

LESSONS IN MANAGERIAL ACCOUNTING FROM A SERVICE LEARNING PROJECT AT A LOCAL SOUP KITCHEN

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ABSTRACT

This paper describes a service learning project developed to enhance the coverage of costing concepts in an introductory Managerial Accounting course. The assignment entails a service learning fieldtrip where students help prepare a meal at a local soup kitchen and use actual financial data from the nonprofit organization to identify cost behavior, calculate the cost of a meal, and perform some basic CVP analysis. Comparison of scores on pre- and post-tests suggests the service learning assignment enhances students' understanding of managerial accounting. More specifically, mean post-test scores significantly increased fifteen percent over pre-test mean scores after completion of the service learning project, as opposed to in a control group which showed no significant improvement in mean test scores over the same time period without the service project activity. Furthermore, feedback from survey data suggests students value the opportunity to engage in service learning that draws linkages between textbook material and the real world, while showing students how they can make a difference in the lives of others less fortunate than them.

KEY WORDS: Service learning, managerial accounting, cost behavior, cost accumulation, cost volume profit analysis

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INTRODUCTION

The core concepts covered in most introductory Managerial Accounting courses include cost behavior, cost accumulation, and cost-volume-profit (CVP) analysis. Students' understanding of these concepts is essential for students to master more complex topics such as segment margin, budgeting, and relevant cost analysis. Textbook problems oversimplify the complexity of these concepts, as the real world application is not as simple as it appears. One way for students to appreciate the difficulty of these concepts is for them to work with actual financial data and apply the concepts covered in class to this "real world" data. This active learning assignment requires students to participate in a service trip to a soup kitchen where the students learn about the services provided by the soup kitchen, engage in conversation with the soup kitchen's clients, and help prepare a meal. See Table 1 for a summary of student performance on the service learning assignment. The second part of the assignment requires students to use actual cost data provided by the soup kitchen and classify costs by behavior (variable, fixed) and type (direct materials, direct labor, manufacturing overhead), calculate the average cost of a meal prepared at the local soup kitchen, perform basic breakeven analysis, and complete a written assignment requiring reflection on the service trip. We use a pre- and post-test to examine whether the use of the service learning project increased students' performance on the key costing concepts. Overall, both the student survey data (Table 2 and Table 3) and the post-test scores (See Table 4) suggest this service learning activity deepens students' understanding of cost concepts by demonstrating the complexity of this task in a way that cannot easily be captured by textbook problems or cases, while simultaneously engaging students in connecting with the community. Furthermore, students in our control group showed no statistically significant improvement in post-test scores suggesting that the hands-on experience enhanced learning (See Table 4).

The remainder of this paper includes a brief review of the literature, a summary of the assignment material provided to students, teaching notes for the assignment including learning objectives and in-depth guidance on implementing this assignment into a course. The final sections of the paper provide student feedback data and concluding remarks.

LITERATURE REVIEW

Over the past two decades, service learning activities have become a popular form of experiential learning on the campuses of many colleges and universities. "Service-learning is a form of experiential education in which students engage in activities that address human and community needs together with structured opportunities for reflection designed to achieve desired learning outcomes" (Jacoby, 1996). The AACSB emphasizes the importance of active learning (AACSB, 2013) to enhance students' critical-thinking skills and research to date reports numerous benefits to service learning activities in particular. For instance, Eyster and Giles' (1999) study identified a greater impact on outcomes involving higher-order thinking skills, such as greater depth of understanding, consideration of other perspectives, improved communications, and an ability to apply course materials to new settings. McCarthy and Tucker (2002) suggest an additional benefit of service-learning is reconnecting the universities and communities, while Cohen and Kinsey (1994, p.31) conclude that service-learning "carries the promise of success in its potential to transport the student beyond the limiting cultural bounds of the text/lecture forms of the campus and outward into the larger social context".

Furthermore, Hocking (2008) argues that service-learning pedagogy is warranted due to the lack of relevancy and connection between traditional course materials and the "real world."

The literature concurs that service learning exercises provide relevance in general business education curriculums. More specifically, Sims (2001) implemented a service learning assignment in a business ethics course finding without a service learning activity the course lacked relevancy. Harrington and Schibik (2004) suggest a statistics course is more relevant if learning is extended into the business community while Lamb, et al., (1998) notes the connections to the business community creates further opportunities for internships. Additional benefits noted include the development of self-esteem, personal efficacy and sense of responsibility, ethical/moral values, willingness to take risks and accept new challenges, higher critical thinking and decision making, and problem solving skills (Black 2002). Development of these skills is an excellent byproduct of service learning activities.

