USING AN ACTIVE LEARNING PROJECT FOR TEACHING GRADUATE GOVERNMENTAL ACCOUNTING TOPICS

Judith A. Sage, A. R. Sanchez, Jr. School of Business, Texas A & M International University, 5201 University Blvd., Laredo, TX 78041, 956-326-2493, lloydsage@aol.com
Lloyd G. Sage, A. R. Sanchez, Jr. School of Business, Texas A & M International University, 5201 University Blvd., Laredo, TX 78041, 956-326-2493, lloydsage@aol.com

ABSTRACT

An active learning project (self-generated elaboration) was studied. Students participated in the learning process by organizing information on selected governmental accounting topics. Short-term and long-term effects were examined. Student perceptions were investigated using a survey. The Project appears to be a good method of teaching graduate-level governmental accounting topics that are moderately complex.

Keywords: Active-learning, self-managed learning, graduate governmental accounting,

INTRODUCTION

Various committees have issued calls for revising accounting education over the last three decades. Most recently, the Pathways Commission (2012) has indicated that accounting educators have responsibilities that involve both curricular dimension (what we teach) and pedagogical scope (how we teach). Earlier, Albrecht and Sack (2000) emphasized that accounting educators need to help students develop their ability-to-learn skills. The active-learning project (self-generated elaboration) used in this research should give students the opportunity to develop or expand their ability to “learn to learn.” Also, this research investigated how graduate governmental accounting topics could be taught.

To assist students in obtaining the needed skills, the instructor’s role must shift from being the presenter of facts to facilitator of active learning according to Jackson and Durkee (2008). Further, Wessels (2010) suggested that the instructor’s fundamental task is to encourage students to utilize learning activities that will most likely result in the students accomplishing the desired learning outcomes for the course. Albrecht and Sack (2000) indicated that there is a need to change the delivery method of accounting education. Shanahan and Meyer (2001) recommended that research be conducted to facilitate a better understanding of what, why, and how students learn in order to assist instructors in teaching. A survey was used in this study to determine whether students considered the Project, textbook readings, and the textbook examples to be useful in understanding the appropriate graduate governmental accounting topics.
The Accounting Education Change Commission [AECC] (1990) asserted that accounting students should not be just passive recipients of information but should actively participate in the learning process. The Commission indicated that accounting programs “should lay the base on which life-long learning can be built.” The Quality Assurance Agency for Higher Education [QAA] (2002) suggested that students should have the capacity for independent and self-managed learning. Our active-learning project introduced the students to self-managed learning.

One of the skill sets that the AECC believed that students should possess is the ability to locate, obtain, and organize information. Also, the AICPA (1999) in the Framework (Functional Competencies category under Decision Modeling) indicated the need for entry-level accounting professionals to be able to organize and evaluate information. Further, Albrecht and Sack (2000) emphasized the importance of “teaching students how to find answers and how to learn.” The active-learning (self-generated elaboration) project in this research required the students to organize governmental accounting topics.

This study presents an elaboration technique that required graduate students to actively participate in the learning process by organizing information on selected technical governmental accounting topics [general capital assets (GCA) and capital projects funds (CPF)]. This written self-generated elaboration technique encouraged students to “learn to learn.”

This study contributes to the existing accounting literature by investigating the effects of self-generated elaborations in a graduate-level governmental and not-for-profit (NFP) accounting course. Also, there was further exploration of the effects of self-generated elaborations related to both short-term and long-term knowledge retention. In addition, student opinions of the self-generated elaboration technique were obtained by the use of a survey.

THEORY

Annis (1985) suggested that student-generated paragraph summaries seem to help the students in executing the vital encoding process more efficiently than either note-taking or only reading the information. Levin [1988] found that the learning process might be enhanced by utilizing elaborations. Anderson [1983] defined an elaboration as any information that explains or clarifies some to-be-learned (target) information. An elaboration can be thought of as the link that allows the new target information to be integrated into the student’s present knowledge. In addition, several cognitive research studies (e.g., Anderson [1983], Stein et al. [1984] and Reder et al. [1986]) suggested that elaborations can facilitate memory. Types of elaborations include summaries, examples, analogies, and self-explanations. Our research investigated whether the self-generated elaboration project improved students’ quiz and exam scores.

