

AN ABSTRACT OF THE THESIS OF

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Abstract approved: \_\_\_\_\_  
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The Accounting Education Change Commission (AECC) is a consortium of concerned accounting professionals and accounting educators that advocates the redesigning of accounting curriculums in higher education. Traditionally accounting programs have focused on the technical aspects of the profession. Although technical competence is necessary for the profession, the AECC urges accounting curricula to provide students with experiences that will foster decision-making skills, communication skills and interpersonal skills.

This study was an attempt to respond to the recommendations of the Accounting Education Change Commission through cooperative learning pedagogy. Related research suggests that employing particular elements of cooperative learning can improve intellectual skills, communication skills, interpersonal skills, learning to learn, active learning, achievement, attitudes and student evaluations of teachers.

The data from this study indicate that while imposing the AECC's recommendations through the use of cooperative learning pedagogy most students attained high levels of achievement on unstructured problems requiring high levels of cognitive applications. However, student achievement was not as high as expected on structured problems requiring lower levels of cognitive applications. In addition, students' reactions to cooperative learning and implementation of the AECC's recommendations were mixed. Team work was not perceived by many students to be important in introductory accounting. However, learning to learn and active participation in the learning process were deemed important to students in introductory accounting. Furthermore, students evaluated the professor's teaching effectiveness significantly lower than did previous students taking introductory accounting from the same professor using traditional lecture-recitation methods. Imposing the AECC recommendations through cooperative learning techniques in introductory accounting in higher education clearly calls for further research and longer-term exposure to the changes in classroom pedagogy.

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REACHING FOR THE ACCOUNTING EDUCATION CHANGE COMMISSION'S  
RECOMMENDATIONS THROUGH COOPERATIVE LEARNING

by

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Dedicated

to

My Husband, Val, for His  
Persistent Faith in My Ability to Succeed  
and Without Whose Support I Would Not  
Have Begun This Journey Nor Have  
Completed My Doctorate

and to

My Daughter, Summer, for Her  
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# REACHING FOR THE ACCOUNTING EDUCATION CHANGE COMMISSION'S RECOMMENDATIONS THROUGH COOPERATIVE LEARNING

## CHAPTER 1 INTRODUCTION

The profession of accounting has undergone fundamental change. Accounting now demands solving unstructured problems, team work, and life-long learning (American Accounting Association, 1986). The primary employers of undergraduate accounting majors have found current graduates to be unequal to these demands and are calling for significant changes in accounting education (Williams, 1993). The Accounting Education Change Commission (AECC) was funded by the eight largest certified public accounting (CPA) firms to provide guidance to accounting educators, and accounting educators throughout the country acknowledge that change is necessary (Needles, 1993).

However, business schools nationwide are either not adopting or making only token gestures toward adopting the change recommendations of the AECC in introductory accounting (Holt and Swanson, 1993). In interviews with accounting professors, Needles (1993) learned that these professors fear negative student reaction to departures from the rule-oriented and structured-problem curriculum that has been traditional in accounting.

Many of the AECC's recommendations seem ideal for implementation through cooperative learning pedagogy. Cooperative learning pedagogy has been repeatedly found to foster and/or incorporate learning to solve unstructured problems, working in teams, active learning, and life-time learning skills (Slavin, 1990), skills and pedagogy stressed and endorsed by the AECC. Moreover, research in education and psychology points to positive reactions from participating students toward their professors and the academic subject matter (Goodsell et al., 1992). Most of the research on cooperative learning pedagogy has focused on school-aged children; little is known about this teaching-learning strategy for adults and even less is known about its efficacy in college-level accounting education. Therefore, this study addressed the following question: Should cooperative learning be employed as an instructional strategy in post-secondary accounting courses as a means to implement the AECC's "new approach" to accounting education?

Although a few schools are implementing minor curricular changes and a very few are partially adopting cooperative learning pedagogy in introductory accounting, simultaneous and rigorous research into the effects of these implementations and adoptions is not yet being conducted (Holt and Swanson, 1993). This research is a crucial step toward validating or discarding accounting

professors' reluctance to implement changes designed to advance accounting student achievement to higher levels and additional skills.

## CHAPTER 2 A REVIEW OF THE AECC AND COOPERATIVE LEARNING

### THE RECOMMENDATIONS OF THE ACCOUNTING EDUCATION CHANGE COMMISSION

The Accounting Education Change Commission (AECC) was initiated and funded by professional accounting firms that criticized the ill preparedness of college graduates to enter the profession with necessary skills for success (Williams and Sundem, 1990). The AECC argues persuasively for major changes in approaches to accounting education (Williams, 1993). More specifically, in Position Statement Number One (AECC, 1990), the AECC called for college learning experiences which would improve graduates' communication, intellectual, and interpersonal skills.

An outline of traditional teaching versus AECC directives for approaches to accounting education is provided in Table 1. This table is taken from Williams (1993, p. 81) and details the extent of the changes directed. Further discussion of the "New Approach" as outlined in Table 1 immediately follows. The entire "New Approach" was undertaken in the teaching described in this research, and "New Approach" items numbered one through four were implemented through the cooperative learning pedagogy described later in this chapter.

Table 1  
A Comparison of the Traditional Approach and  
the New Approach in Accounting Education

Traditional Approach	New Approach
Heavy emphasis on technical courses in accounting	Broader emphasis on general education and business and organizational knowledge
Little integration on subject matter--accounting courses taught in isolation	Heavy integration of tax, managerial accounting, financial accounting, systems and auditing
Heavy emphasis on calculating one right answer	<b>1. Increased emphasis on solving unstructured problems, such as use of cases</b>
Heavy emphasis on teaching rules	<b>2. Increased emphasis on the learning process-- learning to learn</b>
Heavy emphasis on teaching to the Uniform CPA Examination	Recognition of a broader objective
Little attention to communication and interpersonal skills	<b>3. Increased emphasis throughout accounting, presentation and interpersonal skills</b>
Students as passive recipients of knowledge	<b>4. Students as active participants in learning</b>
Technology used sparingly in noncomputer courses	Use of technology integrated throughout accounting curriculum
Introductory accounting focused on preparing external financial reports, journal entries, posting, etc.	Introductory accounting focused on role of accounting in society and in organizations; increased focus on using accounting information for decision making

Highlighted and numbered New Approaches are expected to be attainable through cooperative learning techniques.

Table taken from Williams (1993, 81).

## THE "NEW APPROACH" IN ACCOUNTING EDUCATION

**Broader emphasis on general education and business and organizational knowledge.** The AECC echoed the 1988 Report of the American Institute of Certified Public Accountants (AICPA) which states that in addition to obtaining an essential accounting and business foundation, accounting students should also possess a general understanding of cultural diversity, economic, political, and social forces in a dynamically changing world, i.e., general education. The need for general business and organizational knowledge over emphasis on technical accounting skills is clearly stated in a 1990 invited editorial in the American Accounting Association (AAA) education journal, Issues in Accounting Education, entitled, "There's Trouble--Right Here in Our Accounting Programs: The Challenge to Accounting Educators" (Patten and Williams, 1990).

