership requiring

1. Financial statements
2. Partnership tax return
3. Personal tax returns for each of the partners

The Assignment

1. Workpaper binder
 1. Adjustments worksheet
 2. Depreciation schedules
 3. Inventory count sheets
 4. Salary accrual
 5. Interest accrual
 6. Miscellaneous adjustments
2. Financial statement binder
3. Partnership tax return binder
4. Binders for the personal tax returns of each partner

My Collegiate Goals

1. Swim
2. Have fun
3. Get a college degree

Bloom's Taxonomy of Learning

- **Knowledge** – This is the lowest level of learning. It includes **recall** and **memory**
- **Comprehension** – This is the lowest level of understanding. The student uses facts or ideas without relating them.
- **Application** – This is the intellectual skill that entails use of information in specific situations
- **Analysis** – This skill involves taking apart information and **making relationships** in order to discover the hidden meaning and the **basic structure** of an idea or fact.
- **Synthesis** – The student is able to reassemble the component parts of an idea in order to develop new or creative ideas.

The Accounting Education Change Commission

The AECC stated there are two overriding objectives of accounting education

1. Content of accounting education
 - Create a foundation for life-long learning
2. Delivery of that content
 - Students must be taught to learn
 - Learning is a life-long process
 - Memorization of rules and regulations is contrary to the goal of learning to learn

My Quandary

I want students to learn

- The students want a degree

I want students to learn how to learn

- They want me to spoon-feed them

I want students to be self-motivated

- Will this be on the exam?

Quandary Leads to Burnout

I had spent 25 years

- Passionately trying to convince students
 - That my goals are superior to theirs
 - That the profession agrees with me on that point
 - That they CAN learn
 - That once they start learning, it gets easier
 - That accounting information builds from semester to semester
- Developing course materials to facilitate learning
- Teaching a course with a 40 percent DFW rate

Quandary Leads to Burnout

Halfway through the Fall 2012 semester

– I hit the metaphorical wall

The students would not engage with me

Grades on the second exam were awful

I realized that I had to do something different

1. For my students
2. For myself

Quandary Leads to Burnout

I earned a PhD because I have a passion for teaching

- I want to make a difference in the lives of students
- Being a teacher is my essence

Written Comment From Student

“I want to thank you for having a profound influence on my life. What I learned in your class was the amount of work and dedication it takes to succeed. Now I am taking those lessons to work with me every day. I learned so much about myself, how hard I can push, and how to flourish instead of just getting by. And, while I still can exhibit some of my old bad habits of doing “just enough,” I now have the ability to recognize it and the pride to live differently. I thank you from the bottom of my heart.”

Quandary Leads to Burnout

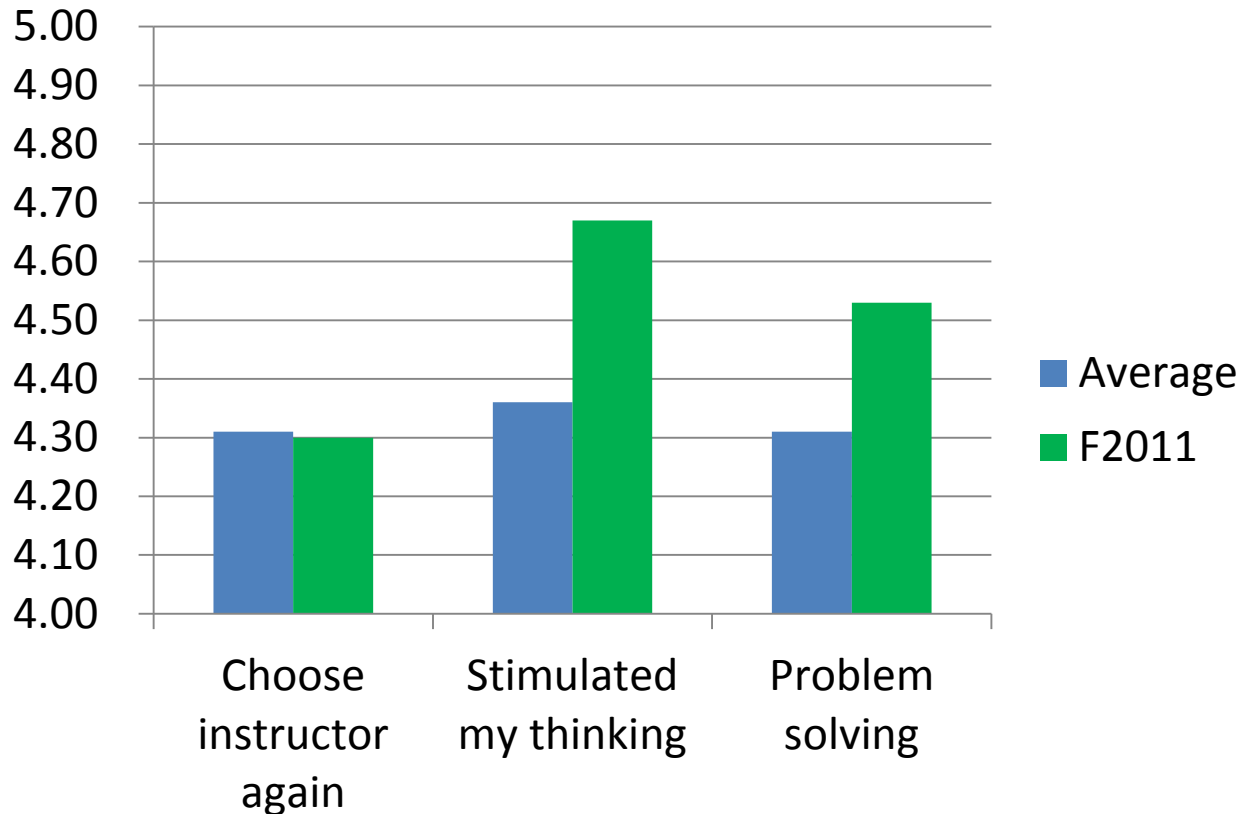
However, the students were not responding