Various researchers [Anderson (1995), Driscoll (1994), Gagné and Medsker (1996), Gredler (1997), and Schunk (1996)] have suggested that instructors need to establish different learning opportunities to accomplish different types of learning objectives. Boh et al. (2001) indicated that lecture-based training/education may not be an adequate transfer technique when complexity of knowledge is high. Bonner (1999, p. 11) suggested that “learning objectives involving complex skills require teaching methods that promote active learning on the part of students, while learning
objectives involving simpler skills can be achieved with more passive teaching methods.” In this research study, the students were required to organize moderately complex graduate governmental accounting topics using an active-learning elaboration technique.

In summary, literature suggests that self-generated elaborations can enhance the learning process. As Hite and Parry (1994) suggested, the benefit of elaboration techniques may have a greater short-term effect than a long-term effect. The following hypothesis was used to test these effects (using the chi-square test):

\[ H_1: \text{The distribution of quiz (exam) scores on the GCA (CPF) questions are the same for the students who prepared an outside of class project on the assigned topic as the students who did not prepare an outside project for this topic.} \]

VanLehn (1996) found that learning from worked-out examples is a good source of learning. Thus, working-out (i.e., reviewing) examples in a governmental accounting textbook should be an important source of learning. According to Anzai and Simon (1979) and Sweller and Cooper (1985), it is possible to learn from working-out examples. In fact, Anderson, et al. (1984) and Recker and Pirolli (1995) indicated that the preferred learning mode of novices is to work-out examples. Zhu and Simon (1987) found that learning was quicker using worked-out examples than from lecturing if the examples were appropriate. Zhu and Simon also indicated that participants using the worked-out examples had acquired not just rote learning but in-depth understanding of the subject.

The students in our research study completed a survey to determine their opinions of the usefulness of reviewing the textbook examples related to the assigned governmental accounting topics in (1) understanding these topics and (2) preparing for a quiz/exam on these topics. In addition, the research study compared the student’s opinions associated with reviewing textbook examples to only reading the text in the textbook.

As mentioned previously, Shanahan and Meyer (2001) recommended that research be conducted to facilitate a better understanding of what, why, and how students learn. To better understand factors affecting the learning process, the student’s perception of reviewing textbook examples and reading the text in the textbook were examined.

In summary, the literature suggests that student active learning exercises (e.g., self-generated elaboration projects) can enrich the learning process. Therefore, it was necessary to determine whether the students perceived any benefits (e.g., usefulness in understanding governmental accounting topics) from the self-generated elaboration projects [Project] assigned. The following hypotheses were used to test whether the students considered the Project, reading the text in the textbook, and reviewing the textbook examples to be useful in understanding the appropriate governmental accounting topics:

\[ H_2: \text{In understanding the appropriate governmental accounting topics, the students will consider the self-generated elaboration (Project) to be as useful as reading the text in the textbook [reviewing the textbook examples].} \]
H₃: In understanding the appropriate governmental accounting topics, the students will consider the reviewing of the textbook examples to be as useful as only reading the text in the textbook.

The students should be able to apply their newly acquired knowledge. A good elaboration project should help the students in this process. The preparation of homework assignments is probably the first time the students apply their recently acquired knowledge. When students take a quiz or an exam they also are applying their knowledge. The following hypotheses were used to ascertain if the students believed that the Project was most helpful in (1) understanding the topics, (2) doing homework or (3) preparing for a quiz or exam:

H₄: The students will consider the Project to be as useful in understanding the appropriate governmental accounting topics as doing the homework on these topics.

H₅: The students will consider the Project to be as useful in preparing for the quiz (exam) on the appropriate governmental accounting topics as doing the homework on these topics.

**RESEARCH METHODS**

A graduate governmental and NFP accounting class taught by one of the researchers was used in the research experiment. At the beginning of the semester, the students were requested to complete a personal data sheet (e.g., university GPA, accounting GPA, credit hours enrolled, work hours, number of accounting course(s) enrolled in during that semester, and gender). There were no significant differences between the two governmental experimental groups (GCA topics and CPF topics) on the reported demographic information.

Every other student in the governmental and NFP accounting class was assigned to Group A. The Group A students were asked to prepare Project A to assist them in learning about general capital assets (GCA). The other students in the class (Group B) were asked to prepare a project (Project B) to assist them in learning about capital projects funds (CPF). Both groups received the same class discussion and were assigned the same homework problems for these topics.

The students were told they could use a checklist, chart, graph, grid, flowchart, outline, or other approach that would help them understand the topics. The project was not to be more than 1 1/2 pages in length. The students were given one week to prepare the project. The students were instructed to make copies of their projects, which were to be used in preparing their homework assignments and in studying for the Quiz/Exam related to the topics.

