

Developments In Business Simulation & Experiential Exercises, Volume 22,1995

USING TQM PRINCIPLES TO TRANSFORM ACCOUNTING SYSTEMS INTO AN EXPERIENTIAL EXERCISE

Michael P. Bradley, Augusta College
Carol M. Bruton, University of San Diego
Gary P. Schneider, University of San Diego

ABSTRACT

Accounting curriculums have been under attack for their lack of student involvement in real-world business situations. The accounting systems course was envisioned as a capstone course that would develop a broader business outlook in accounting students by combining their skills from previous accounting courses to generate a total accounting system for a business. The accounting systems course has, however, generally only progressed from a technical discussion of computer hardware and applications to merely using a software package to enter data and retrieve accounting statements. This paper reports the development of an experiential approach to the accounting systems course that forces the students to interact with users of systems to see the connection between the accounting system and the information system. The TOM principles of customer focus, process, and continuous improvement are used to guide the experiential exercise and the development process of the students' projects.

INTRODUCTION

The problem of the general inadequacy of accounting education and the need to redirect it in the 1990's has been formally recognized since the American Accounting Association (AAA) Committee on the Future Structure, Content and Scope of Accounting Education issued its report almost nine years ago [AAA 1986]. The predominate theme of the criticisms of that committee was that accounting graduates are parochial in their view of accounting and its relation to business and society. Specifically, the committee found the graduates lacking in personal skills of communication, creative and logical thinking, and interpersonal relations. The technical skills deficiencies were primarily related to understanding the dynamics and psychology of organizational management structures and systems including the impact of accounting information in the formulation of goals, strategies, and policies [Bedford and Shenkir 1987].

The implementation of the scope and content recommendations would require a proactive role by the students rather than the current reactive role. The instructional changes would require more interaction with

faculty, case analysis, role playing, and formal and informal communication assignments. To facilitate the implementation of these changes, the American Accounting Association appointed the Accounting Education Change Commission (AECC) in 1989 [AAA 1990].

CHANGE THROUGH INFORMATION TECHNOLOGY

The AECC issued its first position statement, *Objectives of Education for Accountants*, in September 1990. The AECC statement lists the following knowledge objective:

Professional accountants must understand the work environments found in organizations. They must understand the basic internal workings of organizations and the methods by which organizations change. Because organizations are affected by rapidly increasing dependency on technology, accounting professionals must understand the current and future roles of in format/on technology in organizations. [AECC 1990]

The accomplishment of this objective has been given to the accounting information systems course because it logically contains information technology. Also, it is the newest required course in accounting programs and its content and pedagogy are still developing.

However, as we entered the 1990's, there was a wide diversity in academia as to the content of the accounting information systems course and the instructional methods used in teaching the course. A survey in 1989 of 150 accounting educators and 300 accountants indicated that the accountants ranked computer systems as the most important management accounting topic in an accounting curriculum, while the educators only rated it the sixth most important [Van Zante 1989]. And even though the accrediting body of schools of business, the American Association of Collegiate Schools of Business (AACSB), states that a minimum accounting coursework should include "computerized management information system's Hermanson and Carcello [1989] interpreted the Bedford Committee recommendations and the AACSB require-

Developments In Business Simulation & Experiential Exercises, Volume 22,1995

ments to be satisfied in a course with “a major emphasis on computer controls and auditing in a computerized environment”.

Elliott [1991] points out that accounting systems must lead the way for accounting to move to a new paradigm in which accounting systems, “measure not only the traditional financial attributes but also such issues as customer satisfaction, internal processes, and capacity for innovation”.

The accounting systems course must change from a technical discussion of computer hardware and applications or merely using a software package to enter data and retrieve accounting statements in order to prepare the students for this new information accounting paradigm and to achieve the goals of the AECC and correct the deficiencies noted by the accounting profession. The development of an experiential approach to the accounting systems course that forces the students to interact with users of systems to see the connection between the accounting system and the information system was seen as the best approach to broaden the scope of the accounting curriculum to a user focus and enhance the preparation of the students for entry into the profession. The TOM principles of customer focus, process, and continuous improvement were used to guide the experiential exercise and the development process of the students’ projects.

