

AN ACTIVE LEARNING CASE WITH STUDENT PERCEPTIONS FOR AN INTRODUCTORY FINANCIAL ACCOUNTING COURSE CONSIDERING ENVIRONMENTAL ISSUES

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ABSTRACT

An active learning exercise (Case) gives students opportunities to experience teamwork, prepare written reports, make presentations, and evaluate peers. There is a significant difference ($p = .05$) between mean scores on Exam II (before Case) and Final Exam (after Case). Students strongly agreed/agreed (4.3-max. 5.0) that this case increased their understanding of financial analysis topics. This case incorporates half of the AICPA Core Competency Framework [1999] elements (functional, personal, broad business perspective) with two class hours. Students ranked 89% of expected elements as strongly agree/agree. About 9% of the students considered environmental issues in their investment decisions.

Keywords: Active-Learning Exercise, AICPA Core, Environmental

INTRODUCTION

Albrecht and Sack [AAA, AICPA, IMA, "Big 5"] [2000] state that "introductory accounting might focus less on preparation of financial statements and more on analysis." In addition, these authors suggest that an undergraduate accounting curriculum could include the use of accounting information from different industries (e.g., using cases). In this active learning case project, each team presents information from a different industry.

The AICPA Core Competency Framework for Entry into the Accounting Profession (Framework) [1999] identifies a set of needed competencies for students preparing to enter the accounting/business professions. The Framework competencies are categorized as functional, personal, and broad business perspective. The active learning case utilized in this research is designed to permit the students in an introductory financial accounting course to experience more than one-half of the elements of the Framework. The AECC [1990] asserts that students should actively participate in the learning process and not be just passive recipients of information. Albrecht and Sack [2000] emphasize the importance of “teaching students how to find answers and how to learn.” Also, the need for entry-level professionals to be able to organize and evaluate information is indicated by the Framework. The case utilized in this research study requires the students to locate, organize, and evaluate financial information. Further, Albrecht and Sack [2000] recommend that an undergraduate accounting curriculum should include, among other topics, analysis of accounting information and use of accounting information to make decisions. Also, these authors suggest group activities to teach both leadership and how to work together. This case involves group work and analysis of financial accounting information as a basis for decision making.

This study contributes to the accounting literature by presenting a case that exposes introductory financial accounting students to financial and nonfinancial information found in publicly traded company annual reports and SEC 10-K reports. This case involves two companies within one industry for each team. The case also permits the students to develop or refine necessary AICPA core competency strategies and techniques while analyzing, writing, and presenting the case. In addition, student opinions of this active learning technique are obtained and analyzed.

THEORY

Learning-to-Learn

Cognitive researchers (Anderson [1970]; Gage and Berliner [1984]; Ross [1983]; and Glaser [1984]) suggest that learning is an active process. Johnstone and Biggs [1998] recommend supplementing existing textbook material with real world activities (e.g., realistic case analysis). Our outside-of-class case assignment supplements the textbook material with corporate annual financial and SEC 10-K reports. Further, this case permits the students to encounter many Framework elements encompassing analysis and evaluation of financial accounting topics. For example, the students must identify what needs to be measured in the calculation of financial ratios.

Writing-to-Learn

The ability of the students to write is important in accounting and business careers. Communications are an element of the AICPA Framework [1999]. Business professionals who are starting their careers should be able to organize and effectively communicate information so that it can be readily comprehended by the receiving parties. According to Hite [2001], when large quantities of information need to be taught (as is the situation in most accounting courses), there should be active reinforcement of the material. Hite recommends that active reinforcement could

be accomplished by requiring writing exercises. Our active learning case assignment gives the students an opportunity to write on financial accounting topics. Specifically, they have two different types of writing exercises (team and individual reports) as part of the case requirements.

In summary, the literature suggests that student active learning exercises can enrich the learning process and that writing projects can be utilized as a learning tool. The following hypothesis is used to test the benefit of the active learning technique:

H₁: The distribution of exam scores related to the financial statement analysis questions in Exam II (before the active learning exercise) and in the Final Exam (after the active learning exercise) are the same.