- I was very frustrated
- Walking into the classroom was becoming a burden
- I lost my passion for teaching

I was expending a huge amount of energy trying to motivate the students to be studious (e.g., quizzes, homework, supplemental materials)

I was working harder than they were

Impact on Teaching Evaluations



My student evaluations of teaching reflected the fact that I had lost my passion for teaching

Flipping the Classroom – Fall 2012

After reviewing the second exam

- The structure of the class is not working
- I have recorded Monday's lecture
- Listen to it before class on Monday
- We will spend Monday working problems in class

The only question I received

- “Isn't that increasing our preparation time?”
- I replied that they could substitute the lecture for the assigned reading

Comparison of Teaching Techniques

	Traditional	Flipped
Before class	Read the textbook	
During class	Listen to lecture	
After class	Complete homework	

In the traditional classroom students are **passive listeners**

Comparison of Teaching Techniques

	Traditional	Flipped
Before class	Read the textbook	Read the textbook Listen to recorded lecture
During class	Listen to lecture	
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Comparison of Teaching Techniques

	Traditional	Flipped
Before class	Read the textbook	Read the textbook Listen to recorded lecture
During class	Listen to lecture	Work problems In groups Share results Seek help from professor Write Complete assessments Review previous material
After class	Complete homework	

Comparison of Teaching Techniques

	Traditional	Flipped
Before class	Read the textbook	Read the textbook Listen to recorded lecture
During class	Listen to lecture	Work problems In groups Share results Seek help from professor Write Complete assessments Review previous material
After class	Complete homework	Complete homework Perhaps in groups Watch the lecture again

In the flipped classroom students are **actively engaged in learning**

Comparison of Teaching Techniques

	Traditional	Flipped
Before class	Read the textbook	Read the textbook Listen to recorded lecture
During class	Listen to lecture	Work problems In groups Share results Seek help from professor Write Complete assessments Review previous material
After class	Complete homework	Complete homework Perhaps in groups Watch the lecture again

In the flipped classroom the professor becomes
a **coach/mentor** to facilitate **experiential learning**

The Flipped Classroom



The Flipped Classroom



The Benefits of a Flipped Classroom

Instructor	Student	Employer
Cover more material Integrate topics Repeat topics Reuse lectures More assessments Increased flexibility Personal interactions Class is fun Class takes less energy		

