

# USING RCD MODEL IN EVALUATING COMMUNITY-ENGAGEMENT LEARNING EXPERIENCES IN AN ACCOUNTING INFORMATION SYSTEMS COURSE

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## ABSTRACT

The community-engagement learning has been playing a major role in the fields of higher education in recent years. When accounting education needs to prepare students in dealing with unstructured problems and working on gaining real world experiences, it would be helpful to design a curriculum and implement learning processes through experiential learning, community service learning, and project-based collaborating learning. This paper is to evaluate the community-learning experiences by using information system analysis techniques in an Accounting Information System course. Sixty participants completed a survey after finished their community-learning project. The qualitative data provided information of participants' learning experience and reflection about the real world community project. The quantitative data provided information of participants' beliefs about the real world community project.

**Keywords:** Community Engagement, System Analysis, Accounting Information Systems

## INTRODUCTION

Accounting programs across the country have been challenged to better prepare students for the accounting profession. In contrast to the traditional approach to accounting education that stressed calculating one right answer, the new focus emphasizes dealing with unstructured problems and dealing with preparing students with practical experiences through experiential learning, community service learning and project based collaborating learning. The Accounting Education Change Commission (AECC) notes that students should be active participants in the learning process and not passive recipients of information.

A pedagogic model of Relate-Create-Donate that proposed in accounting curriculum to enhance students' learning experiences has been explored. In this model, students need to work collaboratively to produce ambitious projects that are meaningful for someone outside the classroom. These three components, Relate-Create-Donate, imply that learning activities:

1. occur in a group context (i.e., collaborative teams);
2. are project-based;
3. have an outside (authentic) focus.

The first principle (the "Relate" component) emphasizes collaborative efforts that involve communication, planning, management and social skills. The second principle (the "Create" component) makes learning a creative, purposeful activity. Students have to define the project (problem domain) and focus their efforts on application of ideas to a specific context. Project orientation is the essence of Problem-Based Learning approaches that are often used in medical and others types of professional education (Barrows & Tamblyn, 1980). The third principle (the "Donate" component) stresses the value of making a useful contribution while learning. Ideally,

each project has an outside "customer" for whom the project is being conducted. In many cases, the projects can be work-related, i.e., an activity that fits into teams' occupational or career interests. The authentic learning context of the project increases students' motivation and satisfaction. This principle is consistent with the emphasis on school-to-work programs in many school systems and colleges, as well as the "service" philosophy of contemporary corporate training efforts (Jacoby & Associates, 1996).

Research articles had mentioned considering the use of experiential community learning to promote this Relate-Create-Donate model and this process would be better to be accomplished through a course-based, credit-bearing educational experience. Therefore, we have designed and developed a community-based assignment in an Accounting Information Systems course our Accounting undergraduate program. This assignment requires students to (1) participate in an organized service activity in such a way that meets identified community needs and (2) reflect on the service activity in such a way to gain further understanding of course content and skills, a broader appreciation of the discipline, and an enhanced sense of civic responsibility.

Accounting Information Systems II (AIS II), is a junior level course which studies the Accounting Information System (AIS) as an integral component of an enterprise. The emphasis of this course is focuses on the topics of accounting processes, data modeling and database design of accounting systems using the Resources-Events-Agents (REA) framework and computer-based system analysis and modeling tools as the springboard toward the analysis and design of an enterprise accounting information systems. In addition, the internal controls and risk management implications of building accounting systems were discussed. The community-based AIS study project will be assigned. Students are required to apply the concepts and tools they learned from the textbook to work on the real-world student led accounting information systems analysis projects.

This course has been proven to be popular among students in developing career enhancing skills and abilities, and increasing student self-confidence and employability, all while providing useful products for the community in the past. Since its inception, the quality and difficulty of the projects and the satisfaction of the sponsoring organizations has been consistently increasing. We envisioned that the popularity of the courses and it's practical learning results can probably be attributed to its design is based on a long history of widely accepted community-engaged project based learning theories.