In the class period following the discussion of the governmental accounting homework problems on the appropriate topics, a Quiz was given. The results of this Quiz were used to measure the short-term effect of this teaching technique (Project). Several weeks after the Quiz, an Exam was
administered. The results of the Exam were used to measure the long-term effect of this teaching technique.

Just prior to receiving the results of the Quiz, the students were requested to complete a survey to determine their opinions on the usefulness of the Project in (1) understanding the appropriate governmental and NFP accounting topics, (2) preparing the homework assignments, and (3) studying for the Quiz. In addition, other questions were included, which pertained to the usefulness of both the textbook readings and examples in (1) understanding the appropriate topics, (2) preparing the homework assignments and (3) studying for the Quiz.

Prior to returning the Exam, the governmental and NFP accounting students were requested to complete another survey to determine their opinions on the usefulness of the Project in (1) understanding the appropriate topics, (2) preparing the homework assignments, and (3) studying for the Exam. Also, this survey included questions related to the usefulness of both the textbook readings and examples in (1) understanding the appropriate topics, (2) preparing the homework assignments and (3) studying for the Exam.

RESULTS

After the discussion of the homework problems on the appropriate topics, the students were given a Quiz. This testing instrument was used to measure the short-term effect of the self-generated elaboration teaching technique. For Project A, the students with and without the project scored the same on the GCA topics. The students with Project B scored slightly higher than the students without this project on the CPF topics, but the chi-square test indicated that the effect of the self-generated Project B results was not statistically significant.

Several weeks after the Quiz was administered, the students were again tested on the same topics on an Exam. This Exam was used to measure the long-term effect of the self-generated elaboration technique. There were different results depending on the project assigned. For Project B the students with this project scored higher than the students without this project on the CPF questions, but for Project A the students without this project scored higher than those students with this project. However, the chi-square test indicated that the effect of the self-generated Projects (A and B) was not statistically significant.

Just prior to returning the Quiz, the students were required to complete a survey to determine their opinions on the usefulness of the Project. The researchers had hoped that the students would find the self-generated elaboration Project to be more useful in understanding the topics, doing homework, or preparing for the Quiz than only reading the text in the textbook or reviewing the textbook examples. Generally, the students in both Project groups did find that their Projects were as helpful or more beneficial than either reading the textbook discussion or reviewing the textbook examples. The only exception was that the Group B students (CPF) believed that reviewing the textbook examples was more helpful in completing homework assignments than either reading the text or preparing the Project. However, there were no significant differences.
Both Project groups indicated that reading the text in the textbook was more helpful than reviewing the textbook examples in understanding the appropriate topics. However, they found that reading the text in the textbook and reviewing the examples were equally beneficial in preparing for the Quiz. But, there were no significant differences.

The Group A students indicated that the Project was more helpful in understanding the GCA topics than either doing the homework on the topics or preparing for the Quiz. Group B also found that their Projects were the most helpful in understanding the CPF topics.

The Group A students indicated on the survey given after the Exam that the governmental accounting GCA Project was more helpful than either reading the textbook discussion or reviewing the textbook examples in (1) understanding the GCA topics, (2) preparing the homework, and (3) studying for the Exam. However, on this survey the Group B students found the CPF Project to be the most helpful in understanding their topics. This group changed their opinions as to the usefulness of the Project from the first survey administered after the Quiz. They no longer felt that the Project was equally or more useful than reading the textbook discussion or reviewing examples in preparing for a testing situation. But, there were no significant differences.

The opinions (as measured by the survey mean scores) of the Group A students as to the usefulness of the GCA Project increased between the two surveys. However, the opinions of the Group B students as related to the usefulness of the CPF Project in understanding the topics and in preparing for a testing situation decreased between the two surveys.

When comparing textbook reading to reviewing textbook examples, the students in both groups, generally, did not find either method of learning to be more helpful. In fact, the Group B students indicated that reading the textbook discussion and reviewing the textbook examples were equally beneficial in doing homework assignments and in preparing for the Exam.

The Group A students believed that the Project was more helpful in understanding the GCA topics than either doing the homework on the topics or preparing for the Exam. However, the Group B students found that the Project was equally helpful in understanding the CPF topics and in doing homework assignments on these topics.

The self-generated elaboration Project that required the students to be active participants in the learning process was, generally, equally as effective in learning the governmental accounting topics (GCA and CPF) as either reading the textbook discussion or reviewing the textbook examples. Thus, it appears that the self-generated Project is a good supplemental method of teaching graduate-level governmental accounting topics that are moderately complex.

REFERENCES