The accounting education literature contains numerous examples where service learning activities have been implemented into accounting courses. The most popular application of service learning in the accounting curriculum is the Volunteer Income Tax Assistance (VITA) program where colleges and universities partner with the Internal Revenue Service in the preparation of income tax returns for low income individuals. The VITA program is an example of *direct service* and several discussions of this program exist in the literature [For example, See Carr (1998), Milani (1998), Oestreich, et al. (1998), Strupeck and Whitten (2004), and Hocking (2008).] Carr (1998) explains traditional course work tends to provide all the necessary information and suggested answers to students, but participation in the VITA program helps students learn how to filter out and gather appropriate and necessary information to find answers without direction from a textbook or solutions manual. Students also note the importance of human interaction skills learned and the need for flexibility while volunteering in a VITA program. Other examples of direct service learning activities incorporated into accounting courses include DeBerg's (1998) use of the Students in Free Enterprise (SIFE) program where Principles of Accounting students teach business literacy to at-risk youth, and Pringle's (1998) intermediate accounting students who provide money management workshops to adults in homeless shelters.

On the other hand, Zamora (2012) describes *indirect service* as occurring when "students work on improving the operations and cost efficiencies in a mission-driven organization that directs resources to a population in need." Other studies falling into this category include Lenk's (1998) students conducting research to provide information systems' best practices and an internal control guide to small non-profits; Woolley's (1998) students assisted in the budget process, prepared tax filings, created donor databases, and improved accounting procedures; while Gujarathi and McQuade's (2002) intermediate accounting students assisted in various accounting functions from bank reconciliations to general ledger support documentation and helping move from manual to automated systems. Still and Clayton (2004) employed a system related activity that included internal control analysis and process documentation, along with a review of accounting procedures. Tschoop's (2004) students assisted in designing a written business plan for a local non-profit organization and sought to address the development of competencies listed in the Core Competency Framework created by the AICPA.

The use of service learning projects in management accounting courses has been limited. Chiang (2008) implemented a service learning activity in her management accounting course in which students provided strategic financial analysis to improve operations of a community farm supplying food to low income families. She also shared a domestic violence program that used student feedback to help estimate the actual cost of forming counseling and advocacy teams to help maximize funding from state resources. However, Chiang did not provide specific details

about these service activities, rather only general findings to encourage similar projects. Chiang's major objective was to show how incorporating structured reflective activities in service learning projects help students make better connections between the service experience and course content. We utilized these "reflective" ideas in our project (e.g., follow up surveys) to enhance the project's meaningfulness to our students. Our project described in this paper employs a service learning activity to reinforce the core managerial accounting course concepts of cost behavior, product costing, and CVP analysis. Instead of being passive observers in this experience, our students participated in providing the actual service to the clientele, thus enriching the overall unique experience. Lamb, et. al (1998) caution that lack of connection to mission is often a barrier to successful integration of service-learning in many business schools, but as noted later, this activity is highly encouraged at our school and aligns nicely with our mission.

ASSIGNMENT MATERIAL

The assignment material for this active learning assignment consists of the following:

1. A one page handout with 7 managerial accounting questions for students to answer and an Excel Template containing a list of costs for a sample period of time. This one-page handout also includes 3 reflection questions.
2. Grading rubric: A rubric for the managerial accounting assignment and the reflective written exercise. The rubric sets the tone and expectation level of the assignment.

This complete set of assignment materials is provided in Exhibits 1, 2, and 3.

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Exhibit 1

Assignment

On October 27th we visited a soup kitchen and helped prepare a meal for the organization serving lunch to many needy, unfortunate people – great job! The goals of this project are to open your eyes to the world where there are many people not as fortunate as we are, give back to the community, practice some of the managerial accounting concepts we have been discussing in class, and hopefully have some fun along the way.

Nonprofit organizations are faced with the same fiscal pressures as business and industry and therefore it is very important that these organizations manage and control costs. The attached spreadsheet contains “real world” data of the costs of the Kitchen and Dining Room for the soup kitchen for the month of September. The soup kitchen serves lunch only on Friday, Saturday, Sunday, and Monday of each week (4 meals per week).

In this assignment, you are asked to implement what we have learned about cost behavior, cost accumulation, and cost-volume-profit analysis to answer these questions. Finally there are 3 reflection questions for you to answer. These reflection question answers will be graded and will be forwarded to the soup kitchen, as the organization is interested in the feedback you provide. Please be honest, for my grading purposes there are no wrong answers.

