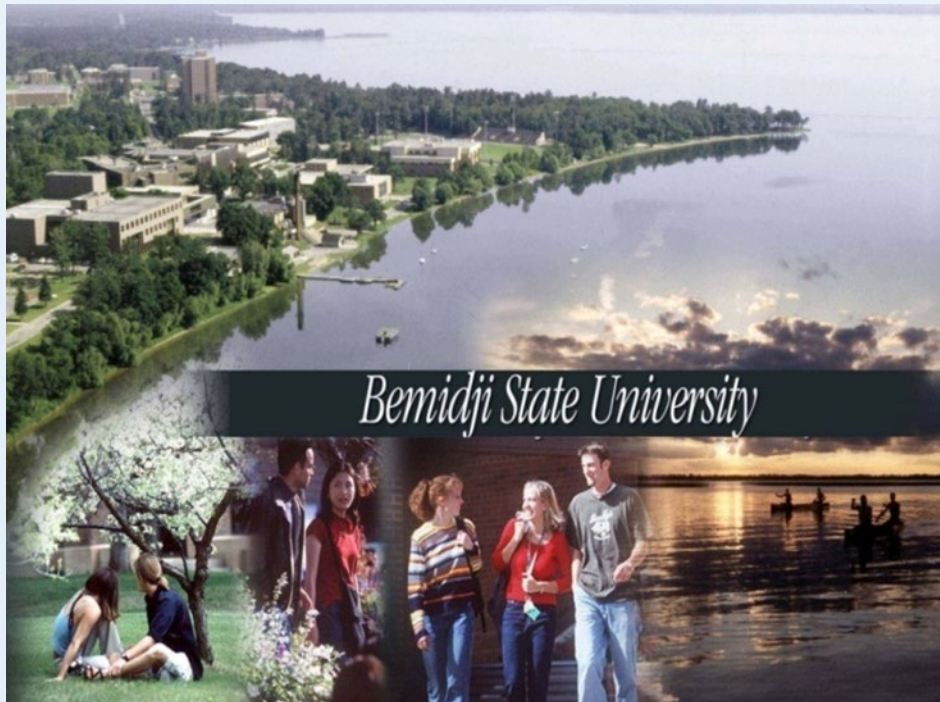


A First-Day-of-Learning Activity to Introduce and Organize the Semester's Topics in Financial Management



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IACBE 2022 ACAM

Costa Mesa, CA

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Call for Proposal and Brief Bio

Proposal Conference Areas

- Excellence in Business Education
- Teaching Techniques for Specific Business Topics

Presenter Background

- Student engagement
- Accreditation
- Assessment

Financial Management: BUAD 3771

- Survey Course for all Business and Accounting students
- **Only** Finance course for most Business and Accounting students
- **First** Finance course for Finance students
- **Integrates** prerequisites in Econ, Accounting, Stats
- Coverage:
 - Financial statements and Cashflow from Assets
 - TVM
 - Capital Budgeting
 - Capital Markets
 - Cost of Capital



Some of the challenges...

- Variation in student interest levels
- Heavy reliance on student ability to synthesize materials from prior courses
- Supporting students' movement between those high level and detail-level perspectives, effectively
- Challenge of keeping students actively engaged in learning