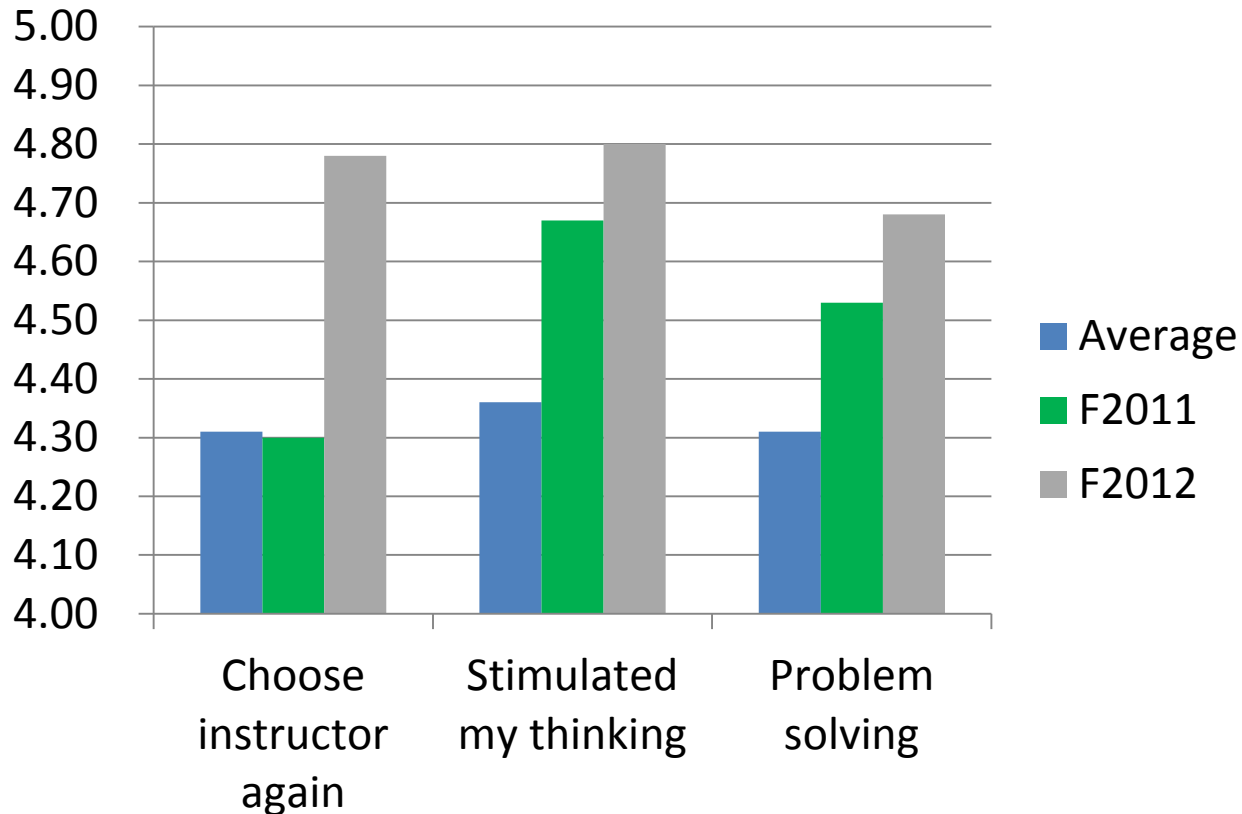
The Benefits of a Flipped Classroom

Instructor	Student	Employer
Cover more material Integrate topics Repeat topics Reuse lectures More assessments Increased flexibility Personal interactions Class is fun Class takes less energy	Group work Communication skills Problem solving skills Increased achievement?	

The Benefits of a Flipped Classroom

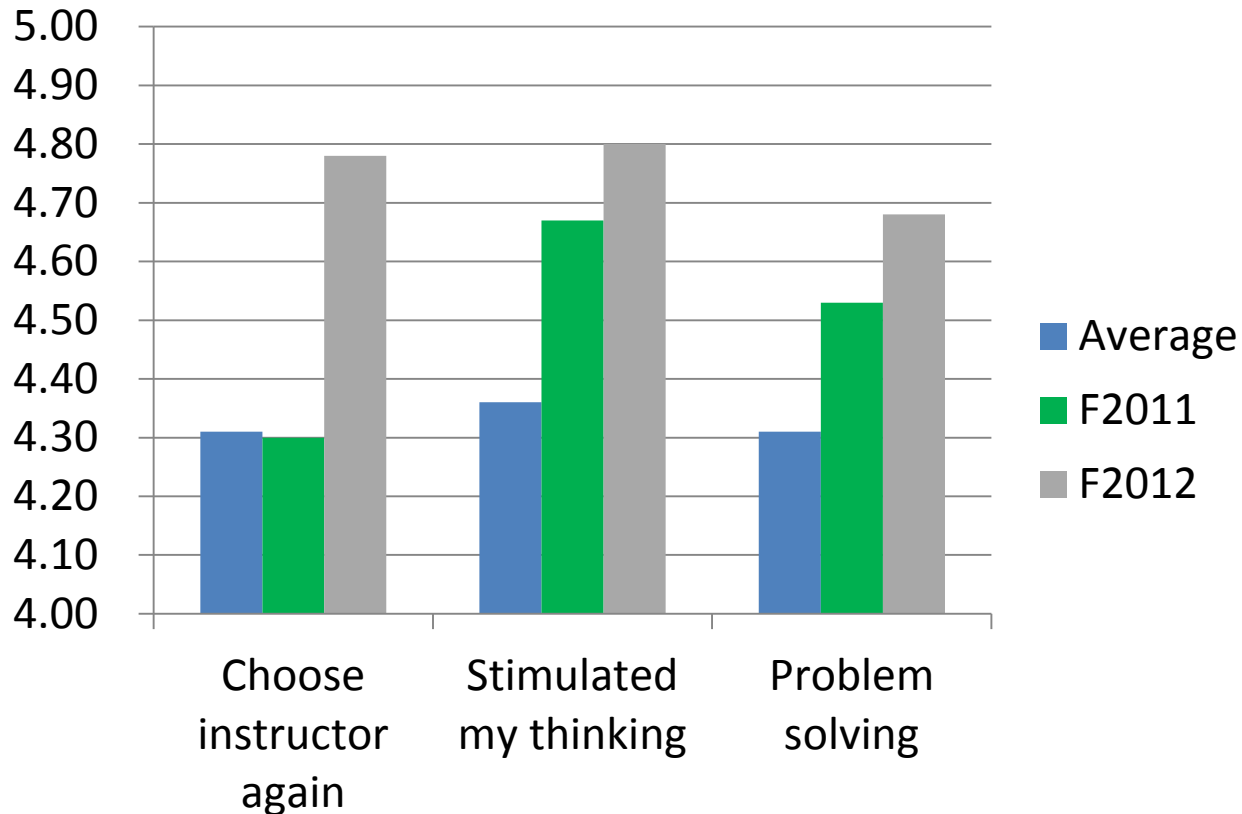
Instructor	Student	Employer
Cover more material Integrate topics Repeat topics Reuse lectures More assessments Increased flexibility Personal interactions Class is fun Class takes less energy	Group work Communication skills Problem solving skills Increased achievement?	Everything in the student column