From the attached cost data spreadsheet, please complete your answers to the following questions in the Excel template provided.

1. Label each of the costs as either variable or fixed.
2. Calculate the total direct materials, direct labor, and manufacturing overhead costs for the month of September.
3. During the month of September the soup kitchen served 2,617 meals, what is the average cost per meal?
4. Many nonprofit organizations calculate and disclose the dollar value of the services they provide to the community. If each of the meals served in September had a market value of \$7.00 and the government reimbursed the soup kitchen \$7.00 per meal, what would be the contribution margin per meal?
5. Most of the food used by the soup kitchen is donated to the organization, thus the reason for the very low food expense on the attached spreadsheet. The average direct product cost for most restaurants is 30% of selling price. Given the 30% variable cost percentage, what would be the contribution margin per meal given the \$7.00 sales price of a meal?
6. Given the information cited in #4 above, how many meals must the soup kitchen serve in a given month to breakeven?
7. Given the information cited in #5 above, how many meals must the soup kitchen serve in a given month to breakeven?

Reflection after Service

1. Was there something, in particular, that struck you, concerned you, or touched you at your visit to the soup kitchen? Be as specific as possible.
2. How did you feel while you were at the soup kitchen? Can you describe any emotions you felt?
3. So what? Do you think that this experience will have any impact on your thoughts or actions in the future? How?

Exhibit 3
Grading Rubric: Service Learning Assignment

1=not present 2=weak/not clear 3=satisfactory 4=good 5=outstanding					
Classify each of the Face to Face Kitchen & Dining Room costs as Variable or Fixed. (Question #1) (Learning Objective #2)	1	2	3	4	5
Classify each of the costs as direct materials, direct labor, or manufacturing overhead and Calculate the total direct materials, direct labor, and manufacturing overhead costs for the month of September. (Question #2) (Learning Objective #2)	1	2	3	4	5
Calculate the average cost of the meal (Question #3) (Learning Objective #3)	1	2	3	4	5
Contribution margin per meal using actual Face to Face variable costs (Question #4)	1	2	3	4	5
Contribution margin per meal using 30% variable cost percentage. (Question #5) (Learning Objective #4)	1	2	3	4	5
Breakeven point using the contribution margin per meal derived from using actual Face to Face variable costs (Question #6) (Learning Objective #4)	1	2	3	4	5
Breakeven point using the contribution margin per meal derived from using the 30% variable cost percentage. (Question #7) (Learning Objective #4)	1	2	3	4	5
Was there something, in particular, that struck you, concerned you, or touched you at your visit to Face to Face? Be as specific as possible. (Reflection Question #1) (Learning Objective #1)	1	2	3	4	5
How did you feel while you were at Face to Face? Can you describe any emotions you had? (Reflection Question #2) (Learning Objective #1)	1	2	3	4	5
So what? Do you think that this experience will have any impact on your thoughts or actions in the future? How? (Reflection Question #3) (Learning Objective #1)	1	2	3	4	5
Grammar and Clarity – does it need to be reread; does it cause confusion for the reader, is it well-organized?	1	2	3	4	5
Comments:					

Table 1
Summary of Student Performance

Panel A:

	Mean	Std Dev	Median	Min	Max
Service Learning Assignment	91.07	10.36	96.00	66	100

Panel B:

Performance Criteria Based on Service Learning Assignment Score	Number of Students	Percentage of Students
0-74: does not meet expectations	3	10%
75-92: meets expectations	8	27%
93 & above: exceeds expectations	19	63%