The adaptation of the TOM approach also reinforced the “non-traditional” content of the cost accounting course that all accounting majors are required to take. This unifying approach helped the students see accounting as a continuous process and not the task oriented subject that they had experienced in other accounting courses.

THE EXPERIENTIAL PROJECT

Accounting students are told that they are consultants who have been given the assignment to computerize the accounting system of a local retail store. They are put into teams of three students each. They are asked to list 10 questions that they would ask the business owner in order for them to start their implementation of a computer system to replace the current manual system.

The typical questions are given below:

- How big is your accounting department?
- How many accounts in your chart of accounts?

- Do you have a periodic or perpetual inventory system?
- What is your annual sales revenue?
- What do your employees know about computers?
- How much money do you want to spend for the new system?
- When does your fiscal year end?
- How many terminals do you need?
- How fast do you want your monthly financial statements after you close the books?
- Are your sales all for cash or do you give credit?

“Parochial in their view of accounting..”

The students obviously think of their assignment in the context of accounting transactions, the narrow view of debits and credits. Even the questions that relate to the business are typically structured in a summary financial form as “What are your sales revenues?”, as opposed to “What do you sell?”, and “How many units of each product do you sell?”.

The inventory questions are generally not concerned with types of products, or inventory management, but with accounting techniques such as FIFO or LIFO valuations. The questions about computers are mostly related to cost not the expectations of the computer output.

understanding the dynamics and psychology of organizational management structures and systems including the impact of accounting information in the formulation of goals, strategies, and policies

The students’ questions that are organizationally oriented are usually only concerned with the accounting organization and generally show the naive or biased view of expecting a large central accounting department even in a modest business. The importance of the accounting system in providing information for the day to day operations of the business rather the month end accounting reports is also rarely reflected in the questions.

The dynamics of the interactions among the employees and especially evolving nature of the organization and the required information of management is often ignored. The students approach is that one set system will answer all the requirements of the business. This is a reflection of the impression that accounting rules and regulations are paramount in the design of the system so that once these are satisfied the system must be complete.

Developments In Business Simulation & Experiential Exercises, Volume 22,1995

TQM AND ACCOUNTING SYSTEMS DESIGN

The TOM principles of customer focus, process, and continuous improvement were used in designing the experiential exercise to correct the above deficiencies of the parochial view and the lack of understanding of the organizational structures and the role of accounting in the business management process.

Customer Focus

The students' questions are reviewed and classified into three categories: accounting oriented, management oriented, and computer oriented. The teams then trade questions, with one team answering the other team's questions. The team that asked a set of questions are then asked to tell the class what information value that they received from the answers to their three categories of questions. Specifically they must report how this information will help them in designing an appropriate accounting system for the business. They quickly see that the accounting oriented questions about dollar sales volume or FIFO inventory methods or year ending December 31 does not help them with their design problem.

The management-oriented questions, if they had any at all, provide some information, but still only of a superficial nature because they are so general in scope. They begin to realize that they need to know the needs of the management in order to design the system.

The computer-oriented questions are generally hardware related. The answers from the team playing the role of the managers are not really relevant because the managers want the consultants to recommend the appropriate hardware. The students soon see that these questions are really answers that they must provide and they can't at this time because they have not determined the needs of the customer.

It is at this point that we introduce the concept of a customer focus. But usually we do not have to point it out as the students have already realized that they are providing a service to the company and that service needs to be personalized to be effective.

We then have a local retailer come to the class. The owner/manager is asked to provide no more than a one-page background sheet to the students on their firm. The students then have one class period to ask questions about the

specific needs of the company from their accounting system. The students are told that they will be graded on how well their system fulfills these needs of the customer, not on how accountingly accurate or financially correct their system can generate financial statements.