**Big
Picture**

Conceptual

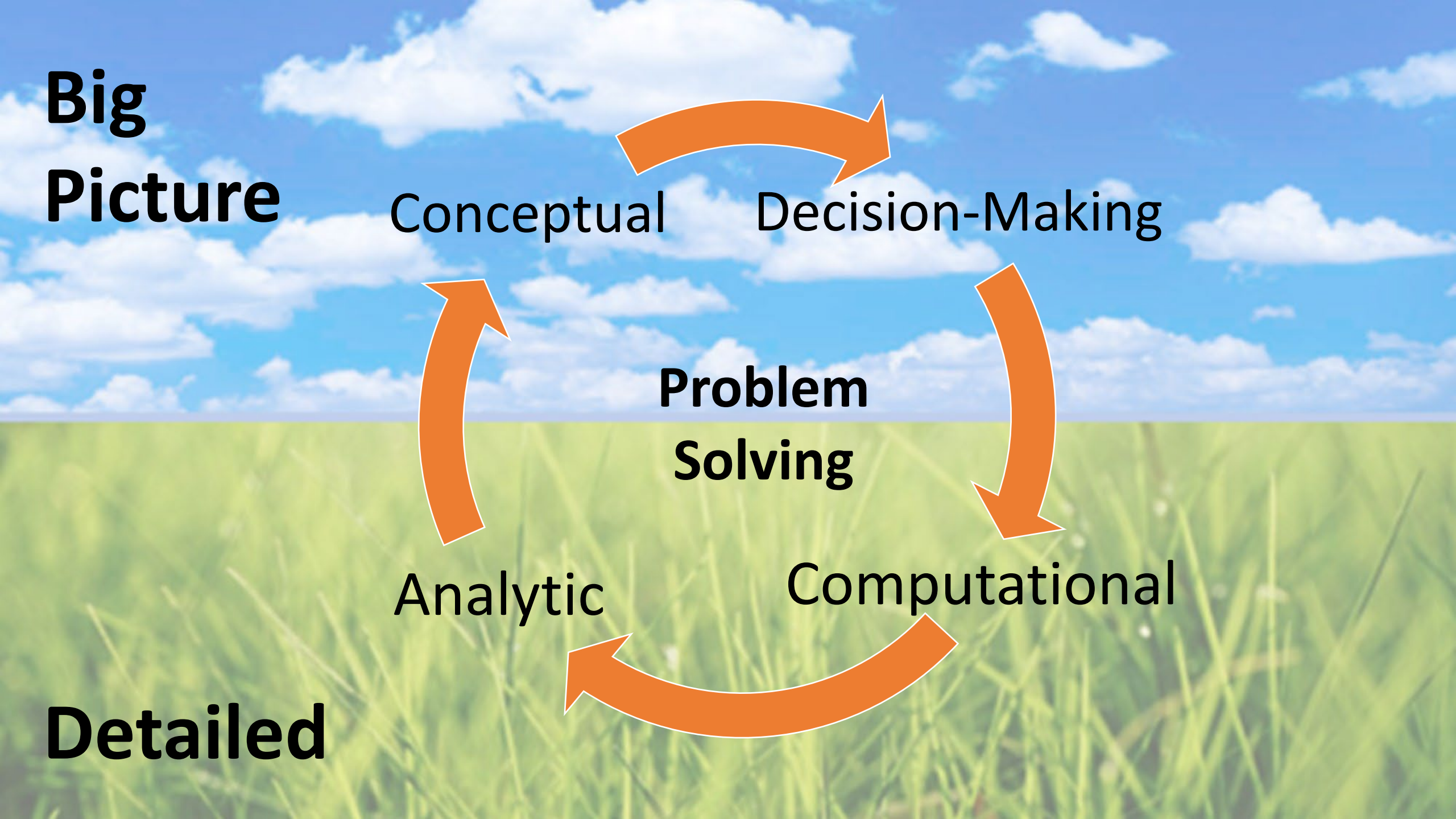
Decision-Making

**Problem
Solving**

Analytic

Computational

Detailed



What not to do... (from personal experience)

“And this semester, we will be covering the topics of...”

- The Overall Goal of the Firm
- Value Creation
- Income Statement, Balance Sheets, Depreciation, Taxes
- Cash flows from assets
- Time Value of Money
- Capital Budgeting techniques and considerations
- Cost of Borrowing and Cost of Equity
- Overall Weighted Average Cost of Capital

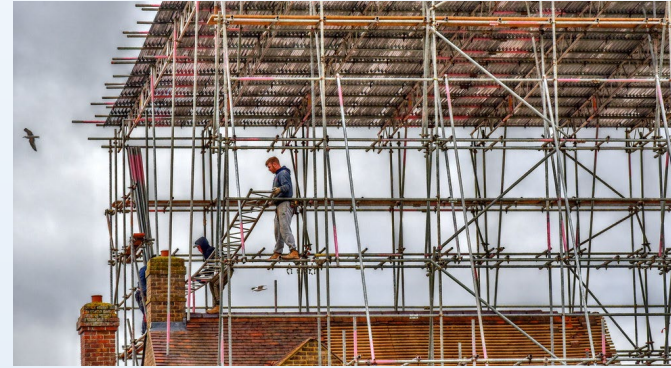


Hook and Ladder: Goals for the First-Day-of-Learning Activity



Set the Hook

- Spark interest
- Engage activity
- Help differentiate and integrate FM with other coursework