Impact on Teaching Evaluations



Score for “Would choose instructor again” returned to what it used to be because I had **regained my passion** for being in the classroom

These Evaluations are for First Intermediate Accounting



As soon as I regained my passion for teaching I became the associate dean.

Effects of Being Associate Dean



Effects of Being Associate Dean

I no longer teach First Intermediate Accounting

- Loved teaching this class

- Students walk in as business students
- They walk out as accounting students

- It is physically draining, though

- Pace of the course
- Drop rate

Effects of Being Associate Dean

I only teach Advanced Accounting now

- Primarily consolidations
- Mechanical
- I put myself to sleep

I flipped it last semester

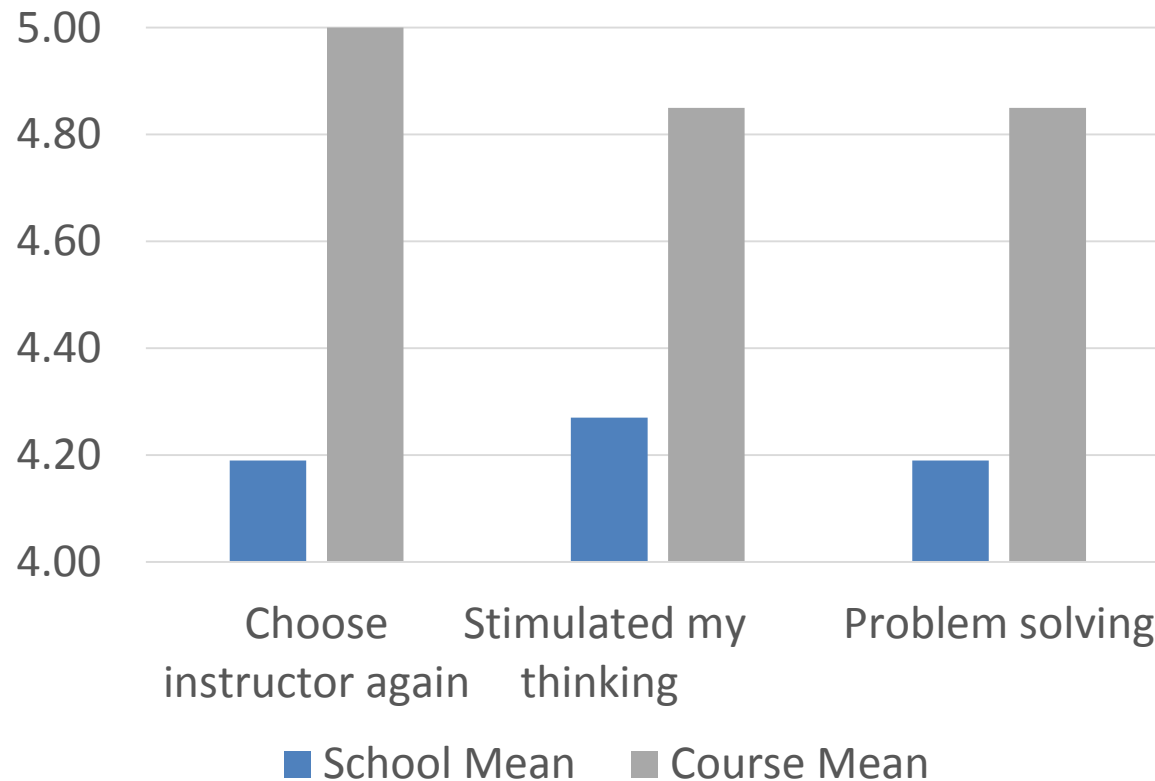
1. Because I believe in flipping the class
2. I could not stand another semester of fighting to stay awake in my own class

