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Applying the concept of alignment in a finance class.

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Applying the Concept of Alignment in a Finance Class

Presented at the Academy of Business Disciplines Annual Meeting,
Ft. Myers, FL

By Martina Schmidt , Ph.D.
November 8th, 2012



Outline

- I. Introduction & Purpose
- II. The Concept of Alignment
- III. Alignment of “Capital Budgeting Analysis”
- IV. Summary and Conclusion



I. Introduction and Purpose

- Mystery in higher education:
*professors are supposed to become teachers -
but are not being taught how to teach*
- Sources of teaching knowledge: experience, collaboration with colleges, workshops.
- QM Workshop: Concept of Alignment
- Goal: to help other instructors align their course



II. The Concept of Alignment

- Alignment:

the matching or linking of the *learning objectives* with the *instructional materials, the learner activities, the assessments, and the course technology!*

Learning objectives = the destination

Learning materials & learner activities = the elements that are needed to get to the destination

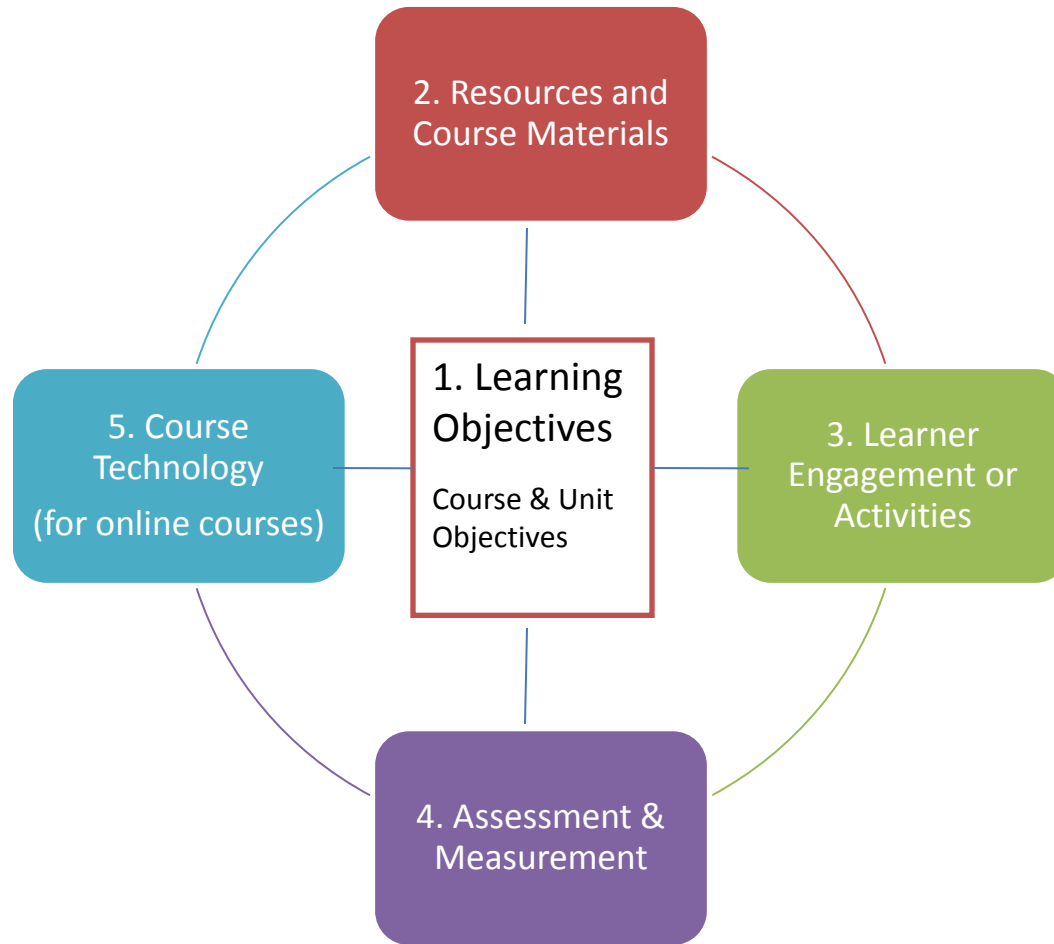
Assessment strategies = the tools to find out how effectively and efficiently you arrived at your destination