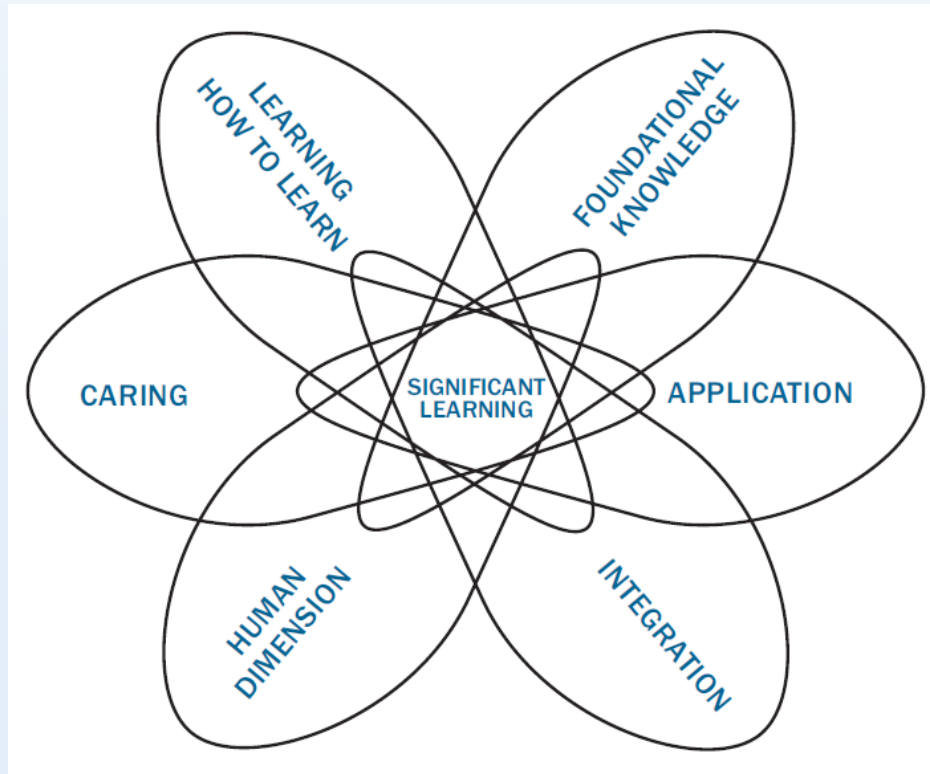


Scaffold Learning

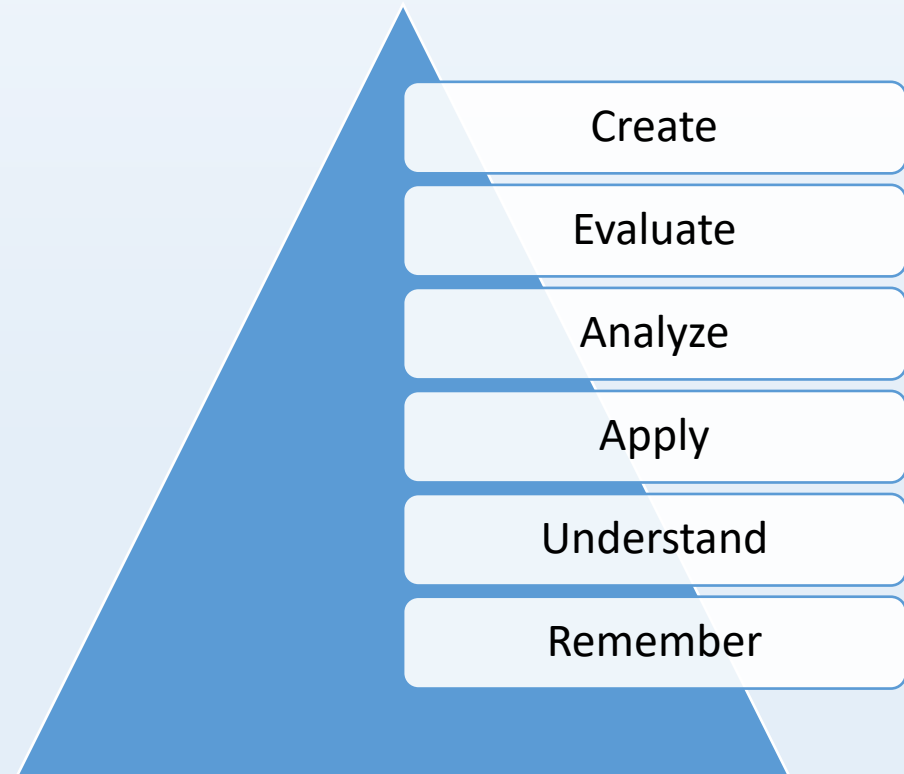
- From easy, Day-One, intuitive activity
- To complex computational decision-making process