Effects of Being Associate Dean

Results of flipping Advanced Accounting

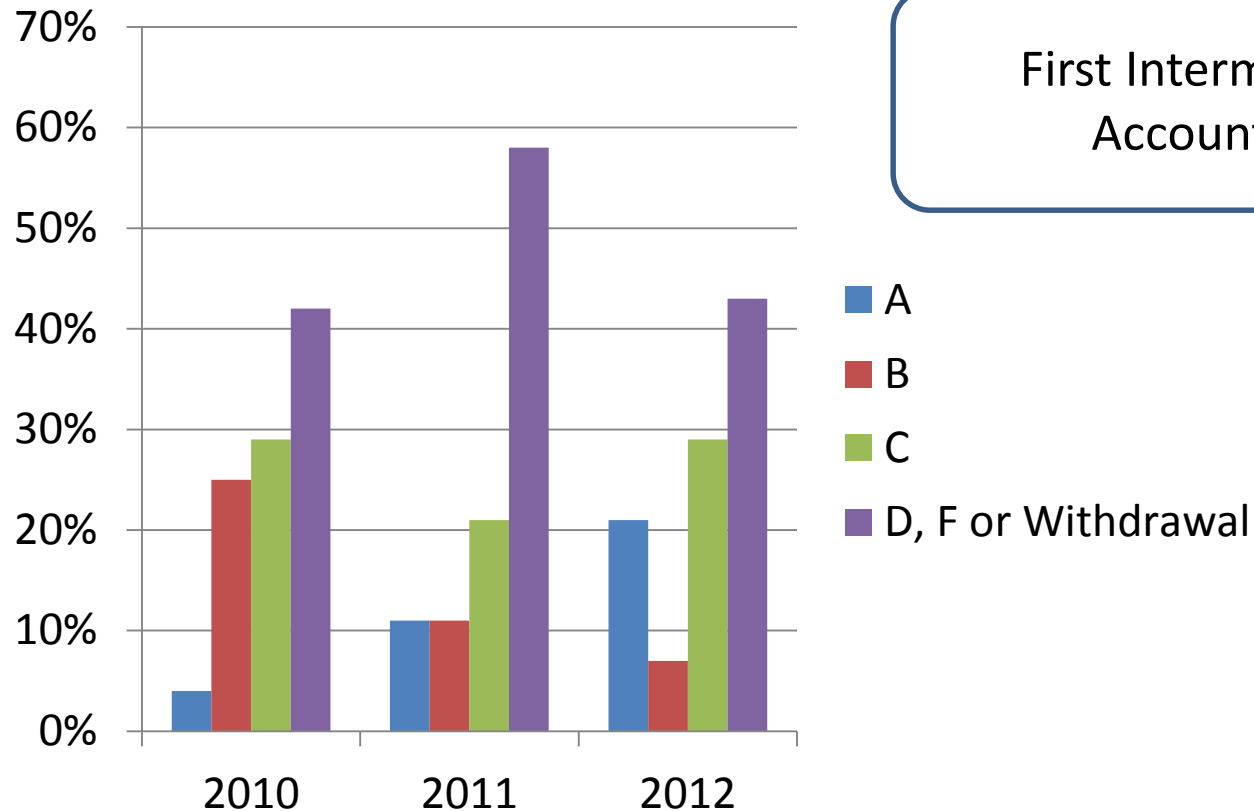
- The class took no energy
- I had a great time being in class
- Grades were outstanding (2.78 GPA)
- The students enjoyed the class