**Heavy integration of tax, managerial accounting, financial accounting, systems and auditing.** Accounting education has traditionally taught each accounting specialty in a separate class and with particular care not to confound a given class with references to other accounting specialties (Bedford and Shenkir, 1987). Hence, managerial accounting classes do not consider the implications of financial accounting decisions, financial



accounting classes do not incorporate the impact of taxes on financial reporting, etc.

**Increased emphasis on solving unstructured problems, such as use of cases.** Accounting classes are typically dominated by lecture and problem solving demonstrations (Hurt, 1992). In fact, the accounting educational system has used the lecture, problem demonstration, emphasis on rule and regulations method of educational delivery for the past 50 years (Bedford, 1987). This narrow focus lends to memorization tactics with little or no regard for promoting analytical reasoning or interpersonal skills (Weyer, 1993).

**Increased emphasis on the learning process--learning to learn.** Memorization of rules, regulations, and accounting techniques has failed to develop the "...process of inquiry" (Sundem, et al. 1990, p. 51). This process of inquiry includes searching for information, identifying problems, and using judgement to make decisions.

**Recognition of a broader objective.** Accounting education has traditionally stressed passing the CPA examination which does not demand a firm understanding of business functions and objectives beyond the scope of entry-level technical knowledge (Patten and Williams, 1990).

**Increased emphasis throughout the accounting curriculum on writing, presentation and interpersonal skills.** Williams (1993 p. 80) states, "The traditional accounting curriculum paid little heed to developing students' communication and interpersonal skills." The skills lacking are cited as the abilities to write, speak, listen, and organize issues effectively, and also include the ability to work in groups and interact with culturally and intellectually diverse people (AECC, 1990).

**Use of technology integrated throughout accounting curriculum.** Accounting commonly has used computer and other technology almost exclusively in one accounting information systems course (Hurt, 1992). In practice computers and other technology are integral parts of all accounting functions.

**Introductory accounting focused on the role of accounting in society and in organizations; increased focus on using accounting information for decision making.** Introductory accounting courses traditionally have been devoted to bookkeeping, the how to keep accounting records. The AECC's (1992) second position statement entitled, "The First Course in Accounting," recognizes the former stress on bookkeeping and decries the lost opportunities to instill in all business students the role of accounting information in the functioning of an orderly society and economic decisions.

## COOPERATIVE LEARNING

There is wide consensus by education researchers as to certain benefits from and techniques in cooperative learning pedagogy (Slavin, 1989/1990). The benefits and techniques identified with cooperative learning that can be used to promote the AECC recommendations follow. An expansion of the cooperative learning literature is included in Appendix A.

Achievement and Unstructured Problems. Cooperative learning pedagogy has been hailed as a method for improving achievement in accounting classes (Cottel and Millis, 1993). The effectiveness of cooperative learning in promoting academic achievement in a wide variety of disciplines is well documented (Slavin, 1990 and 1993; Johnson and Johnson, 1989; and Johnson, et al., 1981).

Moreover, cooperative learning pedagogy fosters critical thinking such as solving unstructured problems and cases where there are more than one possible solution (Slavin, 1991; Gabbert, et al., 1986). This is directly applicable to "New Approach" recommendation 1 (bold face number 1 in Table 1).

Student Attitudes toward Cooperative Learning. Practitioners report students thrive and enjoy learning under cooperative learning pedagogy. Goodsell, et al. (1992 p. 87), summarize these reports as "...students

report that they prefer collaborative types of instruction and that they gain a greater interest in education in general...." This preference is strengthened by research which suggests that many student attitudes improve with cooperative learning pedagogy (Kagan, 1992; Slavin, 1990; Johnson and Johnson, 1989).

Team Work and Interpersonal Skills. Team work and interpersonal skills benefit from cooperative learning (part of bold face recommendation number 3 in Table 1) (Slavin, 1991 and 1990; Johnson and Johnson, 1989). In fact, Slavin (1991, p. 70) lauds cooperative learning "...as a way to prepare students for an increasingly collaborative work force." The involvement in cooperative learning of working for group goals is thought to be responsible for the improvement in team work skills (Slavin, 1990). Achieving these goals through team work is thought to be responsible for improving interpersonal skills (Kagan, 1992).

Learning to Learn and Active Participation. Learning to learn and active participation (bold face recommendations numbers 2 and 4 in Table 1) are integral parts of cooperative learning pedagogy (Slavin, 1990; Johnson and Johnson, 1989; Kagan, 1992). Students become active participants who are responsible for their own and their team mates' learning. Teachers serve as resources and facilitators of learning rather than as lecturers

(Cuseo, 1993). Hence, along with taking responsibility for their learning, students discover how to search out problems and solutions.

Effects on Professors' Attitudes and Their Evaluations by Students. The benefits to professors who use collaborative learning (of which cooperative learning is a subset) are summarized by Goodsell, et al., (1992 p. 87) as follows:

...faculty members who use this style of instruction [collaborative learning] report a renewed sense of enjoyment in teaching, a greater degree of communication with their peers, and more positive student evaluations.

#### **REQUIREMENTS OF COOPERATIVE LEARNING**

Although controversy exists over the manner in which the basic elements of cooperative learning are best implemented (Slavin, 1989/1990), there is substantial consensus as to the five basic elements for cooperative learning as enumerated by Johnson and Johnson (1989). These elements echo the elements found in Kagan (1992), Slavin (1990), and Johnson and Johnson (1989). The elements are as follows:

- Positive interdependence. Students must believe that they are responsible for both their own learning and the learning of the other members of their group.
- Face-to-face promotive interaction. Students must have the opportunity to explain what they are learning to each other and to help each other understand and complete assignments.

- Individual accountability. Each student must demonstrate mastery of the assigned work.
- Social skills. Each student must communicate effectively, provide leadership for the group's work, build and maintain trust among group members, and resolve conflicts within the group constructively.
- Group processing. Groups must stop periodically and assess how well they are working and how their effectiveness may be improved

### **INTERVIEWS WITH OTHER SCHOOLS**

As a prelude to this study, in order to learn more about what other schools across the nation were doing in introductory accounting classes, Holt and Swanson (1993) conducted extensive interviews with introductory accounting coordinators in the top undergraduate business schools as indicated by Gourman (1989), the AECC undergraduate grant award schools and 20 randomly selected business schools. Accounting coordinators revealed that cooperative learning techniques were not in general use in 1993 (Holt and Swanson, 1993).

After obtaining the name of the introductory accounting coordinator for each selected school from that school's department head, the researchers scheduled a telephone appointment with the coordinator. Coordinators were told that the researchers had been asked by their dean to determine how other "good" schools structured their introductory accounting courses. The coordinators

were told that, although the results of the interviews would be public, their names and specific information about their schools would not be shared without their permission.

Research questions explored by Holt and Swanson were:

- 1) How are colleges and universities responding to the Accounting Education Change Commission's (AECC) directives in introductory accounting classes? and 2) Do these introductory accounting classrooms use cooperative learning techniques?

Each interview took from 25 to 55 minutes. The questions asked were open-ended and designed to elicit complete responses. The researchers asked for more details and/or follow-up questions as indicated.