Course technology = the environment you are in



II. The Concept of Alignment

Visualization of the Concept of Alignment



*The concept of alignment demands a **holistic and integrated** view!*

III. Alignment in “Capital Budgeting Analysis”

Alignment of:

What? Capital Budgeting Analysis

Where? Online MBA Advance Financial Management Class

Next: Important observations, pointers, examples related to aligning

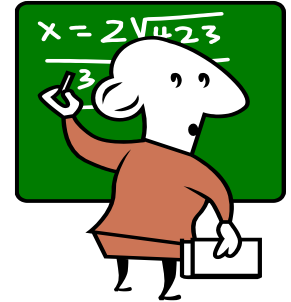
1. Learning Objectives
2. Course Materials
3. Learner Activities
4. Assessments
5. Course Technology



III. Alignment in "Capital Budgeting Analysis"

1. Learner Objectives

- **Course vs. Unit Objectives (Macro vs. Micro)**
- **Clear & Measurable**
- **Course Objectives Example:**



*Upon successful completion of **this course**, students should be able to:*

- a) **apply quantitative applications** to issues pertinent to financial management.
- b) go through the **analytical processes** utilized in financial decision making and apply them to business finance problems in order to **find a solution to the problem**.

- **Unit Objectives Example:**

*Upon completion of **this chapter's activities**, students will be able to:*

- a) Perform a financial investment analysis in Excel and determine if an investment is feasible.
- b) Be able to **create a financial model in Excel** that is "dynamic" and understand the benefits of such a model.
- c) Point out the **differences between a sensitivity, scenario, and break-even analysis** and be able to calculate and **interpret the results** of such an analysis.
- d) List some of the conclusions of a sensitivity analysis and explain how the conclusions can

help with **solving a business problem**.



III. Alignment in “Capital Budgeting Analysis”

2. Course Materials

- **Course materials:** reading assignments (book, articles), recorded PPs, tutorials, YouTube videos
- **Match** with the learning objectives!
(Don't teach dancing with a book!)
- **Example:** Camtasia Excel tutorial that matches unit learning objectives a) & b):
 - a) Perform a financial investment analysis in Excel and determine if an investment is feasible.
 - b) Be able to create a financial model in Excel that is “dynamic” and understand the benefits of such a model.



III. Alignment in “Capital Budgeting Analysis”

3. Learner Activities

- **Learner Activities:** Discussion forums, calculation assignments, case studies, self tests, papers, presentations.
- **Match** to learning objectives & course materials.
- **Example in my MBA Class: Multi-Part Case Study**

Part I: given textbook case study, I created an Excel template: student calculates the NPV, IRR and make an investment decision.

-> **Aligns with material (tutorial) & unit learning objective a)** ...Excel analysis, feasible?

Part II: student performs a sensitivity, scenario and break-even analysis, evaluates the results, and makes a recommendation.

-> **Aligns with material (tutorial) & unit learning objectives b), c) and d):**

b) ...financial model in Excel that is “dynamic” ...

c)differences between a sensitivity, scenario, and break-even analysis ...

d)solving a business problem...



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	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
1	Ch 6, p. 204, Case Study: Goodweek Tires, Inc.			Name:																
2																				
3	Assumptions:																			
4	R&D expense	\$10,000,000																		
5	Test marketing expense	\$5,000,000																		
6	Investment in equipment	\$140,000,000																		
7	Salvage value at end of year 4	\$54,000,000																		
8	Time of project in years	4																		
9	Depreciation rates for 7-year MACRS			Depreciation Schedule:																
10	year 1	14.30%		Year	Depreciation	Ending Book Value														
11	year 2	24.50%			1															
12	year 3	17.50%			2															
13	year 4	12.50%			3															
14	OEM Market:																			
15	Sales																			
16	Automobile production	5,600,000																		
17	Goodweek market share	11.00%																		
18	Sales growth rate	2.50%																		
19	Price	\$38.00																		
20	Replacement market:																			
21	Sales																			
22	Total market sales	14,000,000																		
23	Goodweek market share	8.00%																		
24	Sales growth rate	2.00%																		
25	Price	\$59.00																		
26																				
27	Variable cost	\$22.00																		
28	Growth rate of prices & variable co	4.25%																		
29	Fixed Costs (SG&A)	\$26,000,000																		
30	Growth rate of SG&A	3.25%																		
31	Tax rate	40.00%																		
32	Inflation	3.25%																		
33	Discount Rate	15.90%																		
34	NWC in year 0	\$9,000,000																		
35	NWC in years 1-3 as % of sales	15.00%																		
36																				
37																				

