Excel-Based Active Learning in the Management Accounting Course

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What?

- Excel-based active-learning projects for the managerial accounting.
  - Job costing
  - Cost behavior
  - Budgeting
  - Flexible budgeting and variances
  - Segment performance evaluation
Why?

- Employers demanding Excel skills
- Preparation for any future career in business, not just accounting
- Pedagogical reason: hands-on, active, experiential learning rather than passive listening
- AACSB Accreditation: NEW Accounting Standard A7 (transition period 2013-2016)
Standard A7
(emphasis added)

• “Consistent with mission.... Accounting degree programs include learning experiences that develop skills and knowledge related to the integration of information technology in accounting and business.”

• “Accounting degree programs integrate current and emerging accounting and business information technologies throughout the academic curricula.”
Where?

- Flipped classroom
- In-class project to mix up a traditional lecture-based course (engages and prevents plagiarism if assigned outside of class)
- Online courses
- Out-of-class project
How?

- Individual
- Teams of two: each person does project but only one project submitted per team for a grade
- Provides peer support for
  - Different skill levels
  - Different versions of Excel and PC vs. Macs
Increased student engagement in class

- All students actively engaged
- Time flies by
- Students work at their own speed
- Peer-to-peer interaction
- Teacher and student interaction
- Personalized help
Designed for novice students

- Introductory students operate at lower levels of cognition (Bloom’s taxonomy)
- Often “don’t know where to start”
- Excel course not a prerequisite at our school
- Therefore, directional guidance provided
- “Mini-cases” using technology
1) Rate each project using a 1-5 scale:
“The __________project was a valuable learning experience.”

- 5 = strongly agree
- 4 = tend to agree
- 3 = neutral
- 2 = tend to disagree
- 1 = strongly disagree

2) Should I keep using the project? YES or NO?
Results of feedback (Fall 2013-Spring 2015)
4 semesters; n = 241

<table>
<thead>
<tr>
<th>Project</th>
<th>Average Rating (5 = high)</th>
<th>% saying YES to keep using project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job costing</td>
<td>4.07</td>
<td>96%</td>
</tr>
<tr>
<td>Cost behavior</td>
<td>4.03</td>
<td>90%</td>
</tr>
<tr>
<td>Personal budget</td>
<td>4.69</td>
<td>99%</td>
</tr>
<tr>
<td>Flexible budget and variances</td>
<td>4.22</td>
<td>91%</td>
</tr>
<tr>
<td>Segment performance evaluation</td>
<td>4.17</td>
<td>92%</td>
</tr>
</tbody>
</table>

- All rated useful as a learning experience
- All should be used again in future classes.
First question on last day of course

- “What were the most memorable take-aways from this class?”
- 43% said one or more of these projects (2013-2015)
Student comments

- “It was like we were really doing it in real life”
- “Real hands-on experience”
- “Helped me learn Excel”
- “Helped reinforce the material”
- “Helped me apply what we learned in class and understand the material better”
- “The projects helped a lot and showed real life scenarios”
Projects posted on website

- [http://tiny.cc/karenbraunprojects](http://tiny.cc/karenbraunprojects)
- Or- email at [karen.braun@case.edu](mailto:karen.braun@case.edu)

- Website contains:
  - Directions in Word (so that you can amend as you wish)
  - Excel files
  - Solutions
  - Grading rubrics
Thank you for your interest in the Excel-based projects for managerial accounting that I have with my own managerial accounting classes for at least two semesters and have received favorable feedback fairly detailed because many of my students have very limited Excel skills, while only a few students are using Excel 2010 for a pc, my students have been able to complete the projects using different versions of Excel. Users may have slightly different keystrokes at times from those printed in the directions. Students may help each other if they can't find the correct keystroke on their own.

Feel free to amend these projects as you desire. You may want to add, delete, or modify some of your wishes as you use these resources in your class. If you have any questions, feel free to reach me.