In the presence of a "real customer", the students begin to ask *customer oriented* questions that relate to accounting, management or computer needs. They are forced to ask questions about the specific information requirements of the owner. They are generally very surprised to learn that the accounting system is expected to give primarily two key types of information: inventory control information and sales analysis information. The owner explains that the system needs to provide a continuous flow of information on the operation of the business as management is a continuous process while the traditional financial accounting reports are static results.

Process

Projects that only use a standard accounting software package emphasize the task-oriented nature of accounting. The experiential exercise emphasizes the process orientation that the accounting system must have and the accountants themselves must possess. Hammer and Champy [1993] define a business process as "a collection of activities that takes one or more kinds of input and creates an output that is of value to the customer".

Our objective is for the students to see the various tasks of accounting data input as a process that must be driven by the desired output of information for management. The project uses a data base approach that emphasizes the linkage of files to produce a meaningful output. The students use Alpha Four, a database for non-programmers that allows students to experience the process of creating an accounting system composed of multiple tables representing the typical accounting tasks. Most important in the process, however, is defining the linkage among the tables that provides the process of unifying the many tasks of imputing data that they are use to in the more traditional approaches to accounting.

The project design gets the students to focus on the main objective of an accounting system, which is to provide relevant information to the owner/manager. By emphasizing the process, the students learn through doing that:

Developments In Business Simulation & Experiential Exercises, Volume 22,1995

The individual tasks within this process are important, but none of them matters one whit to the customer if the overall process doesn't work-- that is, if the process doesn't deliver the goods [Hammer and Champy 1993].

The goods here are the relevant information reports on inventory control and sales analysis. They understand that what they thought was an important input such as the general journal is really only an output, a task that must be thought of as a process combining many tasks (sales invoice input linking to inventory and customer files to create the accounts receivable debit and sales credit, for instance).

Continuous Improvement

After the students are working on their project for several weeks, we give the students a memo from the owner changing some of the requirements and expanding the operations of the business (a new location and more product lines). This is very frustrating to the students as they generally approach the project as a static system that will not be changed, even though we have discussed the living nature of a real accounting system.

The moving target that they begin to experience gets them to realize that their system must be designed for continuous improvement as the business cannot compete and remain static. The students are required to be innovative on their own at this point and give examples of additional output that their system could or should provide to continuously improve the management of the business.

SUMMARY

The TOM principles of customer focus, process, and continuous improvement were used to develop an experiential exercise for the accounting systems course that has been successful in getting students to recognize the connection between the accounting system and the information system. It has helped to broaden the outlook of accounting majors from technicians to management through accounting.

REFERENCES

American Accounting Association (AAA)(1 986). Future Accounting Education: Preparing for the Expanding Profession. AAA Committee on the Future Structure, Content, and Scope of Accounting Education.

American Accounting Association (AAA) (1990) Accounting Education Change Commission *Accounting Education News*, (June), 1.

Accounting Education Change Commission (AECC) (1990). Objectives of Accounting Education *Position Statement No. One*, (September), 2.

Bedford, Norton M. and William G. Shenkir (1987) Reorienting Accounting Education *Journal of Accountancy*, (August), 84-91.

Elliott, Robert K.(1991). U.S. Accounting: The Quest for a New Paradigm. *Controllers Update*, 82, 2-3.

Hammer, Michael and James Champy (1993). *Reengineering the Corporation*. New York, NY: Harper Business.

Hermanson, Roger H. and Joseph V. Carcello (1989) An Analysis of Current Accounting Programs in the Context of the Anderson, Treadway, and Bedford Reports. *Journal of Accounting Education*, 7, 93- 105.

Van Zante, Neal R.(1989). Preparing for a Career in Industrial Accounting. *Management Accounting*, (January), 59.