However, although the potential benefits of this course design based on these principles are, in theory, significant, so are the risk. Projects in this course would be considered successful from the students' perspective only if they truly integrate and enhance their traditional academic experiences; and as a minimum from the community's perspective, they can be considered successful only if they add value to that organization. We believed that assessed learning objectives that are not met up to the expectations of either students or organizations would not, in actuality, be considered successful. That is, while the learning theories supporting this course design are significant, their learning results need to be carefully measured and assessed.

## **THE STUDY**

### **Course Description and Project Requirements**

The Accounting Information Systems II course is a second AIS course in our Accounting curriculum after students finished the AIS I course which covers the basic accounting processes in different foudamentaion transaction cycles. It will use information system analysis techniques with REA ontology framework and approach, which looks at the relationship between an organization's critical resources, events, and agents to help students study, analyze and document the real world Accounting Information Systems. REA, developed by Bill McCarthy of Michigan State University,

is a framework for creating an enterprisewide database that can be used to retrieve information for multiple business purposes. The students were asked to drill down the high-level value system view to the more detailed value chain level and to illustrate how the transaction cycles fit together to form the value chain which enables students to see the "big picture". Then the course will prepare students (1) understand the underlying concepts, terminology, tools, and techniques of systems analysis, (2) be able to design and conduct interviews with system owners and users to determine business requirements, (3) document how the systems worked and develop feasibility assessments and study reports.

The primary learning goals of this course include:

- (1) Understanding the evolution of accounting information systems and five transaction cycles.
- (2) Being able to use systems analysis and documentation techniques including developing user interview questionnaire, developing analysis diagrams such as document flowcharts, data flow diagrams, and systems flowcharts to understand and evaluate existing systems and the potential enhancement design of new systems.
- (3) Being able to describe the relational database model as used in accounting and contrast it with the traditional accounting model.
- (4) Implement an REA model of a specific transaction cycle in a relational database. Being able to identify issues and solutions involved model data of a specific transaction cycle and its related relational database design.
- (5) Understanding the internal control and risk management implications of building accounting systems with a database.

A comprehensive community-based accounting information system analysis project will be given as a final project that students need to conduct a real world AIS study. By following the discussion of their textbook and class discussion, students should learn the importance to conduct System Analysis by following the REA enterprise ontology approach. System Analysis is the process of examining an existing information system and its environment to identify problems and for its potential improvement. Through this real world community engagement project assignment, the course will enable its goal to help students develop intellectual skills, professional practical skills, and transferable key skills. In order to document and analyze how the current AIS operates, the students were requested to prepare a report that students need to

- (1) describe the business/industry the organization is operating in.
- (2) identify purpose and objectives of the current system.
- (3) identify users of the current system.
- (4) analyze the business aspects of the current system.
- (5) identify and analyze the accounting information systems functions provided by the current system.
- (6) identify and analyze the components and processes of the current accounting information system.
- (7) identify and analyze the potential risks and internal controls implemented of the current accounting information systems.
- (8) use the analysis and documentation tools and skills they learned in this class to document their understanding about how the systems worked.

Through these community engagement projects, both specific learning objectives for this course and broader learning objectives implemented in the undergraduate Accounting curriculum which included but not limited to develop the ability of critical thinking, analysis and synthesis, the ability to identify assumptions, evaluate statements in terms of evidence, to detect false logic or reasoning, to identify implicit values, and to define terms adequately and to generalize appropriately with

effective problem solving and decision making skills. At the same time, students will develop an appetite for reflective, adaptive and collaborative learning with the interpersonal skills for effective listening, negotiating, persuasion and presentation.

## Methods

The participants in this study were undergraduate students studying at a public university in the United States of America. The sample involved a total of 60 students (53% female and 47 % male). Eighty-four percent of the participants were younger than 30 years old. All participants either majored in accounting (95%) or in Finance/Business Management (5%). Seventy-one percent of the participants were in their senior year while 27% of the participants were in their junior year. The participants were diversified. (See Table 1)

Table I. The Race and ethnicity background

Ethnicity Background	Percentage
African-American	5%
American Indian or Alaskan Native	6.7%
Asian	20%
Caucasian	56.7%
Hispanic/Latino	3.3%
More than one race	8.3%

The research instrument was a survey questionnaire which included three sections: Demography, Likert scales and open-ended questions. Seven items were included in the demography section, thirteen items were in the Likert scale section and there were three open-ended questions. The survey was given to the participants after they have completed their courses and finished their team-based community engagement projects. In this paper, the preliminary results which included only demography and open-ended questions one and two were analyzed.

