Integrating An AIS Approach Into The Introductory Accounting Course

Margaret O'Reilly-Allen, (Email: oreillyallen@rider.edu), Rider University
Dorothy McMullen, Rider University

Abstract

Accounting education is being criticized as not being in touch with the current business environment. A recent report, Accounting Education: Charting a Course Through a Perilous Future (Albrecht and Sack, 2000) identifies many problems in accounting education and makes several recommendations for improvement in curriculums. One recommendation is to broaden the perspective of accounting and view the accounting function as a subset of the larger business information system. This approach calls for accounting courses that are a combination of traditional accounting material and information system concepts. This paper reports the results of a study that used an AIS approach for the introductory accounting learning experience. The purpose of the study is to provide initial evidence about adopting an AIS approach in the introductory accounting course. Specifically, the study examined whether: 1) an AIS approach provided students with a better understanding of business processes and the related financial reporting process, 2) the students who were taught with an AIS approach believed the material was more relevant to them as business students and in their future careers, and 3) students taught with an AIS approach understood more fully the impact of technology on business cycles and financial reporting. The results support that an AIS approach provides students with a framework to understand the relationship between business processes and the financial reporting system. In addition, students taught with an AIS approach indicated they understood the concepts of business cycles and the interaction between accounting and other departments and the impact of technology on financial reporting.

Introduction

Accounting education is being criticized as not being in touch with the current business environment. In recent years, a number of interested groups and individuals, such as the Bedford Committee (1986), the Accounting Education Change Commission (1990), and Robert Elliott (1992) have issued calls for improvement in accounting curriculums and have even sponsored studies

with this objective in mind. While some changes were implemented, there was considerable evidence from the profession and business world, that the changes were not pervasive or substantive enough (AICPA, 1998). As a result, in December 1999, the largest U.S. professional and academic accounting organizations¹ formed a task force to study the future of accounting education. The newly released report of the group, *Accounting Education: Charting a Course Through a Perilous Future* (Albrecht and Sack, 2000) identified the following problems in ac-

Readers with comments or questions are encouraged to contact the authors via email.

counting education: course content and curriculum, pedagogy, skill development, use of information technology (IT), faculty development and strategic direction of accounting education. While the report provides many recommendations to address these problems, a key recommendation is to broaden the perspective of accounting and view the accounting function as a subset of the larger business information system. The report then states that this broadly defined "information" perspective of accounting would call for accounting courses that are a combination of traditional accounting material and information system concepts.

One way to implement this recommendation is to adopt an accounting information systems (AIS) framework for the introductory accounting learning experience. The traditional framework for teaching the introductory course focuses on recording, classifying and reporting on economic transactions. An AIS framework, on the other hand, provides a broader perspective to understand business processes² and how accounting provides timely and relevant information about those processes. From a learning perspective, an AIS framework can provide students with a structure in which transactions and calculations in the financial reporting process fit. The framework reflects the AIS relationships in the company and allows the student to understand homework assignments as part of the larger process of providing information to users.

The purpose of this paper is to provide initial evidence about adopting an AIS based approach in the introductory accounting course. The paper reports the results of a study that compared an experimental group that was taught using an AIS framework for presenting material to a control group that was taught using a traditional "user of financial information" focus. The objective of the study was twofold: 1) to determine whether an AIS approach provided students with a better understanding of business processes and the related financial reporting process, 2) to determine whether the students who were taught with an

AIS approach believed the material was more relevant to them as business students and in their future careers, and 3) to determine whether students taught with an AIS approach understood more fully the impact of technology on business cycles and financial reporting.

Methodology

During the fall Semester, 2000, four instructors taught four sections of Principles of Accounting I; two sections were combined and served as a control group and two sections were combined as served as the experimental group. It was not possible to randomly assign students to sections because students registered for classes by number of credits to date. Thus, the control and experimental treatments were randomly assigned to intact sections.

Both groups used the same textbook, *Financial Accounting*, (Weygandt, Kieso and Kimmel, 1999) as the basic course material. Exercises, problems, and hard copy test materials were developed from this book. The course was divided into three instructional and testing periods; each period was completed in four weeks. All students took the same test that was a combination of multiple choice, matching tests and problems and the tests were graded in a uniform manner. A comprehensive final examination was administered to both groups at the end of the semester. A questionnaire was also administered to both groups upon completion of the course to determine the student's attitude towards the relevance and the perceived benefit of the course to the students. The questionnaire used a five point Likert scale.

The control and experimental groups were taught in a traditional manner by listening to lectures, discussing the material, completing exercises, problems, and group work. All sections were assigned problems that required the use of spreadsheet packages. Students in the experimental group also received handouts during each period that provided the AIS framework for

the material covered in the text. The set of handouts that were distributed during the first period of the course divided the accounting cycle into business processes (revenue, purchasing and fixed asset management) and provided students with an understanding of the information an AIS could provide about each cycle. The second module examined the revenue and purchasing cycle in detail, had students develop flowcharts of those processes and decide what type of information internal and external users might want about these cycles. The third module presented and discussed the concept of databases (Microsoft Access). Students manually designed a database for a merchandising company and developed reports for internal and external users. Students also had homework assignments based on the handouts.

Equality of Groups

Table 1 presents a summary of the demographic backgrounds of the students and the results of the statistical analysis of demographic information. To examine whether there were any preexisting differences between the control and experimental group in terms of their demographic characteristics, a series of t tests were conducted. As shown in Table 1, the control variables were age, GPA to date, and SAT scores. None of the demographic control variables was found to be significant, therefore, it can be concluded that any statistically significant results can be attributed to the treatment rather than to demographic variables.