The first questions elicited recent changes in the introductory accounting courses and especially any changes made in response to the AECC. Next, information about the grading structure and competition levels in the class was requested. Particular attention was given to whether the students were evaluated relative to other students in the class or by absolute and predetermined standards.

The questions that followed were more structured and sought information about use of group work and how students were evaluated throughout the course. Specific information about use of homework and/or examination study groups as well as group projects and/or cases was

obtained. The coordinator's opinions about the levels of competition perceived by students in the different phases of the class were elicited.

While some of the schools had made substantial changes in response to the AECC's recommendations (i.e., 20 percent of the top 25 schools, 80 percent of the ten AECC undergraduate grant award schools, and five percent of the 20 randomly selected schools), Holt and Swanson report that most of the schools interviewed had limited their response to the AECC's recommendations to teaching introductory accounting with more of an emphasis on the users of financial accounting statements.

Only two of the top 25 business schools, one of the ten AECC undergraduate grant award schools, and one of the 20 randomly selected schools interviewed were using cooperative learning in introductory accounting. The accounting professor teaching and coordinating introductory accounting at the AECC grant award school using cooperative learning reported substantial student resistance to the change from the customary lecture and problem solving demonstrations (Jones, 1993). Substantial numbers of students complained that the work of learning was being cast on their shoulders rather than the professors' shoulders.

Furthermore, interviews and seminars with accounting professors, initiated by other concerned academicians,



indicated that the professors were reluctant to initiate AECC recommendations, and especially reluctant to initiate unstructured problems, learning to learn, active learning, and group work (Needles, 1993). Needles reported that accounting professors feared that students would resist the changes from traditional instruction and retaliate with low evaluations of the professors. Moreover, accounting professors were uncomfortable with their ability to use pedagogical techniques required to achieve the recommendations and reluctant to exert the corresponding extra work.

Although some curricula are being changed in response to the AECC's directives and some cooperative learning techniques are being used, the results are not being systematically studied. Research to determine the individual and combined effects of curriculum changes and cooperative learning techniques is needed to guide business schools in redesigning introductory accounting courses.

### CHAPTER 3 METHOD

This chapter begins with a discussion of the subjects and the procedures used to initiate the research. Second, the research questions are delineated. Third, the operationalization of cooperative learning requirements and the AECC's recommendations summarized in Chapter 2 are discussed.

#### SUBJECTS

Ninety-six students representing all students enrolled in the first introductory accounting class at a small West Coast college after the last date to drop the course participated in the research. These students were primarily freshmen and sophomores, although approximately 16 percent were juniors and seniors.

#### PROCEDURES

Initiation of the Research. The assignment of an extensive and comprehensive case (unstructured problem) to be completed in groups and a final examination (structured problem) over quantitative elements of the case to be separately taken by each student was presented as the capstone learning experience of the introductory accounting course. Appendices D and E include copies of

the final examination (structured problems) and the case (unstructured problem), respectively. An unstructured problem can be characterized as one in which multiple solutions are possible and requires the application of higher cognitive levels of thinking such as making judgements or evaluative determinations. A structured problem can be characterized as one in which there is only one correct solution, and the solution can be derived through the application of a prescribed formula or equation (Perspectives on Education, 1989).

Students were randomly assigned to balanced groups of four students for the three-week duration of the research. The groups were balanced in the sense that one student from each quartile of academic performance in the class, as measured by cumulative test scores to date, was randomly assigned to each group.

The students were informed that the purposes of the case (unstructured problem) and examination (structured problem) were:

- 1) To provide exposure to real and complex financial statement analysis which includes unstructured problem solving.
- 2) To provide a realistic career task of learning to learn by requiring use of many information sources and the use of the professor only as a learning facilitator.

- 3) To promote their retention of concepts learned by requiring active student participation in the learning process.
- 4) To provide a realistic business situation for development of both team work and interpersonal skills.

The importance to subsequent business career success of all of the above purposes of the assignment was reasserted when appropriate throughout the three weeks duration of the research.

Field Study. The devotion of class time and implementation of extensive additional office hours provided the researcher with rich opportunities to observe the students' reactions to both cooperative learning pedagogy and the other recommendations of the AECC. Additional qualitative research was initiated when the researcher noted what was perceived as intense resistance on the part of the students to both the capstone project and its administration through cooperative learning pedagogy.

After the first week of the research, an accounting instructor not associated with the research was employed to conduct open-ended interviews with the students. Participation by the students was optional. However, one-half letter grade extra credit was offered in return for

participation, and anonymity was guaranteed. Eighty-two students chose to participate in the interview session.

The interviews were semi-structured in that each student was asked to respond to whether and how the above delineated purposes of the capstone case should be implemented in introductory accounting. Each interview lasted about one-half hour, and the students were asked to provide feedback on all other class issues they felt strongly about. A copy of the interview instrument is included in Appendix B.

At the time of the examination over the case materials students were offered additional extra credit for completing a final debriefing instrument. The debriefing instrument elicited on ten point scales students' perceived importance of traditional aspects of introductory accounting courses in addition to their perceived importance of the pedagogy used in this research and their evaluation of the professor. A copy of the debriefing instrument is included in Appendix C.

An accounting professor independent of this research was employed to analyze and grade the completed cases (unstructured problems) and evaluate the peer evaluations. The final examination (structured problems) was objective and, therefore, graded by the researcher. The final examination is included in Appendix D.

## RESEARCH QUESTIONS

This study addressed the following research questions:

1. Will student teams demonstrate high levels of achievement on the case (unstructured problem)?
2. Will students demonstrate a high level of achievement on the examination (structured problems)?

In addition, the following research questions were posed to facilitate the understanding of why students may have achieved, or may not have achieved, the desired outcomes expected in the former two questions:

3. How will students react to the use of cooperative learning and implementation of the AECC's recommendations in introductory accounting?
4. How will students perceive the importance of team work in introductory accounting?
5. How will students perceive the importance of learning to learn in introductory accounting?
6. How will students perceive the importance of active participation in the learning process in introductory accounting?
7. How will students evaluate the professor's teaching effectiveness in introductory accounting?

## OPERATIONALIZATION OF COOPERATIVE LEARNING

The operationalization in this research of the five basic elements of cooperative learning enumerated in Chapter 2 are as follows:

- **Positive interdependence.** Students were given instruction in the importance of helping their group mates learn for their own learning. Moreover, a comprehensive case (unstructured problem) was assigned to be done as a group project and with the advance information that their examination (structured problems) would be over problem computations included in the case.
- **Face-to-face promotive interaction.** Students were given class time to work with their group mates to clarify their understanding of solutions to the case. Agreement had to be reached before the case was handed in.
- **Individual accountability.** Students were aware that they would be given an examination over the quantitative sections of the case.
- **Social skills.** Students were required to complete anonymous peer evaluations of their group mates' contributions.
- **Group processing.** Group processing was facilitated by conferences with the professor.