Outcome Assessment

According to Ennis [1987] attitudes strongly determine the ability to apply intellectual skills (e.g., written communication skills). Stout and Rebele [1996] indicate the need to examine student attitudes toward a teaching method. DeMong, Lindgren, and Perry [1994] recommend outcome assessment as a method to be used to evaluate the impact or effectiveness of an activity, class session, course, or a program. They also indicate that student surveys are very good sources of information related to student satisfaction for a program. A survey can also be utilized to ascertain student satisfaction from a class activity. Stone and Shelley [1997] used questionnaires to measure student perceptions of the instructional processes. Sawyer *et al.* [2000] administered a survey after the students received their grade and assessment sheet for a case to determine if their students felt that the case was useful in meeting specified skills. In this research study, students' opinions of the usefulness of the Financial Statement Analysis Case Project in achieving selected Framework core competencies are measured using a questionnaire (available upon request). This questionnaire was administered after the students received their case results.

Social Responsibility

The Committee on the Future Structure, Content and Scope of Accounting Education (the Bedford Committee) [1986] suggests that an important role of accounting educators is to foster a "sensitivity to social responsibilities." Several elements of the Framework involve directly or indirectly social responsibility accounting. Our case assignment requires the students to answer questions related to the environment and community activities of the companies being analyzed.

Several educators (Sefcik, *et al.* [1997], Gordon [1998], and Grinnell and Hunt [2000]) have made suggestions on how to incorporate environmental and social responsibility accounting into existing upper-level accounting classes. An objective of our case is to introduce social responsibility accounting to the students in the first accounting course.

Framework

The Framework provides a set of needed competencies for all students who are preparing to enter the accounting profession and/or the business world. The specific functional competencies criteria that are expected to be accomplished with this case are: decision modeling, measurement,

reporting, research, and leverage technology to develop and enhance functional competencies. Also, the case is designed to permit the students to experience elements of each of the seven criteria in the personal competencies category (professional demeanor, problem solving and decision making, interaction, leadership, communication, project management, and leverage technology to develop and enhance personal competencies]. Further, the case involves elements of the following criteria of the broad business perspective competencies category: strategic/critical thinking, industry/sector perspective, resource management, legal/regulatory perspective, marketing/client focus, and leverage technology to develop and enhance a broad business perspective. The team financial statement analysis case is expected to result in elements of all three categories of the Framework competencies being integrated into an introductory financial accounting course with a minimum of two class hours.

Students' opinions of the usefulness of the Financial Statement Analysis Case Project in accomplishing selected Framework core competencies are measured using a questionnaire. This questionnaire requests the students to indicate their opinions as to whether the Framework competencies were achieved in analyzing, writing, presenting, and evaluating their cases.

RESEARCH METHODS

An introductory financial accounting class taught by one of the researchers is used in the research experiment. The project involves financial accounting analysis for the two most recent years of annual reports and/or SEC 10-K reports for two companies within the same industry (e.g., Home Depot and Lowe's) for each team. Each team analyzes a different industry (e.g., hotels, shoe manufacturing, or airlines). The case project instructions are available upon request.

Written Reports and Oral Presentations

The students are required to prepare a team written report, which includes three parts. First, the team is required to calculate liquidity ratios, solvency ratios, and profitability ratios for the two most recent years. Then, the students are to use the financial statement ratio analysis results as the basis for answering a set of questions. For example, "Which company has the more favorable inventory turnover?" Finally, for the most recent year, the team is required to answer another set of questions related to each company's annual and SEC 10-K reports. For example, "What are each company's basic and diluted earnings per share?" Further, each student is required to give their opinions as to the firm they would select for investment purposes. For the environmental issues and community service questions, the researchers analyzed the individual reports to determine whether the students discussed these factors in support of their investment decisions.

Also, each team is required to present their analysis in an oral presentation (15 to 20 minutes in length) to their classmates. The other classmates are expected to act as the client and are encouraged to ask questions of the presenting team.

Evaluations

The evaluation form (available upon request) indicates that the team as a whole is evaluated and also each student individually is evaluated as a separate presenter. The evaluation form further

indicates that the students are graded (5-1 Likert scale with 5 being the best) based on (1) the content of their segment or topic presented, (2) the organization of their presentations, (3) the use of visual aids during their presentations, and (4) the effectiveness of the delivery of their presentations. The grading characteristics are also defined on the evaluation form. For example, the characteristics for effectiveness of the delivery of the individual student's presentation are listed as: Did the presenter's voice enhance the effectiveness of the presentation? Did the presenter maintain good eye contact? Did the presenter sound natural and professional?