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	Year	0	1	2	3	4
37						
38	Year	0	1	2	3	4
39	Sales					
40	OEM Market:					
41	Units (grow at 2.5%)					
42	Price (grows at 4.25%)					
43	Total Sales OEM Market					
44						
45	Replacement Market:					
46	Units (grow at 2%)					
47	Price (grows at 4.25%)					
48	Total Sales Replacement Market					
49	Total Sales					
50						
51	- Variable costs					
52	Units (OEM + Replacement)					
53	Costs (grow at 4.25%)					
54	Total variable cost					
55						
56	- Fixed costs (SG&A) (grow at 3.25%)					
57						
58	- Depreciation					
59	EBIT					
60	-Taxes					
61	Net Income					
62						
63	OCF (=EBIT+dep-tax)					
64						
65	NWC					
66	change in NWC					
67						
68	Year	0	1	2	3	4
69	CF from Assets:					
70	Operating CF					
71	-Change in NWC					
72	-Capital Spending					
73	CF from Assets					
74						
75	Year	0	1	2	3	4
76	Cumulative non-discounted CF					
77	Discounted CF					
78	Cumulative discounted CF					

III. Alignment in “Capital Budgeting Analysis”

4. Assessments

- **Assessment tools:** Automated multiple-choice questions and rubrics for case studies, papers, presentations.
- Give clear instructions about the grading procedures and points that can be earned, provide the rubric and give feedback!
- Match to learning objectives, materials & learner activities
- **Example:**

Multiple choice questions (excellent to assess *basic understanding skills*)

“Calculate the NPV and IRR of the following cash flow...”

->Aligned with course material (reading assignments & PPs)

->Aligned with course learning objective a)

Rubric (excellent to assess *critical thinking skills*)

for Case study: Build a dynamic financial model

->Aligned with course material (Camtasia Excel tutorial)

->Aligned with unit learning objectives a), b), c), d)



III. Alignment in "Capital Budgeting Analysis"

4. Assessments – Sample Rubric

		Points and Levels of Performance					
Criteria	Weight	25 Excellent	20 Good	15 Marginal	0 Poor	Score	Comments
PART I: Calculations and Interpretations of NPV , IRR Objective a)	0.4	The student is able to perform all the necessary calculations in the basic capital budgeting analysis and correctly determines if the investment is feasible.	While the student is able to perform all the necessary calculations in the basic capital budgeting analysis, a few calculation errors occur in the model (for example a wrong cash flow sign is applied, a function is applied incorrectly, etc.).	The student makes some attempt to complete the basic capital budgeting analysis, but makes many errors and/or seems to be confused about the signs and timing of the cash flows.	The student does not perform any of the basic capital budgeting analysis.		
PART II: Calculations and Interpretations of sensitivity, scenario, break-even analysis Objective c) & d)	0.4	The student is able to perform all calculations in the scenario, sensitivity, and break-even analysis and correctly determines the sensitivities, expected NPV and the break-even level. In addition, the student is also able to interpret all the results correctly and can identify how the results can be used to make important business decisions.	While the student is able to perform all the necessary calculations in the scenario, sensitivity and break-even analysis, a few calculation errors occur in the calculations (for example, the sensitivity is calculated incorrectly) and/or makes a mistake in the interpretation of the results.	The student makes some attempt to complete the sensitivity, scenario and break-even analysis, but makes many errors and/or seems to be confused about the calculations and the interpretations.	The student does not perform any of the sensitivity, scenario, or break-even analysis.		
Is the Spreadsheet Dynamic? Objective b)	0.2	The student demonstrates excellent knowledge of what a dynamic spreadsheet is and applies correct formulas.	The student has a good knowledge of what a dynamic spreadsheet is, but makes a few errors that prevent the spreadsheet from being 100% dynamic.	The student seems unclear about what a dynamic spreadsheet is and makes many errors that prevent the spreadsheet from being dynamic.	The student has no knowledge about the functioning of a dynamic spreadsheet		
Weighted Average:						#####	