## OPERATIONALIZATION OF THE AECC RECOMMENDATIONS

The operationalization in this research of the AECC's recommendations enumerated in Chapter 2 are as follows:

- **Broader emphasis on general education and business and organizational knowledge.** The case requirements included writing and communication skills. In addition, the case was designed to force thought about general business management and organization.
- **Heavy integration of tax, managerial accounting, financial accounting, systems, and auditing.** The case requirements were to analyze and understand financial statements (financial accounting). In order to complete the case, the student needed to understand the auditor's role in financial statements, make inferences into the quality of management, and understand the consequences of taxes on financial statement analysis.
- **Increased emphasis on solving unstructured problems, such as the use of cases.** The case required about 20 hours of analysis. Many of the case questions required solving unstructured problems.
- **Increased emphasis on the learning process-- learning to learn.** Students were told that the professor was a knowledge facilitator. Student



effort was required to find sources for their analyses and insight into appropriate inferences.

- **Recognition of a broader objective.** The case required broad knowledge of financial accounting without the technical detail of the CPA examination. The primary purpose of the case was to teach how financial statement users analyze financial statements. Demonstration of the broader objective is clear from the assignment of 50 percent of the students' grades to performance on the case and case based examination.
- **Increased emphasis on writing, presentation, and interpersonal skills.** The case required professional presentation and strong writing skills to be demonstrated. The interpersonal skill emphasis was inherent in the required peer review.
- **Students as active participants in learning.** As indicated above, completing the case required active learning as the professor refused to act in a capacity other than as learning facilitator.
- **Use of technology.** Advanced word processing skills were required (some students did not have these skills) and students were encouraged to use spreadsheets to facilitate their analyses and presentation.

- Focus on the role of accounting in society and in organizations; increased focus on using accounting information for decision making. The entire course was refocused to meet this recommendation. This focus culminated in the assignment of the case.

## CHAPTER 4 RESULTS

### ACHIEVEMENT ATTAINED

Research Question 1. "Will student teams demonstrate high levels of achievement on the case (unstructured problem)?" The case assigned as the capstone project consisted of structured and unstructured problems. That is, the case contained problems (ratios) that could be computed from formulas (structured) and problems which required applying knowledge to data (in the form of financial statements) in new formats and/or ways with multiple solutions possible (unstructured). The predictions of performance by the department head, the dean, and the professors with regard to the unstructured problems in the case was performance levels between 70 to 90 of the total of 100 points possible. It was not expected that any of the groups would be awarded all of the points. A copy of the case is included in Appendix E.

The cases were graded by an independent adjunct professor (the same professor who conducted the interviews) who had taught the same course before and who was familiar with the level of accomplishment expected in introductory accounting at the college where the research was conducted. Of the 24 groups, the independent adjunct professor awarded all of the possible points to 18 of the

groups. Three groups were awarded 99 of the 100 points, one group was awarded 97 points, one group was awarded 86 points, and one group was awarded 58 points. The independent adjunct professor reported that the problem solutions by the groups differed substantially for the unstructured problems, but that the quality level was very high.

The department head and the professors also reviewed the cases. The department head, the course professors, and three other accounting professors consulted (including the Dean) were surprised by the quality of presentation and thinking demonstrated. The team professor, who was familiar with performance levels in introductory accounting at schools with strong reputations and AACSB accreditation, believes that the level of performance demonstrated was comparable to those schools, except for the case receiving 58 points. The team professor had previously taught introductory accounting and had helped decide standards for introductory accounting at the University of Michigan, the University of Minnesota, and Iowa State University.

Hence, with the exception of one group, student teams demonstrated extraordinarily high levels of achievement on the unstructured problem. However, individual performance on the unstructured problems cannot be separated from the group performance since each group handed in only one

case. Nevertheless, the students reported spending between 20 and 45 hours on completing the case (combining group and individual time reported). Since the published expected time required for the case was between 15 to 20 hours, the high level of performance is explainable by the students' efforts.

The researcher talked with two members of the group that received only 58 points. These students complained that 1) two of their team mates did not do their share of the work assigned to them, and 2) they didn't even have enough time to do their part of the case. They stated that the professors could fail them on the case if they wanted to, but that it was not fair. (All of these team members received an F on the case. One team member received a C+ for a course grade, one received a D+, one received an F, and one withdrew failing without the permission of the professors.)

Research Question 2. "Will students demonstrate high levels of achievement on the examination (structured problems)?" All groups, except for the group receiving 58 points, successfully completed the structured problems in the case. Moreover, the examination was based entirely on structured problems similar to those in the case. The students were required to take the examination without their group mates' assistance. A copy of the final examination is included in Appendix D.

It was expected that achievement on the exam would result in higher examination scores than had previously been experienced using traditional lecture pedagogy in prior introductory accounting classes. The examination was structured so that high performance levels were thought to be attainable by all students in the course. In fact, the structured problems from which the examination was taken were available to the students in advance, and students were told they would need to bring a clean copy of the comparable financial statements with them during the final examination. Students did bring copies of the financial statements to the examination, and prior to the exam the professors checked each student's set of financial statements to assure that they had not written answers in them. Students had been told beforehand that their copies would be checked for cleanness. Accordingly, the students were perceived by the researcher to have a high degree of control over their examination scores.

Nevertheless, the distribution of scores had a wide variance. The test was graded on a predetermined absolute grading scale where 90-100 percent was an A, 80-89 percent was a B, 70-79 percent was a C, 60-69 percent was a D, and below 60 percent was an F. Nineteen percent of the students received an A, 36 percent a B, 21 percent a C, 16 percent a D, and 8 percent received an F.

The researcher and team professor predicted that the students would receive A's and B's on the examination, whereas the department head was not as optimistic. Nevertheless, the students receiving D's and F's (24 percent) failed to meet any of the educators' expectations. Hence, overall, students did not demonstrate high achievement levels on the structured problems. While the majority of students performed well, a substantial number of students failed to meet minimum expectations and standards.

The wide divergence between the very high performance on the cases, completed as a group, and the lower than expected performance on the examination, taken as individuals, is explained by the composition of the case task and the individual students in each group. Each student in a group received the same grade on the case. That is, extraordinary performance by one (two) members of each group resulted in high performance on the case and corresponding high score for all group members. On the test, each student was accountable for their own learning level. That is, students were told that they would need to know terminology from specific chapters in the text, and they would need to know how to compute financial ratios. Since the students could obtain the financial statements a week before the exam date they could practice using the formulas and ratios explained in their text.

The formulas and ratios needed for the examination were the same formulas and ratios they had used to complete the structured questions in their case projects. Hence, the students who failed to rise to the academic occasion received high scores on the case and failed or received D's on the examination. Peer evaluations support this theory. Students were required to turn in confidential peer evaluations when the cases were completed. In most instances, team members reported one or two members unwilling to work or who put forth minimal effort. In summary, the high standards for academic achievement on the case led some students to excel beyond expectations. Other students failed to meet even the minimum standards for satisfactory performance required on the examination.

#### **STUDENT ATTITUDES AND REACTIONS**

Research Question 3. "How will students react to the use of cooperative learning and implementation of the AECC's recommendations?" The students' reactions to the capstone case group assignment which was used to implement the AECC's recommendations and included cooperative learning pedagogy were immediate, vocal, intense, broadcasted, and continuing throughout the term. Six students and three parents complained to the Dean of the Business School, one parent complained to the Dean of



Students, and many students complained forcefully to the professors (the researcher and a team professor).