Table 2
Student Survey Responses

Survey Questions:	Frequency distribution				Mean	Standard deviation	Median
	1	2	3	4			
1. This Service Learning Assignment helped me to apply what I have learned about cost behavior (variable vs. fixed cost).	0	0	16	11	3.41	.50	3
2. This Service Learning Assignment helped me to apply what I have learned about determining the cost of a product.	0	0	17	10	3.37	.49	3
3. This assignment helped me understand how overhead is allocated.	0	2	13	12	3.37	.63	3
4. This Service Learning Assignment helped me to apply what I have learned about CVP analysis.	0	1	14	12	3.41	.57	3
5. This service learning assignment helped me to understand better the required lectures and readings.	0	4	16	7	3.11	.64	3
6. I learn course content best when connections to real-life are made.	0	1	10	16	3.56	.58	4
7. The service aspect of this course helped me to see how the Managerial Accounting concepts I learned can be used in everyday life.	0	0	11	16	3.59	.50	4
8. This assignment was challenging.	2	15	7	3	2.41	.80	2
9. I have a responsibility to serve my community.	0	1	6	20	3.70	.54	4
10. This service learning assignment made me more aware of problems in the community.	0	1	7	19	3.67	.55	4
11. As a result of this service learning experience, I have a better understanding of my role as a citizen.	0	1	12	14	3.48	.58	4
12. The service aspect of this assignment showed me how I can be more involved in my community.	0	0	14	13	3.48	.51	3
13. This service learning assignment enhanced my ability to work with others.	0	5	14	8	3.11	.70	3
14. This service learning assignment developed insight into personal strengths and weaknesses.	0	7	11	9	3.07	.78	3

Scale: strongly disagree = 1, disagree = 2, agree = 3, strongly agree = 4

Table 2 (continued)
Student Survey Responses

Survey Questions:	Frequency distribution				Mean	Standard deviation	Median
	1	2	3	4			
15. This service learning assignment heightened my self confidence.	1	11	10	5	2.70	.82	3
16. This service learning assignment increased my desire to stay in college.	1	7	7	12	3.11	.93	3
17. Integrating community service into coursework should be encouraged in other courses.	0	0	11	16	3.59	.50	4
18. This service learning assignment improved my relationship with faculty.	0	6	13	8	3.07	.73	3
19. Generally, I would prefer to have more assignments of this nature in my classes.	0	1	15	11	3.37	.56	3
20. The service aspect of this course made me more aware of my own biases or prejudices.	2	11	8	6	2.67	.92	3
21. The service I did through this assignment was not at all beneficial to the community.	17	5	2	3	1.67	1.04	1
22. This service learning assignment made me more interested in performing community service.	0	1	17	9	3.30	.54	3
23. This service learning assignment gave me a sense of pride and accomplishment.	0	1	15	11	3.37	.56	3

Scale: strongly disagree = 1, disagree = 2, agree = 3, strongly agree = 4

Table 3
Sample of Student Comments

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- *This trip showed how simple it is to help people.*
 - *This service trip has encouraged me to volunteer more in the future.*
 - *These types of assignments directly correlate with the University's mission.*
 - *This trip and assignment bring awareness to the importance of community service.*
 - *This assignment not only helps the community but helps you learn a topic in the course.*
 - *The experience helped me realize the importance of volunteering and community service.*
 - *The assignment successfully incorporated community service with relevant class material.*
 - *Positive experience.*
 - *While it was a fun and eye opening experience, it is sad to see people in that condition. Being able to help the less fortunate is rewarding and I will do it again.*
 - *It was a great opportunity to see the community around the school and see people who are in need.*
 - *This experience has encouraged me to be to become more active with community service.*
 - *I realized that it does not take much time or effort to impact another person's day.*
 - *This assignment helped me learn the material.*
 - *It has inspired me to volunteer more.*
 - *This assignment made me realize that I am fortunate for all that I have and gave me a reason to want to do more to give back.*
 - *More instructors should use this assignment as it brings awareness to the students that have never volunteered before.*
 - *It is an eye-opening experience.*
 - *I believe that this experience has heightened my desire to partake in service around my community.*
 - *This assignment gets students out of the classroom and gives students a more hands-on learning experience.*
 - *It made me realize how easy and close opportunities to help others are around me. It also showed me how small of an action can go such a long way.*
 - *I am thankful for this experience.*
 - *This experience caused me to want to do more community service.*
 - *This assignment helps out the community and gives you a better perspective on life.*
 - *It felt great helping the less fortunate by preparing a meal.*
 - *The assignment put the concept into real life perspective while helping others and working on a team.*
 - *The assignment related class material to real life situations and creates a link that a student never forgets.*
 - *This was different type of assignment and was very much beneficial.*
 - *This trip has made me want to get more involved with the less fortunate.*

Table 4
Summary of Pre- and Post-Test Scores

Service Learning Class	Mean	Std Dev	Min	Max
Pre-test Scores	14.34	5.55	5	24
Post-test Scores	18.22	5.53	9	25
Change in Scores	3.88	4.38	-6	12
Control Class				
Pre-test Scores	16.19	3.84	9	20
Post-test Scores	16.44	2.84	10.5	20
Change in Scores	0.25	3.45	-6.0	6.5