4. Assessments - Feedback

Barton James - Goodweek Tires, Inc [Compatibility Mode] - Microsoft Excel

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C41 $= (5600000 * 4) * 0.11$

	Year	0	1	2	3	4
Sales						
OEM Market:						
Units (grow at 2.5%)			2,464,000	2,525,600	2,588,740	2,653,459
Price (grows at 4.25%)			\$38.00	\$39.62	\$41.30	\$43.05
Total Sales OEM Market			\$93,632,000	\$100,051,644	\$106,911,435	\$114,241,550
Replacement Market:						
Units (grow at 2%)			1,120,000	1,142,400	1,165,248	1,188,553
Price (grows at 4.25%)			\$59.00	\$61.51	\$64.12	\$66.85
Total Sales Replacement Market			\$66,080,000	\$70,266,168	\$74,717,530	\$79,450,885
Total Sales			\$159,712,000	\$170,317,812	\$181,628,965	\$193,692,435
- Variable costs						
Units (OEM + Replacement)			3,584,000	3,668,000	3,753,988	3,842,011
Costs (grow at 4.25%)			\$22.00	\$22.94	\$23.91	\$24.93
Total variable cost			\$78,848,000	\$84,125,580	\$89,756,868	\$95,765,599
- Fixed costs (SG&A) (grow at 3.25%)			\$26,000,000	\$26,845,000	\$27,717,463	\$28,618,280
- Depreciation			\$20,020,000	\$34,300,000	\$24,500,000	\$17,500,000
EBIT			\$34,844,000	\$25,047,232	\$39,654,634	\$51,808,557
- Taxes			\$13,937,600	\$10,018,893	\$15,861,854	\$20,723,423
Net Income			\$20,906,400	\$15,028,339	\$23,792,781	\$31,085,134

Nina Schmidt:
Do not use numbers, use cell references in your calculations to make your model DYNAMIC!
Points: -2

Goodweek Tires Sensitivity a Sensitivity b Scenario Analysis Break-Even Analysis

Ready End Mode 90%

Microsoft Excel ... PP Applying the... Presentation No...

6:55 PM

III. Alignment in "Capital Budgeting Analysis"

5. Technology

- Medium of delivery for online classes, but important for most classes!
- Technology includes:
LMS, screen capturing software, testing and grading systems, virtual communication tools, video conferencing, etc.
- **Challenge:** keep up with new technology, don't be scared!
- **Match** to objectives, materials, activities and assessments. Is it helpful for students?



III. Alignment in “Capital Budgeting Analysis”

5. Technology

- **Examples:**

- Camtasia (by Techsmith) to create content*
for recording of PP lectures and Excel tutorial

- Blackboard/Canvas to create assessments*
for online self-testing, homework assignments

- Excel to create activities and assessments*
for case study & feedback *and* for rubric & calculating student scores

- Elluminate Live to create activities*
for virtual office hours, communication with students



IV. Summary and Conclusion

- Alignment is an important **teaching tool** and helpful in creating a **positive learning experience** for students.
- Takes a **holistic, integrative** view of a course. All parts of a course **fit together**.
- **Learning objectives** (course & unit): measurable and clear
- **Content & learner activities**: be creative
- **Assessments**: use **rubrics** for assessing higher level learning skills (note: state the learning objectives in the criteria).
- **Technology**: keep up with innovation; is it helpful for students?
- **Suggestion**: Check your course for alignment!
Tweak the course as needed.
Don't just copy publisher's learning objective.
Alignment takes time!



Enjoy the process of alignment!