Design Fundamentals: Fink's Taxonomy of Significant Learning

Fink's (2007) Taxonomy of Significant Learning

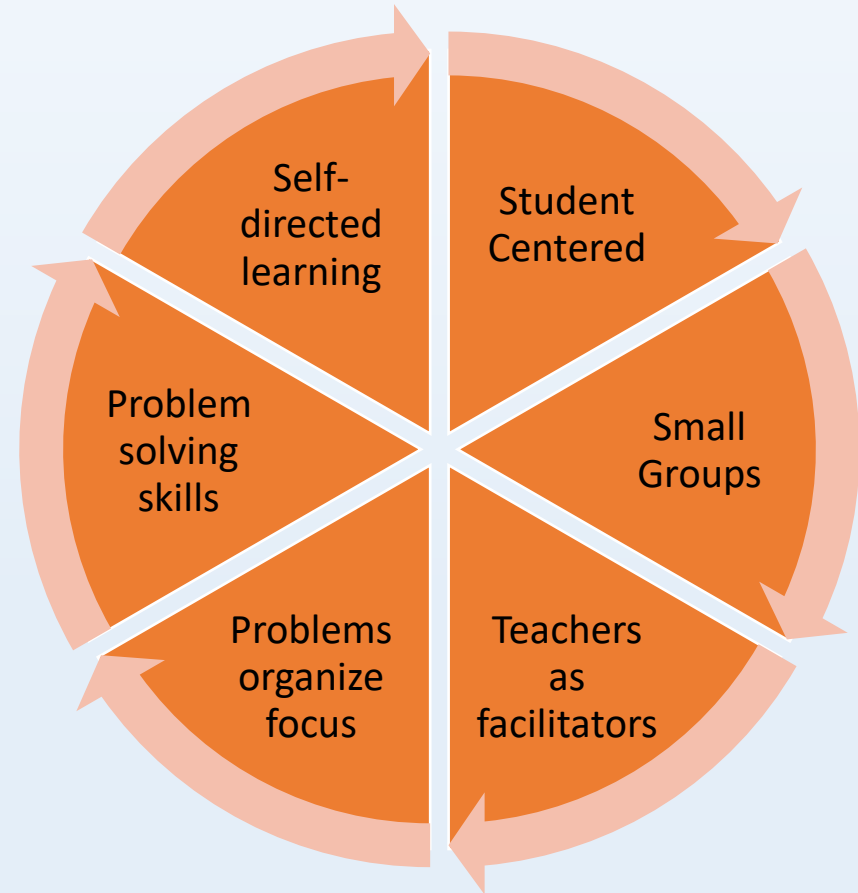


Bloom's (1956) Taxonomy of learning



A second design resource: Problem-Based Learning

1. Learning is student-centered
2. Learning occurs in small student groups
3. Teachers are facilitators or guides
4. Problems form the organizing focus and stimulus in learning
5. Problems are a vehicle for the development of problem-solving skills
6. New information is acquired through self-directed learning



(Burrows, 1996; Shawyer, 2005)



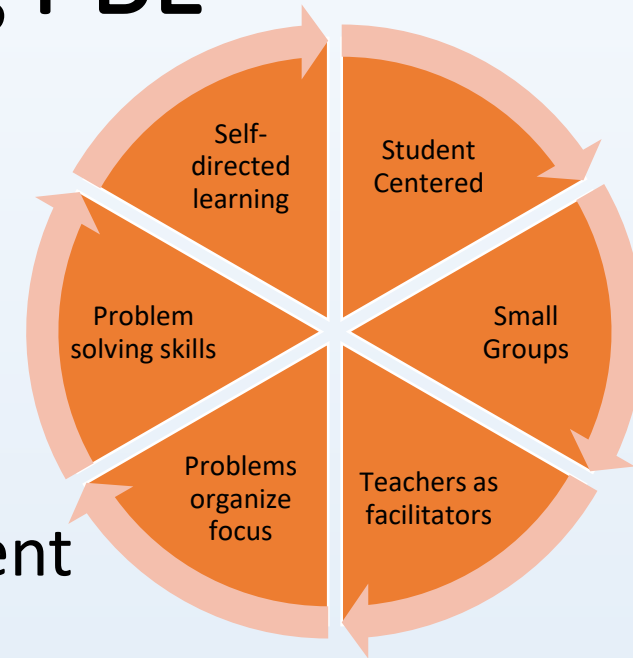
The Problem of “Growing the Business”

We have been approached by the owner of a local canine kennel business.