In addition, the evaluation form identifies the characteristics on which the teams are evaluated. The team score is based on (1) the content of the team case presented; (2) the organization of the entire team presentation; (3) the coordination of visual aids used by the team; and (4) the cohesiveness of the team presentation. The students are informed to keep the evaluation forms confidential and that only the instructor will compute the presenter's scores. The evaluation form permits the evaluators to write comments and suggestions for each presenter and for the overall team presentation. The instructor summarizes the written evaluation form comments and attaches them to the student's individual written report.

When the written reports are returned, each student also receives his or her score for the project. The total score for the Case is 70 points, which is determined as follows: Team Report, 40; Individual Report, 15; Individual Presentation, 10; and Team Presentation, 5.

Testing

Approximately a week following the discussion of the homework problems on the financial statement analysis topics, an exam (Exam II) is administered. Exam II is given before the students start their active learning case project. About a week after the students make their presentations and complete their team and individual reports, a Final Exam is administered. The Final Exam has questions related to the financial statement analysis topics that are different than those that were given on Exam II but are similar in the level of complexity. The results of Exam II and the Final Exam are used to measure the effect of this active learning exercise technique.

Student Perceptions – Framework

This study utilizes a questionnaire to measure student perceptions of this active learning technique as Stone and Shelly [1997] did in their research. The questionnaire is utilized to measure the students' opinions of the usefulness of the financial statement analysis case project (Case) in accomplishing selected Framework core competencies. In addition, the questionnaire is used to ascertain the opinions of the students on the usefulness of the Case in understanding the financial statement analysis topics. The questionnaire requests the students to rank (strongly agree = 5) whether selected Framework competencies are accomplished during their case preparation, team presentation, individual presentation, and completion of the peer evaluation form.

RESULTS

The students are tested twice on the financial statement analysis topics. Exam II can be considered as a pre-test. The second exam (Final Exam) is given after the students complete the

Case. The Final Exam can be considered as the post-test. The students' Exam II and Final Exam scores are matched by names. The Wilcoxon signed rank test is utilized to test H_1 ($EII \geq FE$). Since there is a significant difference ($p = .05$), H_1 is rejected. The students' exam scores significantly increased as a result of this active learning exercise.

The researchers administered a questionnaire that is used to determine whether the students feel that the assigned case is useful in meeting specified Framework skills. Generally, the students stated that they strongly agreed or agreed that the selected core competencies were accomplished by the case. The average mean score for the students was 4.143 and the median score was also 4.143. The scores ranged from 4.357 to 3.833. Of the elements that the researchers expected to be accomplished, the students ranked 89.29% as either "strongly agree" or "agree." The fifteen highest elements had a score of 4.262 or higher. Of the top fifteen elements, 73.3% were from the personal competencies category, which represented 18% of the total personal competencies elements evaluated. Of the remaining elements in the top fifteen, two were from the functional competencies category and two were from the broad business perspective category.

The questionnaire also requests the students to rank (strongly agree = 5) whether preparing the financial statement analysis case project greatly assisted them in understanding the financial statement analysis topics. The students strongly agreed/agreed (4.2927) that this case project increased their understanding of the financial statement analysis topics.

This case project gives the students an opportunity to experience types of skills recommended by the Framework that may not normally be accomplished in a typical introductory financial accounting course (e.g., personal competencies). For the elements with a score of 4.000 or higher, the personal competencies and broad business perspective competencies categories had a percentage of expected elements of 94.29% and 90.91%, respectively. Also, about 9% of the students cited environmental issues and 9% of the students discussed community service activities of a company as an important factor in their investment decisions.

In addition, the use of actual company data in this case permits the students to analyze and interpret financial information as advocated by Albrecht and Sack [2000]. Also, as recommended by the AECC [1990], the students were active participants in the learning process and were required to locate, obtain, and organize financial statement analysis information.

This project can be accomplished using only two to three hours of class time. The researchers have used similar active learning techniques in several accounting courses at various universities ranging from a small regional university to a large urban university with many positive comments from the students. Why not try an active learning project at your university?

REFERENCES

References are available upon request from Judith A. Sage, A. R. Sanchez, Jr. School of Business, Texas A & M International University, 5201 University Blvd., Laredo, TX 78041, lloydsage@aol.com, 956-326-2493.