Teaching Evaluations



Scores for Fall 2013 – Advanced Accounting

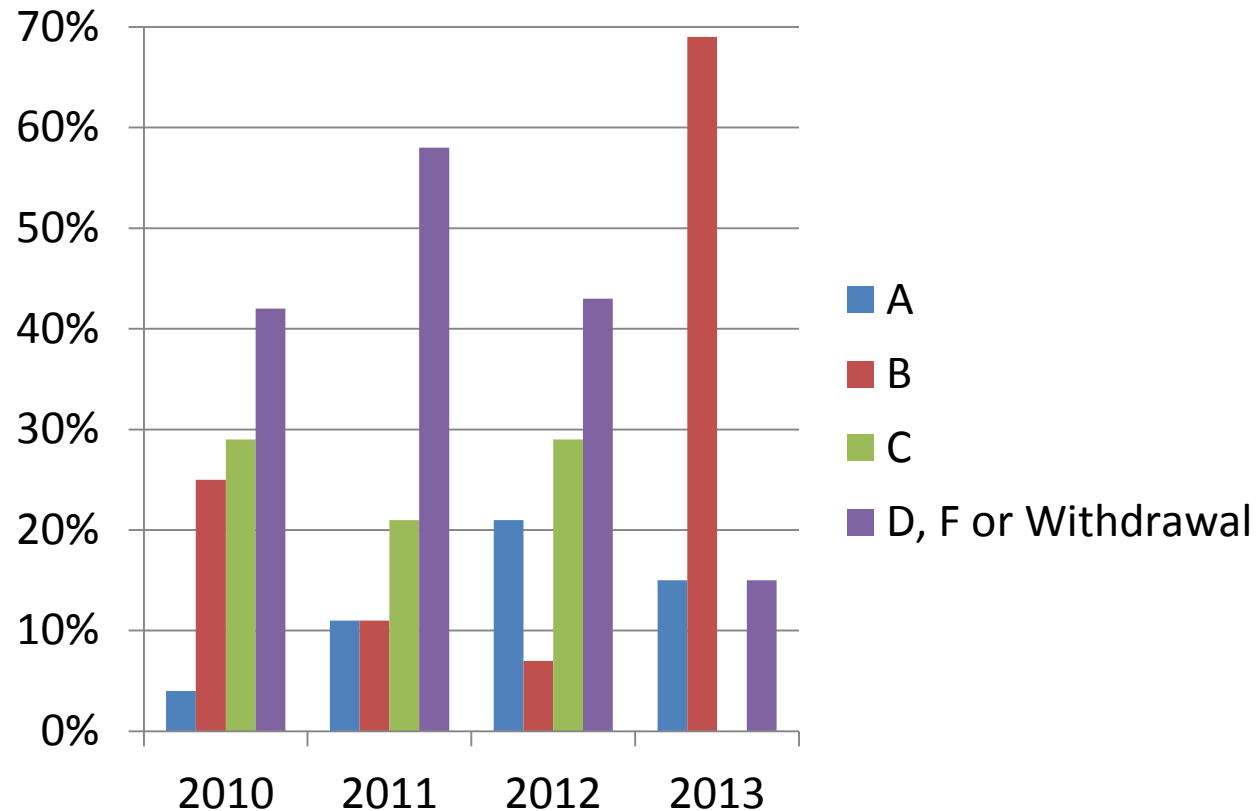
Impact on Summer Semester Grades



The summer semester is condensed into half of the time of a regular semester.

The sample size is very small (13-24 students) and results cannot be generalized.

Impact on Summer Semester Grades



This seems to indicate that the flipped classroom enables students to learn more in a condensed time period

The results for other semesters were similar, though not as dramatic

Cost of Flipping the Classroom

Must record the lectures

May have to produce additional problems

- Work some problems in class
- Work other problems for homework

Give up a lot of control in the classroom

- A good flipped classroom is chaotic

Attendance may drop

Assumptions Page 1 Page 2 Page 3 Page 4 Page 5 Page 6 Page 2 Solution Page 3 Solution Page 4 Solutions Page 5 Solutions ... + -

READY

Windows taskbar icons: Internet Explorer, File Explorer, VLC media player, Outlook, Excel, Word, PowerPoint, and Music.

	A	B	C	D	E	F	G
1	Accounting 420/5559						
2	Chapter 2 - Consolidations at the date of acquisition						
3							
4	Variables						
5							
6			Cash	65,000			
7							
8							
9	Diagnostics	ERROR!					
10				Dec. 31, 20X0	Dec. 31, 20X1	Dec. 31, 20X1	
11	Accounts payable			-	-	-	
12	Net income			-	-		
13	Assignment worksheets						
14	Separate incorporation			-			
15	Financial statement problem			-	-		
16	Worksheet						
17	Balance sheet - merger			-	-		
18	Balance sheet			-	-	10	
19	Consolidated income			-			
20	Investment in Subsidiary			-			
21	Entries			-			
22							
23							
24	Computations						