- *The canine kennel business is currently operating at full capacity. The owner wishes to “grow” their business to secure their financial future.*
- *The owner is not sure what they should focus on to ensure a sound decision.*
- *Options the owner is currently considering include:*
 - a) *increasing size of the facilities to increase number of animals they can kennel; and/or*
 - b) *charging a higher rate by perhaps adding enhanced services.*
- *The owner is also wondering if there are other options beyond these two.*

Design of the class activity: Modeling PBL

- Owner's problem serves to focus decision analysis
- Students encouraged to model big-picture/questioning
- Instructor models the detailed computations (with student assistance)
- Instructor helps students generate relevant questions
- Along the way, instructor notes the key finance topics as they are introduced as the problem-solving activity progresses





**Demonstration of First-
Day-of-Learning Activity**

Question: What should be the owner's focus or goal when making this decision?

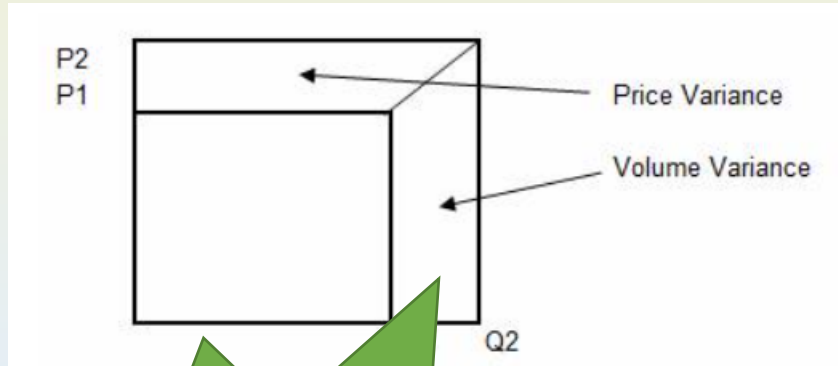
Without a goal to guide decision-making, how can one assess the quality of any decision?

Answers to this question lead to a fuller understanding of wealth and determinants of wealth.



Key Topic:
Overall Goal of
the Firm

Question: Are there other options beyond the two suggested by the owner?



Prior
Knowledge:
Accounting &
Economics

This question connections students to previous accounting and economic classes on prices, volume, revenue and profit.

It also highlights importance of how limited knowledge will limit possible solutions.



PBL: New information is acquired through self-directed learning

We need to ask for more details.....

The owner believes there is customer demand for a new service: providing owners the ability to watch their pets via webcam and video interfacing while their pet is boarded at the kennel. The kennel should be able to charge a premium rate. There will be upfront costs for the new technology and training.

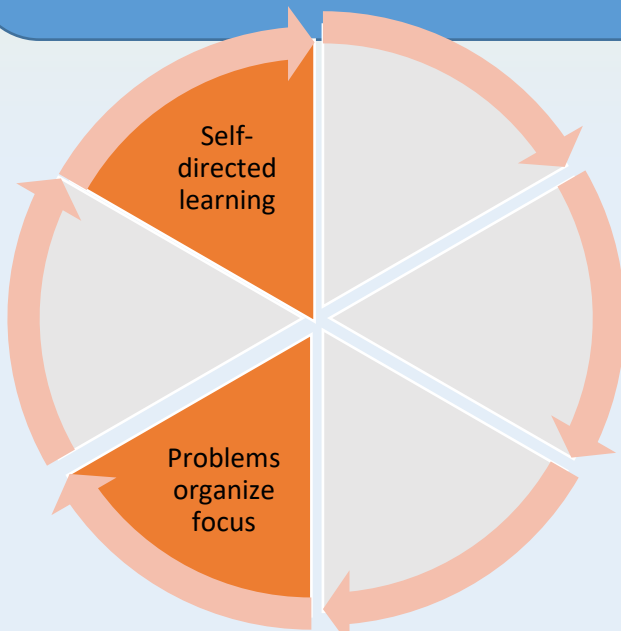
Question: How do we begin to estimate the numbers?