The students' reactions to the capstone case were in part a reaction to the case following earlier research and pedagogy change. This earlier research and pedagogy change included higher grading standards, interdependent grades, and emphasis on using accounting information instead of the traditional bookkeeping and memorization of rules. This research and pedagogy change are described in Chapter 5.

The capstone case required comparative analysis of the audited financial statements of K Mart and Wal Mart. In making this transition from the textbook to real world financial statement analysis, the students were exposed to new vocabulary and interpretation requirements. The case required computation of financial ratios for which formulas appeared in the textbook followed by analyses which required understanding of relationships among and within the financial statements and generally accepted accounting principles. The expected completion time for the case was between 18 and 22 hours. The case included questions requiring differing levels of research, accounting knowledge, and critical thinking. Although the case was designed and designated for introductory accounting, complete and insightful solutions to several

of the questions required integration of accounting and financial statement concepts at a high level.

In order to understand student objections to implementation of the AECC's recommendations and cooperative learning group work, and to hear students' complaints, dispel rumors, and answer questions, the professors instituted at least four joint office hours a day. In addition, students displaying marked agitation that did not diminish rapidly were invited out to coffee by the researcher and team professor in order to change to a more relaxed atmosphere. The coffee out provided the time required to explain at greater length the benefits to the student of implementing the AECC recommendations (including the capstone project and curriculum changes) and cooperative learning pedagogy.

One and a half weeks into the research (capstone project), the researcher organized an independent qualitative inquiry. An independent adjunct professor was hired to conduct anonymous, structured but opened ended interviews with all students willing to be interviewed for one-half letter grade extra credit. The independent adjunct professor had been provided with guidelines about qualitative research and interviewing skills by the researcher and team professor before the interviews (Patton, 1990; Kerlinger, 1986). Eighty-two of the 96 students participated in an interview. Although the

students participating were granted anonymity, the adjunct professor kept a list of all students enrolled in order to determine who received extra credit. All students noted by the professors as visible opponents of the AECC and cooperative learning changes were recorded as participating in an interview.

In addition to soliciting information about what was going right and wrong in the classes, group work, and other interactions among the students and the professors (and the Dean), the interview instrument was designed to reinforce the purposes of the new curriculum and pedagogy. A copy of the interview instrument is included in Appendix B.

The protocol for the interviews began with general pleasantries followed by the adjunct professor asking the students to read the interview instrument and, if they felt like it, jotting down their comments. Next the adjunct professor took notes as the students discussed the questions. The adjunct professor also probed for and noted attitudes about the class, the business school, higher education, and the professors. Students were reminded that their comments were confidential, and that their feelings and impressions would be valuable to accounting education.

An independent senior honors student was employed to review and analyze the students' responses to the

independent interviews. This student categorized and noted frequencies of similar responses from the jottings of the students and the adjunct professor conducting the interviews.

Summaries of the categories of complaints heard in the professors' office hours and coffee meetings and discussed with the adjunct professor in the independent interviews follow.

Achievement Level Required and Course Content.

Although the case was adapted from an elementary accounting case book, it required integration of the material presented to date and unstructured problems in financial statement analysis. The course content did not include extensive bookkeeping, the traditional first accounting course subject matter.

One of the non-traditional honor students asserted that he had shown the case to his wife, a CPA, who allegedly said it was "beyond her and beyond any college accounting classes she had ever taken."

The charges that "...even a CPA couldn't get a decent grade in this class" were countered by explanation that the ability to read actual companies' financial statements (in this case K Mart and Wal Mart) was a major goal of the class, and that the questions were within the scope of introductory accounting texts. The students were invited to check this out with the accounting department head, and

many of the students did see the department head. The students were also invited to ask the professors specific questions, and the accounting lab was opened for questions for additional hours.

Student quotations that represent typical objections to the course (and case) content and difficulty as documented by the independent adjunct professor are included in Table 2. In summary, students felt that the case was too difficult for an introductory accounting course. Students indicated they expected introductory accounting to be more like bookkeeping. Only two students commented to the professors that they believed that the difficulty of the case was appropriate.

Team Work Required. Two questions addressing team work were included in the independent interview instrument. The first question was:

- Accounting educators have found that introductory accounting students learn more about solving real world accounting problems if they work together in mixed groups. How would you implement this in introductory accounting?

The categorization of the students' responses during interviews to this question are presented in Table 3. Students at the professors' office hours and in the interviews did not disagree with the premise that group work facilitated learning to solve real world accounting

**TABLE 2**  
**STUDENT QUOTATIONS:**

ACHIEVEMENT LEVEL REQUIRED AND COURSE CONTENT

"I believe students should just learn the basic concepts of accounting; not plunge into someone's financial statements."

"...case is too difficult for beginning class."

"...material is too difficult."

"...class was waste of time..got no foundations in accounting."

"...didn't like not using debits and credits."

(Case study) "...feel it is advanced work -- beyond CPA."

"...case is too difficult for beginning class."

"...hard to see correlation between terminology of the two companies."

"I think introductory accounting should focus more on bookkeeping...."

**TABLE 3**  
**QUALITATIVE INTERVIEWS:**  
**FIRST TEAM WORK QUESTION**

Accounting educators have found that introductory accounting students learn more about solving real world accounting problems if they work together in mixed groups. How would you implement this in introductory accounting?

	Total	Percent
1. Initiate groups sooner and put more emphasis on importance of groups.	18	22%
2. Allow students to choose their own groups.	14	17%
3. Assign more group projects/ assignments and spread them out over term.	13	16%
4. The way it was implemented should have worked fine.	11	13%
5. Work in groups but grade on an individual basis for tests.	8	10%
6. Groups are good, but in introductory accounting class you should stick to basic accounting concepts.	7	9%
7. Allow more class time for groups to work on assignments and cases.	6	7%
8. Misc.	4	5%
9. Didn't say	1	1%
	82	100%

problems. Only nine percent of the students interviewed remained against using group work in introductory accounting (Category 6, Table 3). Twenty-two percent of the students thought groups should be initiated sooner and an additional 16 percent thought more group work was appropriate (Categories 1 and 3).

The second team work questions was:

- Employers are complaining that business graduates have trouble forming and working in teams. They say that business graduates tend to want to work individually, and that the teamwork that is in everyone's best interest doesn't happen. As a result, many business schools are now requiring a lot of group work. What do you recommend for (this college)?

The categorization of interviewee responses to this question are presented in Table 4. Responses to the specific question seemed pro group work and constructive. On the other hand, although students appeared to agree with the general concept of group work, queries of students in the professors' office hours and by the independent interviewer revealed that students were unhappy with how their groups were functioning and/or specific group work tasks. Approximately 18 percent of the students did not believe that they should be required to participate in group work in introductory accounting at their college (Categories 2 and 8, Table 4).