The data was organized and coded separately by each researcher. Each answer from participants was reviewed, meaningful comments were identified and labeled with a code. Throughout data analysis, categories began to emerge. The researchers met after the independent coding process. Each code was clarified and any discrepancies were noted, discussed and then validated. Therefore, each category was not created until mutual agreement was reached between researchers. Throughout the process of categorizing, Lincoln and Guba (1985) recommend that the researcher make categories as unambiguous as possible. They state, "Categorizing can be accomplished most cleanly when the categories are defined in such a way that they are internally as homogeneous as possible and externally as heterogeneous as possible" (p. 349).

## Preliminary Results

Research question one: What did you like most about this field study project?

There were three categories have been identified.

1. Real World Project through Hands-on Service Learning(55.3%)  
Fifty-five percent of the participants indicated that the real world project is a great way in understanding the content knowledge and make the learning more meaningful. One quoted

mentioned *"I really enjoyed being able to investigate a company and really see what is going on."* Another participants reported, *"Hands on experience. Working on an actual case is fun and very rewarding. Also I like that we are assisting people in our community."* *"It requires you to go in depth about the industry you're working with and also allows you to learn a lot because it's all hands-on."* *"It put all the material from the class into one situation which made it more understandable."* *"I really enjoyed being able to investigate a company and really see what is going on."*

2. Understanding local businesses and building the connections (25.5%)

Around twenty-six percent of the participants reported that they liked most about this projects was to learn about the local businesses and the building connection with their professionals.

3. Problem solving (21.3%)

Twenty-one percent of the participants revealed that finding a solution for the company they studied and helped, made them feel excited. The comment quoted included *"I liked the complex problems presented in this case that cannot be found in a textbook."*

Research question two: Please list three items/skills that you have learned from this project. There are six categories have been identified.

1. Problem solving and critical thinking skills (96%)

Ninety- six percent of the participants indicated that they have learned problem solving and critical thinking skills through working on this project. Participants mentioned that they have learned how to analyze an accounting system in a company context and to provide a solution based on the study results.

2. Accounting system analysis skills and tools(74%)

Seventy-four percent of the participants mentioned that they had learned how to use the system analysis software MS Visio to draw the analysis diagrams and understood how actual AIS system worked; they also liked the research aspect of an integrated AIS.

3. Communication and collaboration skills (52%)

Fifty-two percent of the participants reported tthat they have learned a better communication skills to talk to the real business people, especially through the interview process. They also mentioned that team work is one of the most important skills for helping them to complete this project.

4. Risk management and internal control (40%)

In this castegory, forty percent of the participants mentioned one of the important skills they have learned from this project was understanding the threats to an AIS and its organization and how a business to design and implement internal controls. They also learn how difficult for smaller firms to segregate duties. In addition, the participants reported that they learned the processes of auditing steps and what the control environments are and how the computer fraud factors affected an AIS.

5. Time management and planning skills (20%)

Twenty percent of the participants reported that they have learned how to manage time and planning for the project procedures when working on this project. Participants mentioned that this is a time consuming and complex project comparing to other typical class assignments so it's important to plan everything in advance and use the time wisely for completing this project effectively.

## 6. Professionalism (6%)

Six percent of the participants mentioned that they have learned how to use professional manner while they are working on this project with their sponsors, interviewees, and team members.

## CONCLUSION

Based on this sample of learning result discussion, we have found that students' feedback reflected the learning goals we set up for the course were achieved through this community engagement project. As we described earlier, further analysis will be conducted on the other collected data including quantitative data analysis and future work will be followed with a complete learning results assessment.

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