Remember when our econ prof said to ignore sunk costs?

Who remembers how to calculate straight-line depreciation?

I seem to remember from someplace that depreciation will save taxes

What, exactly, was meant by “incremental analysis” in cost accounting?



Class White Board

Goal: To increase the owners wealth

More Details are gathered/estimated:

By charging a premium rate for such service, the owner anticipates an increase in revenue of \$40,000 per year. Upfront cost for the new technology, installation and technical training is \$120,000. The new project is expected to have a five-year life. The business current tax rate is about 20%.

The beginning of number generation....

	1	2	3	4	5
Revenue	40,000	40,000	40,000	40,000	40,000
Depreciation	<u>(24,000)</u>	<u>(24,000)</u>	<u>(24,000)</u>	<u>(24,000)</u>	<u>(24,000)</u>
Earnings B/4 taxes	16,000	16,000	16,000	16,000	16,000
Tax (20%)	<u>(3,200)</u>	<u>(3,200)</u>	<u>(3,200)</u>	<u>(3,200)</u>	<u>(3,200)</u>
Net income	12,800	12,800	12,800	12,800	12,800
Depreciation	<u>24,000</u>	<u>24,000</u>	<u>24,000</u>	<u>24,000</u>	<u>24,000</u>
Operating Cash Flows	36,800	36,800	36,800	36,800	36,800

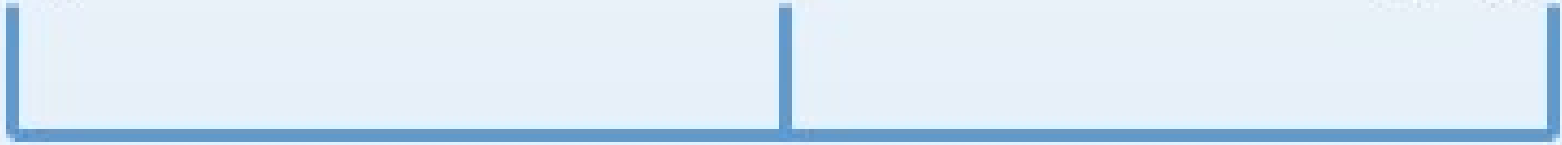
Question: Does it matter if the benefit won't happen for years to come but the owner's money needs to happen today?

Key Topic:
Time
Value of
Money

Today

1 Year

2 Years



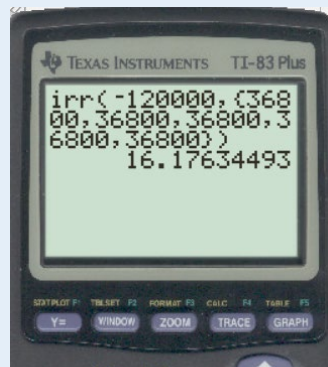
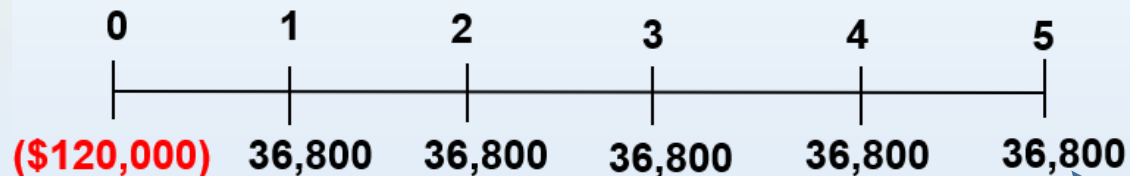
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Summary of Cash Flows:



16.2%

Key Topics:
Internal
Rate of
Return

Question: How will the owner finance the purchase of the new equipment?

Sometimes I pose the question back to the class...

If YOU had the resources to lend money to this owner for this expansion project,

- How much of the total cost would YOU be willing to lend?
- At what interest rate?
- How would you setting that rate?

Key Topics:
Risk and
Rates of
Return





PBL: New
information is
acquired through
self-directed
learning

We need to ask for more details, again.....