**TABLE 4**  
**QUALITATIVE INTERVIEWS:**  
**SECOND TEAM WORK QUESTION**

Employers are complaining that business graduates have trouble forming and working in teams. They say that business graduates tend to want to work individually, and that the teamwork that is in everyone's best interest doesn't happen. As a result, many business schools are now requiring a lot of group work. What do you recommend for SOSOC?

	Total	Percent
1. Get students involved in groups as early as possible because they will be beneficial.	28	34%
2. Should emphasize group work in upper division classes.	11	13%
3. Use groups but don't make someone's grade dependent on other members.	11	13%
4. Allow to choose own group.	8	10%
5. Assign more equal combination of group and individual projects and assignments and distribute equally throughout the term.	8	10%
6. Offer a small group communication/problem solving/teamwork class.	5	6%
7. Allow more time in class for group work.	4	5%
8. Group work should be optional. Students should be able to choose if they want a class emphasizing group work.	4	5%
9. Misc.	3	4%
	82	100%

**TABLE 5**  
**STUDENT QUOTATIONS:**  
**TEAM WORK--PERCEIVED LACK OF CONTROL**

"I asked my group mates to come to work together, but none of them showed up for the meeting, so I think I had bad luck with my group mates."

"I felt that the group I was in, no one knew what they were doing."

"...you can't make people do something they don't want...there were people in this class that didn't work in the group they were assigned."...."some people would rather work alone."

"For some people this (group work) doesn't work well ...because they work slower and can work it out and learn better on their own."

"...felt like she was being asked to teach (group mates)."

"...some people in group don't pull their weight."

"...group just sits and complains work is too hard."

team work--"...if the project requires critical thinking then I feel, at least for me, that this should be done individually."

"...you can't force the students to work in a group."

"Maybe the groups should be selected on the basis of a personality/goal questionnaire. The groups don't often 'gel' because we don't all have the same goal....."

"...offer two sections of introductory accounting...for someone uncomfortable with group work offer the more traditional class whereas someone who prefers the benefits of groups allow them to take this class."

"...let students choose their own work styles... individually or with a group."

The adjunct professor conducting the interviews without prompting reached a conclusion that confirmed the observations of the professors. This conclusion was that none of the students talked with were willing to take more than nominal responsibility for making their groups work. This reaction from students was similar to reactions experienced by Jones, (1993). Representative quotations recorded by the adjunct professor regarding students' perceived lack of control over how their groups worked (did not work) are presented in Table 5. The implications of this conclusion are discussed in Chapter 6.

Learning to Learn and Active Learning. Throughout the course and at the beginning of this research, the researcher explained the goals of the AECC including the benefits of active learning and learning to learn. The researcher and the team professor structured the capstone project to require active use of learning resources and integration of previous course work to answer questions. This active learning included use of the professors as sources of how to find information and how to structure problems. Memorization of lectures and the text book alone was not sufficient to complete the case. (Moreover, learning limited to memorization and regurgitation was discouraged.)

During the professors' office hours, students wanted the professors to show them exactly how to work the case and solve problems on the upcoming exam. Repeated requests were received to work demonstration problems which had only one right answer and the format of which could be memorized. Students resisted going to the library and finding and using supplemental materials. Students repeatedly requested that class time be devoted to lectures and sample problems to show them how to work the case and examination problems completely before they attempted to do so.

The categorization of the students' interview responses to the following question are depicted in Table 6.

- Educators and employers tell us that we must teach life time learning. That is, business students must learn to work independently and in groups actively searching for required new knowledge. How can we teach this in introductory accounting?

Eighteen percent of the students stated that they wanted a solid base provided by the professor before attempting active learning (Category 1, Table 6). The adjunct professor conducting the interviews provided the insight that the students expected to be shown precisely what to do and then asked to do it. The adjunct interviewer did not believe that the subsequent

categorization of the learning to learn/active learning question (Table 6) adequately captured the students reluctance and discomfort level. Representative quotations jotted by the interviewer (or by the students) in response to further probing are documented in Table 7. These quotations also reflect the comments made to the professors and reported by the head of the department and the dean.

**TABLE 6**  
**QUALITATIVE INTERVIEWS:**  
**LEARNING TO LEARN AND ACTIVE LEARNING**

Educators and employers tell us that we must teach life time learning. That is, business students must learn to work independently and in groups actively searching for required new knowledge. How can we teach this in introductory accounting?

	Total	Percent
1. Make sure students get a solid accounting base first	15	18%
2. Give real life problems to work on; break down into individual parts then have students discuss or present their results as a group.	8	10%
3. The format used was good, but a bit unclear in the beginning - too much emphasis on group grades.	10	12%
4. Assign more equal amounts of individual and group work throughout the term.	14	17%
5. Do more group projects and assignments in class.	3	4%
6. Misc.	14	17%
7. Require group participation.	4	5%
8. Instructors need to be more motivating, make information more fun and interesting; remove unmotivating things like group grading on tests.	5	6%
9. Didn't say.	9	11%
Totals	82	100%

**TABLE 7**  
**STUDENT QUOTATIONS:**  
**LEARNING TO LEARN AND ACTIVE LEARNING**

"I don't think the ability to learn can be taught; it would seem to be something that an individual develops on their own."

"I doubt this can be taught -- it must be learned."

"..."I don't think you can; introductory accounting needs to teach ACCOUNTING!" (teach life time learning)

"I don't feel I was taught very well...the material was very rough, and I feel we needed more guidance."

"The professor needs to be sure the students understand the material."

"Get different teacher so I could learn this stuff more thoroughly."

"...professor blames everything on the students, she takes little responsibility for the failure of her students."

"...this is too tough a class to be also teaching other (learning) skills."

"...feels like learning took place on his own...at the 200 level teaching should take place."

"...instructor depended on students to teach themselves...felt teacher should have gone over until everyone understood."

In summary, the student reaction to the use of cooperative learning and implementation of the AECC's recommendations was not positive. Students felt that the course was too difficult for introductory accounting and that working in groups should be optional. Many students felt that their group mates did not know what they were doing or did not carry their fair share of the work.

#### **IMPORTANCE OF TEAM WORK**

Research Question 4. "How will students perceive the importance of team work in introductory accounting?" The students' professed opinion of the importance of team work in solving unstructured accounting problems and cases was elicited in the final debriefing questionnaire administered after the final examination. On the 10 point scale with 1 labeled "no importance" and 10 labeled "extreme importance," the mean value was 7.4 with a standard deviation of .23 and a median value of 8. Scores ranged from two to ten with one-fourth of the students rating the importance value at six or below and one fourth of the students rating the importance value at ten. Accordingly, students did not find team work to be extremely important in introductory accounting. However, it is clear that at least one-fourth of the students did rate team work as extremely important.



### IMPORTANCE OF LEARNING TO LEARN

Research Question 5. "How will students perceive the importance of learning to learn in introductory accounting?" The students' professed opinion of the importance of learning to learn in introductory accounting was also elicited on a ten point scale with one labeled no importance and ten labeled extreme importance. The mean score was 8.4 with a standard deviation of .18, and the median score was 9. The scores ranged from 3 to 10; however, the score of three was an outlier and over one-fourth of the scores were ten. Accordingly, students did find learning to learn extremely important in introductory accounting.