Study Results

Test Score Results

Table 2 presents a summary of the average test scores and the results of the statistical

analysis of the two groups. To examine whether there was a difference in student performance, a series of t tests were conducted. As shown in Table 2, for test one (t and p values), there was not a significant difference between the test scores of the group that was taught using a traditional "user" approach and the test scores of the group that was taught using an AIS approach. The results indicate that using a systems framework did not lead to improved understanding and performance on the test one that covered the accounting cycle and related business cycles. However, for test 2 and test 3, that covered specific business cycles, (revenue, purchasing, and fixed asset management) in detail, using a systems framework resulted in test scores that were, marginally significant (on average, 3.7 and 1.7 points higher respectively). The would lend support that adopting an AIS framework for the introductory accounting course improves a student's understanding of course material.

Questionnaire Results

Table 3 presents a summary of the results of the questionnaire and the results of the statistical analysis of the two groups. To exam-

Table I
Summary of Demographic Information
for Students Enrolled in Both Groups

	Control Group	Experimental Group	T Value
Group Size	58	55	
Average Age	19.7	19.22	
Average SAT Score	1020	1043	0.83
Average GPA	2.62	2.60	0.03

Table II
Summary of Statistical Analysis of Average Test Scores
for Students Who Completed the Course

	Control Group	Experimental Group	T Value	P Value
Test 1	78.4	76.9	0.48	0.31
Test 2	74.9	78.6	1.53	0.06
Test 3	81.3	83.0	1.14	0.13

Table III
Summary of Statistical Analysis of Survey Questions for Students Who Completed the Course

	Control Group	Experimental Group	t Value	P Value
Question 1:				
How useful or relevant was this course for you now?	3.8	3.7	0.65	0.25
Question 2:				
Do you think the course material will be useful to you in the future?	4.0	4.04	0.01	0.49
Question 3:				
How often do you think you will use what you learned in this course in five years?	3.67	3.58	0.47	0.31
Question 4:				
Did this course help you learn about business cycles and interactions between accounting and other departments?	3.72	4.12	2.24	0.01
Question 5:				
Were you made aware how technology can impact reporting and processing of financial information?	3.38	4.12	3.57	0.0003

ine whether there was a difference in student perceptions about the relevance and usefulness of the course material, a series of t tests were conducted. As shown in Table 3, (t and p values), there were no significant differences between the assessments of the usefulness or relevance of the course for the students now, the usefulness or relevance of the course for the future (questions one through three). However, there were statistically significant differences between the control group and the experimental group in their assessments of how well they learned about business cycles and interaction between accounting and other department and in how aware they were about the impact of technology on reporting and processing financial information (question four and five). The would lend support that adopting an AIS framework for the introductory accounting course results in students' having a better understanding of the relationship between business cycles and accounting and financial reporting.

Conclusion

The accounting professional is changing, expanding and transforming itself as ad-

vances in IT replace many traditional accounting functions. It is now accounting education's turn to transform itself. One recommendation made to improve accounting education is to develop accounting courses that are a combination of traditional accounting material and information systems concepts. This paper reports the results of a study that used an AIS approach for the introductory accounting learning experience. With respect to test scores that measured overall accounting knowledge: the results indicate that for the overall accounting cycle an AIS approach did not affect students' scores. However, on the tests that measured students' knowledge of specific business cycles that comprise the overall accounting cycle, students taught with an AIS approach scored somewhat higher. These results are encouraging and support that an AIS approach can provide students with a framework to understand the relationship between business processes and the financial reporting system. In addition, students taught with an AIS approach indicated they understood the concepts of business cycles and the interaction between accounting and other departments and the impact of technology on financial reporting.

Suggestions for Future Research

The results of this study provide preliminary evidence about the effects of adopting an AIS approach for the introductory accounting learning experience. Future research could provide additional insight by assessing student performance in the introductory accounting course using measures other than test scores and by tracking student performance in subsequent accounting courses. □

Endnotes

1. The study was jointly sponsored by the American Institute of Certified Public Accountants (AICPA), the American Accounting Association (AAA), the Institute of Management Accountants (IMA) and Arthur Anderson, Deloitte & Touche, Ernst & Young, KPMG, and PricewaterhouseCoopers, who are collectively referred to as the "big five" accounting firms.
2. A business process is a goal-oriented collection of activities that takes input, adds value and creates output.

References

1. Accounting Education Change Commission (AECC). Objectives of Education For Accountants: Position Statement One. *Issues In Accounting Education* (Fall): pp. 307-312, 1990.
2. Albrecht, W. and Sack, R. *Accounting Education: Charting The Course Through A Perilous Future*. Accounting Education Series, Volume No. 16. Sarasota, FL: American Accounting Association, American Institute of Certified Public Accountants, Institute of Management Accountants, Arthur Anderson, Deloitte & Touche, Ernst & Young, KPMG, and PricewaterhouseCoopers, 2000.
3. American Accounting Association (AAA), Committee on the Future Structure, Content, and Scope of Accounting Education (The Bedford Committee). Future Accounting Education: Preparing For The Expanding Profession. *Issues In Accounting Education* (Spring): pp. 168-195, 1986.
4. American Institute of Certified Public Accountants (AICPA), The AICPA Vision Project: Focus on the Horizon. *Executive Summary and CPA Vision Project*, New York, NY: AICPA, 1998.
5. Elliot, R.K., "The Third Wave Breaks On The Shores Of Accounting," *Accounting Horizons*, Volume 6, No. 2, pp. 61-85, 1992.
6. Kieso, D., J. Weygandt and Kimmel. *Financial Accounting-2th edition*, John Wiley and Sons, New York, NY, 1998.

Notes