The owner is able to raise

- *\$40k, 5-year bank loan at 9% APY*
- *\$20k, 5-year loan from Mom at 6% APY*
- *\$60k cashing a part of their 401k which has been averaging a 10% return*

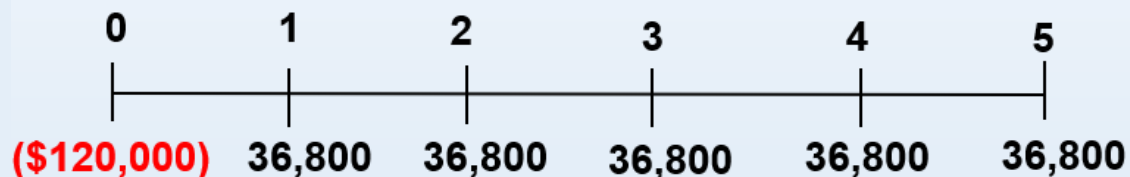
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Summary of Cash Flows:



Cost of financing estimated at:

$$\begin{aligned} & [40/120 * 9% * (1-.2)] + \\ & [20/120 * 6% * (1-.2)] + \\ & [60/120 * 10%] = 8.2\% \end{aligned}$$

Key Topics:
Weighted
Avg Cost
of Capital



The Final Analysis....

**Capital
Budgeting
Decisions**

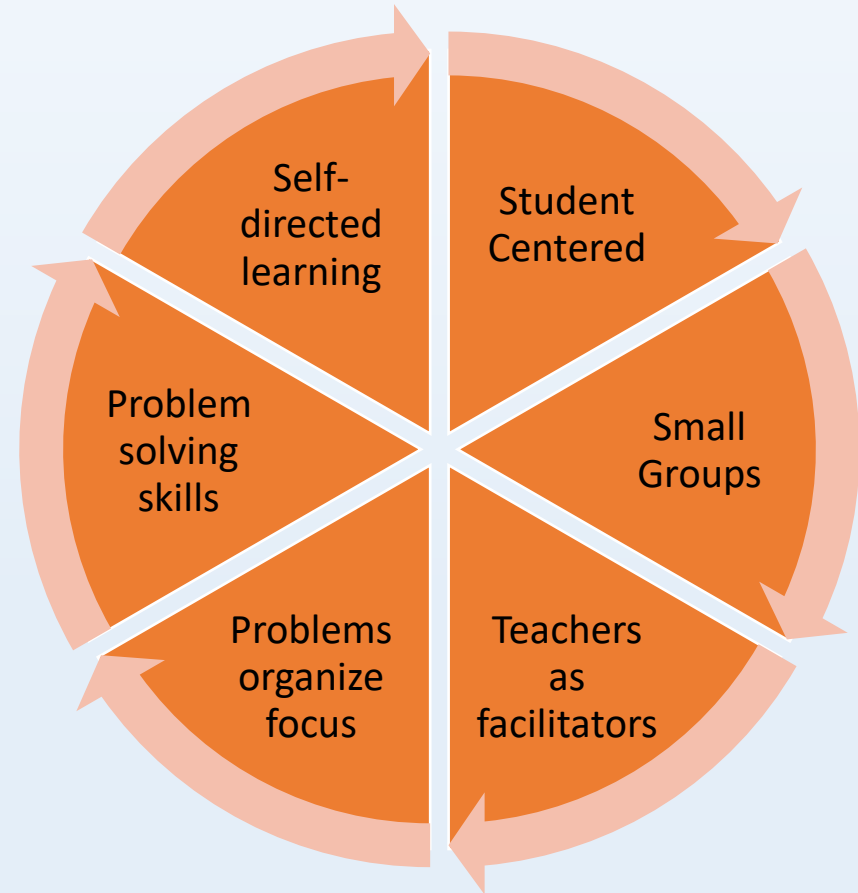
IRR=16.2%

**Financing
Decisions**

WACC = 8.2%


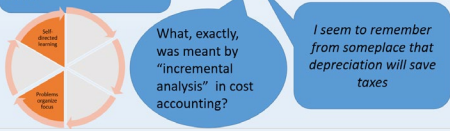
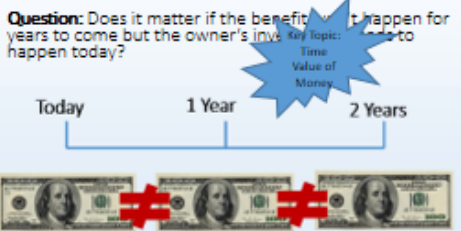