Sincerely, Karen W. Braun, CPA, PhD
1. Job Costing

- **GOAL:** Deepen understanding of job costing process using actual documents.
- **TIME REQUIREMENT:** 90-100 minutes
- Published in *Journal of Accounting Education*
- Starts with customer order
- Take it through production & sale
- Some judgment involved
- Critical thinking questions
- Hard copy (Word) or Excel
21 guided requirements

- Determine optimal batch size
- Schedule production (resource availability)
- Analyze overhead and compute MOH rate
- Determine RM to be ordered & place orders.
- Requisition DM (FIFO)
- Determine DL from labor time records
- Complete job cost record
- Compute gross profit on sale of units
- Critical thinking questions - use of different allocation bases, LIFO vs. FIFO, age of equipment, how to reduce costs, competitor’s price, etc.
- Journal entries (optional)
2. Cost behavior

- Goal: Learn to analyze cost behavior through scatterplots and regression equation using Excel
- Time: 75 minutes
- Given: Historical data on operating costs and two different potential cost drivers for a Limousine service
- Create scatter plots: look for outliers
- Insert and compare High-low line and regression lines
- Interpret R-square
- Which cost driver would be best for future cost estimates? Why?
3. Personal Budget

- **GOAL:** Engage students in the process of researching and estimating costs, making allocation decisions, calculating taxes, preparing a cash flow budget, and making budget cuts.

- **TIME REQUIREMENT:** Depends. Given one class period to work on it.

- Bea Sanders/AICPA Award honorable mention
Materials

- Direction packet, includes walk-through of taxes (FICA, local, state, federal).
- Excel budget template pre-formatted with expense categories and line items (they wouldn’t think of half of them)
- For first year after college (traditional students)
Personal Budget

- Step 1: Decide where you want to live
- Research starting salaries in the area
- Calculate basic taxes: directions and website links.
- Research housing/estimate other living expenses
- Savings (short term/emergency/retirement)
- NOTE: prior lecture on FICO scores and 401(k)/IRA
- Budget cutting ideas reflected in amended budget
- Reflection:
  - 1) what have you learned,
  - 2) compare personal vs. business budgeting
4. Flexible Budgeting

- GOAL: Learn to create master and flexible budgets using budget assumptions that ripple through the entire budget. Program and analyze U/F variances.
- TIME REQUIREMENT: 75-100 minutes
- Given budget assumptions and actual results
- Create master budget performance report
- Create flexible budget performance report, with volume variance and flexible budget variance.
- Management by exception: given investigation rule
- Interpret report; Compare to client’s story.
## Assumptions and investigation rule

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Budget assumptions:</strong></td>
<td></td>
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<tr>
<td>Volume</td>
<td>21,000 cases</td>
<td></td>
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<tr>
<td>Sales Revenue</td>
<td>$ 50.00 per case</td>
<td></td>
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<tr>
<td>Percent sold on credit</td>
<td>90% percent of sales</td>
<td></td>
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<tr>
<td><strong>Variable Expenses:</strong></td>
<td></td>
<td></td>
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<tr>
<td>CGS</td>
<td>$ 35.00 per case</td>
<td></td>
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<tr>
<td>Sales Commission</td>
<td>$ 2.50 per case</td>
<td></td>
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<tr>
<td>Shipping Expense</td>
<td>$ 2.00 per case</td>
<td></td>
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<tr>
<td>Bad Debt Expense</td>
<td>1.00% percent of credit sales</td>
<td></td>
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<tr>
<td><strong>Fixed Expenses:</strong></td>
<td></td>
<td></td>
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<tr>
<td>Salaries</td>
<td>$ 50,000</td>
<td></td>
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<tr>
<td>Lease on Distribution center</td>
<td>$ 17,000</td>
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<tr>
<td>Depreciation on fleet &amp; Equip</td>
<td>$ 12,000</td>
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<tr>
<td>Advertising</td>
<td>$ 10,000</td>
<td></td>
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<tr>
<td>Office rent, phone, internet</td>
<td>$ 11,000</td>
<td></td>
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<tr>
<td><strong>Management by exception</strong></td>
<td></td>
<td>15% Investigation rule</td>
</tr>
</tbody>
</table>

5. Segment Performance Evaluation

- **GOAL:** Find, analyze, and compare the segment (division) performance for an actual company.

- **TIME REQUIREMENT:** 60-90 minutes

- Directions guide students in finding information in the 10k, creating tables, creating graphs, critical thinking questions.
Segment performance

• PepsiCo, Marriott, Starbucks, Apple (4-6 divisions each)
• ROI, sales margin, capital turnover vary widely
• What do statistics mean? How would you improve?
• Resource allocation decision
Questions?

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- http://tiny.cc/karenbraunprojects