Assumptions
Page 1
Page 2
Page 3
Page 4
Page 5
Page 6
Page 2 Solution
Page 3 Solution
Page 4 Solutions
Page 5 Solutions
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←

READY

	A	B	C	D	E	F
5				Consolidation Entries		
6		Parent	Subsidiary	Debit	Credit	Consolidated
7	Sales	(538,000)				
8	Income from Sub	-				
9	Expenses	382,000				
10	Depreciation expense	80,000				
11	Net income	(76,000)				
12						
13	Beginning retained earnings	(117,000)				
14	Net income	(76,000)				
15	Dividends declared	17,000				
16	Ending retained earnings	(176,000)				
17						
18	Cash	125,000				
19	Other assets	923,000				
20	Equipment	1,411,000				
21	Accumulated depreciation	(481,000)				
22	Investment in Subsidiary	790,000				
23						
24	Goodwill	-				
25	Total	2,768,000				
26						
27	Accounts payable	(461,000)				
28	Other liabilities	(741,000)				

	A	B	C	D	E	F
4				Consolidation Entries		
5		Parent	Subsidiary	Debit	Credit	Consolidated
6	Sales	(538,000)				(538,000)
7	Income from Sub	-				-
8	Expenses	382,000				382,000
9	Depreciation expense	80,000				80,000
10	Net income	(76,000)	-			(76,000)
11						
12	Beginning retained earnings	(117,000)	(148,100)	148,100		(117,000)
13	Net income	(76,000)	-			(76,000)
14	Dividends declared	17,000				17,000
15	Ending retained earnings	(176,000)	(148,100)			(176,000)
16	Cash	125,000	65,000			190,000
17	Other assets	923,000	478,000			1,401,000
18	Equipment	1,411,000	731,000	164,000		2,306,000
19	Accumulated depreciation	(481,000)	(249,000)			(730,000)
20	Investment in Subsidiary	790,000	-		542,100	-
21					247,900	
22	Goodwill	-	-	83,900		83,900
23	Total	2,768,000	1,025,000			3,250,900
24	Accounts payable	(461,000)	(98,900)			(559,900)
25	Other liabilities	(741,000)	(384,000)			(1,125,000)
26	Common stock (\$1 par value)	(152,000)	(79,000)	79,000		(152,000)
27	Additional paid-in capital	(1,238,000)	(315,000)	315,000		(1,238,000)
28	Retained earnings	(176,000)	(148,100)			(176,000)
29	Total	(2,768,000)	(1,025,000)	790,000	790,000	(3,250,900)



My Concluding Comment

I cannot prove that the flipped classroom improves student achievement

But, I will never again use the traditional approach

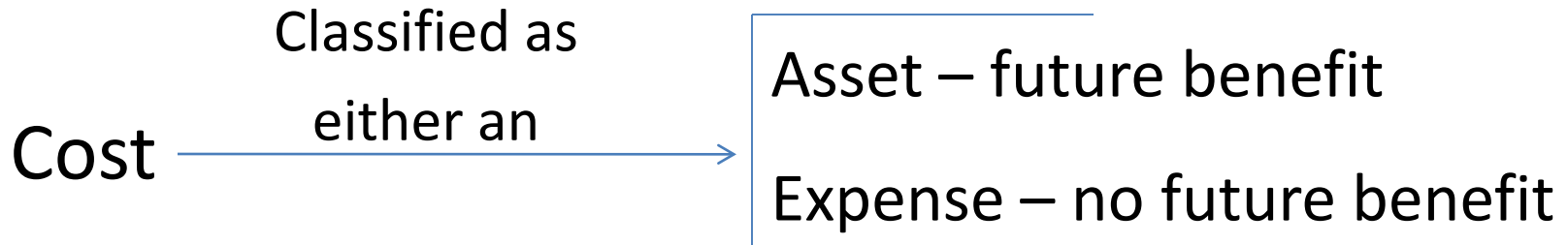
- Students ask me not to lecture in class
- It cuts down on their learning

Example of the Flipped Classroom

The following lecture would be recorded

- Available for students to watch
 - At their convenience
 - Outside of class
 - As often as they would like
 - They can skip around to parts of interest