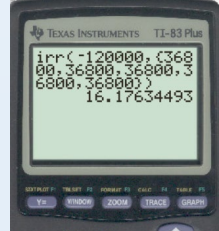
Reflecting upon: Problem-Based Learning

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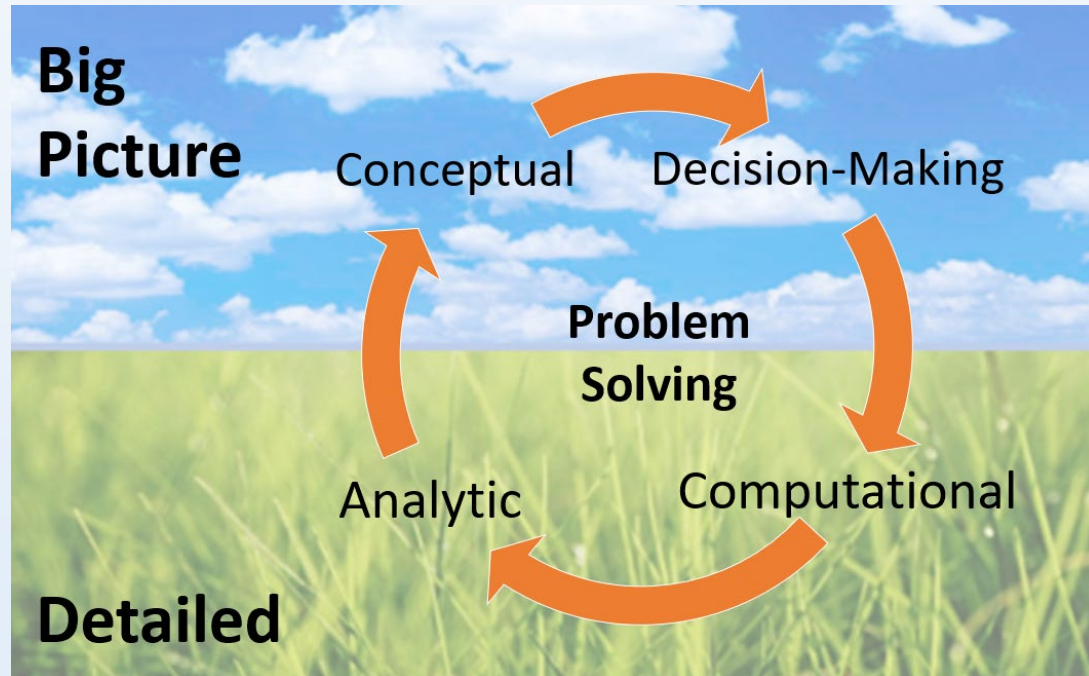


(Burrows, 1996; Shawyer, 2005)

Reflecting upon activity goals: Scaffold learning to later Financial Management topics

Goal of the Firm	Prerequisites	Cash Flows from Assets	Time Value of Money																																																
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Reflecting on learning promoted through First-Day Activity



- Intuitive understanding early in the semester may ground a “big picture” problem-solving perspective in the minds of students and serve as a guidepost to more complex topics and computations later in the semester.

Lessons learned

1

Have a plan,
Including a list of the
questions that will
guide the problem
solving

2

Consider a business
example that is
something most
students recognize

3

Keep student
involved! Call on
them. Use their
suggestions.

4

Keep it Fun! 😊

Discussion / Questions / Suggestions



How are you structuring your first day of class learning? Any recommendations on what is working for you?



Do you use Problem-Based Learning? Any insights?



How might similar activities be applied in other business courses?

Select references

Barrows, H. (1996). Problem-based learning in medicine and beyond: A brief overview. *New Directions for Teaching and Learning*, 1996(68), 3-12.

Bloom, B. S., ed. (1956). *Taxonomy of educational objectives. The classification of educational goals. handbook I: Cognitive domain*. New York: David McKay.

Fink, L. (2007). The power of course design to increase student engagement and learning. *Peer Review*, 9(1), 13-17.

Puntambekar, S. & Hubscher, R. (2005). Tools for scaffolding students in a complex learning environment: What have we gained and what have we missed? *Educational Psychologist*, 40(1), 1-12.

Reiser, B. (2004) Scaffolding complex learning: The mechanisms of structuring and problematizing student work. *Journal of the Learning Sciences*, 13(3), 273-304.

Shawver, T. (2015). Building student success using problem-based learning approach in the accounting classroom. *Journal of Instructional Pedagogies*, 17, 1-16.

Thank you

Questions or Comments?

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