### IMPORTANCE OF ACTIVE LEARNING

Research Question 6. "How will students perceive the importance of active participation in the learning process in introductory accounting?" The student's professed opinion of the importance of active participation in the learning process was also elicited in the final debriefing questionnaire on the same ten point scale and with results very similar to those for the importance of learning to learn. The mean was 8.3 with a standard deviation of .19, and median score of 9. The scores ranged from 3 to 10, but the 3 was an outlier. Over one-fourth of the students

rated the importance as a ten. Accordingly, students did perceive active participation in the learning process to be extremely important in introductory accounting.

#### **STUDENT EVALUATIONS OF THE PROFESSOR**

Research Question 7. "How will students evaluate the professor's teaching effectiveness in introductory accounting?" The teacher evaluations on the researcher were filled out by the students under the supervision of the department head as is customary. On the general question which is used to determine overall teaching effectiveness the researcher's mean score was 3.86 on a seven point scale with seven representing "outstanding," four representing "competent," and one representing "unsatisfactory." While teaching two sections of the same course but with traditional curriculum and pedagogy the preceding year (fall term), the researcher's mean score was 4.95. A  $t$ -test between these two means indicated that the difference was significant ( $t=4.07$ ,  $p=.0001$ ). Therefore, students evaluated the professor's teaching effectiveness significantly lower than previous students taking introductory accounting.

Examination of the comparative distribution of evaluation scores indicated that the mean score in this research was weighted downward substantially by the eleven percent of the students evaluating the researcher at one

and the twelve percent of the students evaluating the researcher at two. In the previous year's evaluation the researcher received no ones and only four percent twos.

In the evaluation related to this research four percent of the students scored the researcher at seven and 18 percent scored the researcher as a six. In short, almost a quarter of the students evaluated the researcher as outstanding. Hence, the evaluations reflected a wide variance in the students' overall evaluation of the researcher's teaching effectiveness.

In order to learn more about the beliefs of the students scoring the researcher so differently, a question identical to the general question on the teaching evaluations was asked on the final debriefing. The mean evaluation from the final debriefing questionnaire was 5.08, slightly higher than on the teaching evaluations, and this difference is attributable to measurement error. The distribution of scores on the final debriefing instrument closely matched the distribution of scores on the evaluations gathered under the supervision of the department head.

On the final debriefing questionnaire students were also asked to evaluate the importance of a variety of factors that students had expressed concern about and/or that the researcher considered course goals. The importance of the factors was scored by the students on a

ten-point scale with one representing no importance and ten representing extreme importance. These factors included the importance of:

- Knowledge of accounting to your career? (Mean score=7.8)
- Ability to read financial statements? (Mean score=7.8)
- Ability to keep a company's books? (Mean score=8.1)
- Decision making with financial statements? (Mean score=8.1)
- Professor's lecture and demonstration problems? (Mean score=8.9)
- Critical thinking in introductory accounting? (Mean score=7.9)
- Study of general knowledge? (Mean score=8.2)

Thus, on average, students rated the traditional pedagogy of lectures and problems as more important than other factors and the traditional course content of bookkeeping as important as decision making with financial statements and more important than critical thinking.

In summary, students did not perceive team work to be important in introductory accounting. However, students did feel that learning to learn and active participation in the learning process in introductory accounting was important. Furthermore, students rated the professor's

teaching effectiveness significantly lower than students in previous introductory accounting classes with the same professor.

To learn more about the above factors as predictors of the professor's evaluation scores, a best subset regression was run using the maximum R-squared criterion. The one factor regression model with the most predictive power used importance of critical thinking as the independent variable (R-squared of .17). The two factor regression model with the most predictive power used importance of critical thinking in introductory accounting and importance of ability to read financial statements as independent variables (R-bar squared of .23). Models with more than two factors did not add significantly to predictive power. Although implications from this test are left for future study, there is some suggestion that the importance of critical thinking and the importance of decision making with financial statements provided the best model about which variables mattered in how students evaluated the professor.

## CHAPTER 5 DISCUSSION

This chapter will first discuss the prior research and how it may have affected the attitudes of the students in the current experiment as discussed in chapter 4. Secondly, student achievement will be addressed and compared with student achievement in prior classes in introductory accounting.

Student attitudes may have been affected by earlier participation in an experiment. Prior to the beginning of this research, all students had participated in an education experiment wherein bookkeeping and memorization of rules traditionally taught in the class were replaced with an emphasis on using and understanding financial statements. Moreover, each student spent three weeks and took one midterm in a treatment with either independent grades or interdependent grades and norm referenced grade schemes or criterion reference grade schemes. Students had been randomly assigned to groups of four and groups were randomly assigned to one of the four treatments. Each student was in one and only one of the four treatment cells. The design of this research is depicted in Table 8. In this earlier study, each student had been graded on the norm referenced basis for one test and the criterion referenced basis for the other. Additionally, for one of

**TABLE 8**  
**GRADING SCHEMES BY EXPERIMENTAL TREATMENT**

Interdependence of Achievement Measure	NORM REFERENCED	CRITERION REFERENCED
Independent Grade	<p style="text-align: center;"><u>TREATMENT 1</u></p> <p>Relative Student Performance on Examination</p> <p>Top 10% is an A  Top 11-25% is a B  Top 26-65% is a C  Below top 65% at  discretion of  professor</p> <p style="text-align: center;">AND</p> <p>Examination score  is based 100% on  the individuals  performance</p>	<p style="text-align: center;"><u>TREATMENT 3</u></p> <p>Percent Correct  on Examination</p> <p>90-100% is an A  80-89% is a B  70-79% is a C  60-69% is a D  Below 60% is an F</p> <p style="text-align: center;">AND</p> <p>Examination score  is based 100% on  the individual's  performance</p>
Interdependent Grade	<p style="text-align: center;"><u>TREATMENT 2</u></p> <p>Relative Student Performance on Examination</p> <p>Top 10% is an A  Top 11-25% is a B  Top 26-65% is a C  Below top 65% at  discretion of  professor</p> <p style="text-align: center;">AND</p> <p>Examination score  is based 70% on  the individual's  performance and  30% on the  average score of  their teammates</p>	<p style="text-align: center;"><u>TREATMENT 4</u></p> <p>Percent Correct  on Examination</p> <p>90-100% is an A  80-89% is a B  70-79% is a C  60-69% is a D  Below 60% is an F</p> <p style="text-align: center;">AND</p> <p>Examination score  is based 70% on  the individual's  performance and  30% on the  average score of  their teammates</p>

the examinations each student had an interdependent grade. More specifically, 70 percent of each student's grade resulted from their individual examination performance, and 30 percent of each student's grade was based on the average examination score of their group mates.

Interdependent grades were expected to result in higher academic performance because more time spent in group interaction should raise positive attitudes toward group interactions regarding responsibility for other group members, helpfulness to other group mates, and feelings of dependency on group mates for students with interdependent achievement measures. However, there was no significant difference between independent and interdependent examination scores. Additionally, students overwhelmingly declared that interdependent grades were not fair.