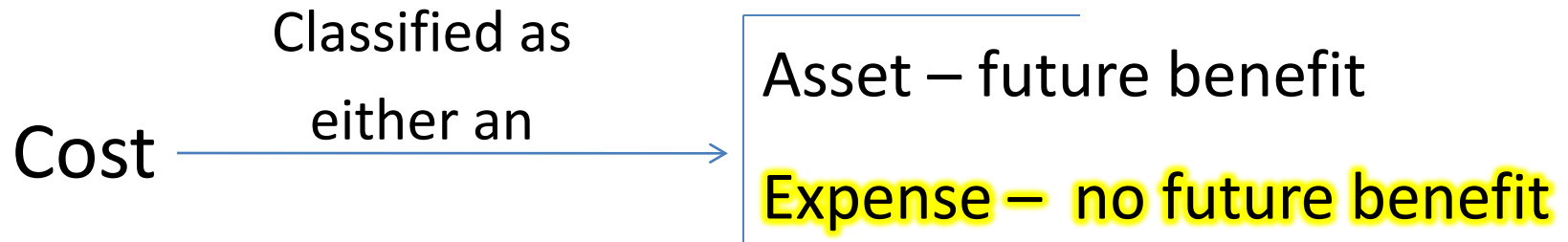
Classifications of Costs



The classification of costs can be determined by the impact the cost has on your stomach

- If the cost is incurred to buy an asset, your stomach is not upset
- If the cost is incurred for an expense, it is a bad feeling in your stomach
 - Because your net worth decreased

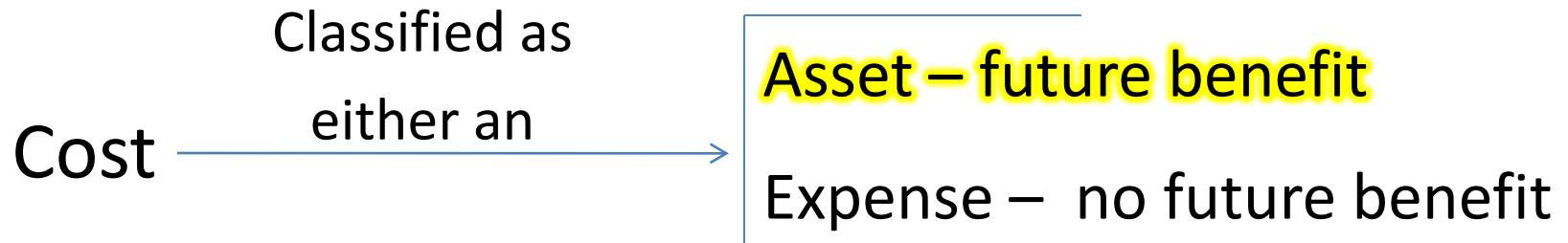
Taking the Family to Dinner



$$\begin{array}{ccccc} \text{Assets} & = & \text{Liabilities} & + & \text{Net Worth} \\ (\$50) & & & & (\$50) \end{array}$$

This is what my children think I am recording when I take them to a restaurant.

Taking the Family to Dinner



$$\text{Assets} = \text{Liabilities} + \text{Net Worth}$$

(\$50)

\$50

This is what I am actually doing when I take my children to a restaurant.

Class Exercise

You have started a new business and incur the following costs. Use the accounting equation to determine the ending balance of assets, liabilities, and owners' equity. Assume beginning balances of zero for the accounting equation.

Sales	200,000
Automobile	36,000
Gasoline	1,000
Salaries	48,000
Utilities	22,000
Insurance	18,000
Land	56,000

Class Exercise

Description	Assets	= Liabilities +	Net Worth
Total			

Class Exercise

Description	Assets	= Liabilities +	Net Worth
Sales	200,000		200,000
Cash paid for automobile	(36,000)		
Automobile	36,000		
Cash paid for gasoline	(1,000)		(1,000)
Cash paid for salaries	(48,000)		(48,000)
Cash paid for utilities	(22,000)		(22,000)
Cash paid for insurance	(18,000)		(18,000)
Cash paid for land	(56,000)		
Land	56,000		
Total	111,000	-	111,000

Class Exercise

- 1 What if the insurance covered a two-year period?
- 2 What if the gasoline was a prepaid debit card, three quarters of which has been used?
- 3 What is a problem with using this approach to keeping accounting records?
- 4 Is the automobile worth as much at the end of the year as it was when we purchased it?
- 5 Is the land worth as much at the end of the year as it was when we purchased it?
- 6 What if we only paid \$5,000 cash for the automobile and financed the remainder?
- 7 Is this a good (i.e., profitable) business?
- 8 If you decide to sell this business, what amount should you ask for it?

The Last Lecture

Randy Pausch, with Jeffrey Zaslow (2008)

“Ok, Professor Boy, what can you do for us?” Page 170

“Make a decision: Tigger or Eeyore.” Page 179

“...I don't know how not to have fun. I'm dying and I'm having fun. And I'm going to keep having fun ever day I have left. Because there's no other way to play it.”
Page 179

I'm Done



A Zamboni



The UMKC Zamboni