In addition, on the class day following the examination and before the graded examination was returned to the students, the students filled out a detailed debriefing questionnaire. Students were asked to report time spent interacting with their group mates and studying alone. In addition, student perceptions and attitudes related to group interactions were elicited on 11-point summated rating scales. Even though students with interdependent grade schemes reported no more time spent in groups than other students, the positive attitudinal variables forecasted were observed and were statistically



significant. Students with interdependent grades reported significantly higher perceived levels of effort from their group mates and significantly higher perceived responsibility. However, though forecasted attitudinal variables occurred, these attitudes did not lead to higher actual levels of effort.

Accordingly, at the beginning of the current research, the students were already expressing dissatisfaction with the course and especially with participating in an experimental course. Consequently, the student reactions toward cooperative learning in this study might have been at least in a large part due to their experiences and reactions to the earlier experiment. Student frustrations and rebellious behaviors may have occurred because what they had anticipated about introductory accounting was very different from what they experienced in the current introductory accounting class. Students may have been expecting a bookkeeping class with traditional professor lectures followed by regurgitative testing. As changes become more pervasive in educational delivery systems, students will become more comfortable with non-traditional classrooms. Researchers may need to provide better pre-experiment preparation for students including information about the misconceptions of accounting, the need for students to be active learners, cooperative learners and decision makers. The amount of

change in this experimental course might also have been too much for students to assimilate. Students may be more accepting of changes if initiated more gradually and with limited changes occurring at a given time.

Differences in student achievement in prior introductory accounting classes as compared to student achievement in the current introductory accounting classes may have been partially due to the different grading schemes imposed. The custom in grading in introductory accounting had been to use norm based grading. That is, in prior introductory accounting classes, regardless of the scores on examinations, a large percentage of grades awarded were A's, B's, and C's, with approximately 10 percent A's, 20 percent B's, and 45 percent C's. Norm referenced means that student achievement is evaluated relative to other students and after the achievement of all students is measured. Norm referenced evaluations are competitive.

In contrast, in the current study, criterion referenced grading was used for both the case project and for the examination. Academic achievement levels (approved by the department head and Dean) wherein A grades were appropriate for scores of 90 percent or higher, B's were appropriate for scores between 80 and 89 percent, C's were appropriate for scores between 70 and 79 percent, D's were appropriate for scores between 60 and 69

percent, and below 60 percent was not passing (criterion referenced grade scheme). Criterion referenced grading means that the student achievement measures are absolute standards that are determined before the performance of the students is evaluated. Criterion referenced achievement measures are not competitive because it is theoretically possible for all students to receive the highest evaluation possible, the lowest evaluation possible, or any combination of evaluation levels. It was predicted that students subject to criterion referenced achievement measures would display higher academic achievement because they would perceive less competition and also because criterion reference achievement measures provide greater incentives. The grades achieved in the prior research via criterion grading were in fact significantly higher than those assigned via the norm basis.

In the current study, 55 percent of the students received A's and B's on the final examination, 21 percent received C's and 24 percent received D's and F's. The percentage of students receiving A's and B's, on the exam, in the current classes was higher than in prior terms (55 percent current vs 30 percent prior), the percentage of students receiving C's, on the exam, in the current classes was much less (21 percent current vs 45 percent prior), and the percentage of students receiving D's and

F's, on the exam, in the current classes was approximately the same as in prior terms (24 percent current vs 25 percent prior). The content of the exams in prior introductory accounting classes and in the current introductory accounting classes was the same.

Accordingly, the larger percentage of students receiving A's and B's in the current introductory accounting classes was theoretically caused by middle-level achievers (C students) reaching for higher achievement levels now made possible through the use of criterion grading and due to the omittance of or reduction of competition. Slavin (1993) indicates that too much competition lowers academic achievement. In fact, Slavin suggests that a negative motivator may exist and refers to this as negative competition. Negative competition results from all or some students perceiving the relative abilities and predicted achievement levels of fellow students to be higher or lower than themselves and determining that limited effort and, hence, less than maximum achievement levels will be all that is necessary to reach their expected grade. Stated another way, it is also theoretically plausible that these mid-level students were relieved of the feelings of hopelessness brought on by norm grading. That is, norm grading allows only a set percentage of students to achieve A and B levels, e.g., top 10 percent will receive A's, the next 15 percent will

receive B's, etc. In this study the examination was based on criterion grading whereby any level of achievement was possible for all students. Any and all students who achieved 90 percent on the test received an A; any and all students who achieved 80-89 percent received a B; any and all students who achieved 70-79 percent received a C and so forth.

However, this theory does not explain why students receiving D's and F's on the exam failed to realize the same incentives to reach for higher levels of performance as did the C level students. There was no difference in the percentage of students receiving D's and F's in prior introductory accounting classes under a norm referenced grading scheme compared to students in this study on the exam under a criterion referenced grading scheme. This group of students could be characterized as suboptimal learners (Johnstone, 1993), who command a tremendous challenge to educators at all levels of learning. Johnstone (1993, p. 2) charges that increasing the productivity of students in the face of pervasive "...sub optimal learning and less than fully engaged learners" challenges college faculty across the nation. The AECC stresses the need for higher achievement in introductory accounting (Williams, 1993). This suboptimal learner theory may also explain the divergent grades received by students between the extremely high performance on the

case projects and the lower than expected scores on the final exam. It could be explained that the hard work of two or three group members, of a four-member team, resulted in extraordinary performance for the group project (case) and that the grade on the group project was a group grade received by all members of the group. In other words, in all 24 groups there may have been a "social loafer" or "hitchhiker"--a person who has done little or no work to contribute to the group effort. In order to do well on the case students had to understand comparative financial relationships but students also had to understand terminology and ratio calculations derived from quantitative values displayed in the financial statements. In this study, the "social loafers" would have received the same high score on the case as their hard working colleagues in their cohorts. However, the "social loafers" lack of effort would account for the poor performance on the exam since the exam questions were specifically geared to terminology and financial ratio relationships taken from the comparative financial statements like those in the case. Consequently, the "social loafers" would apparently do extremely well on the group grade project by default, but fail to meet the objectives necessary to do well on the independent exam. Peer evaluations support this theory. Students were required to turn in confidential peer evaluations when the

cases were completed. In most instances, team members reported one or two members unwilling to work or who put forth minimal effort.

Clearly, learning will vary by inherent intellectual ability, by motivation, by learning style, by teaching style, and by a number of other factors. Johnstone (1993) dicusses the many factors which may enhance student learning. Most pertinent to this study, stipulation of clear and measurable learning objectives and expected student outcomes for each course should be provided or made available to students in advance. This display of student outcome expectations would allow students to determine their own path of learning. Eventually, as more schools and faculty adopt pedagogical change, student expectations will become better aligned with learning expectations as encouraged by the AECC. In addition, one could speculate that educators should employ methods proposed by the AECC during high school years for all college preparatory students, not only the advanced placement students who are selectively propelled and groomed by faculty, schools and colleges. Perhaps too few students really know what they are getting into when they plan for college.

## CHAPTER 6

### SUMMARY, IMPLICATIONS AND RECOMMENDATIONS

#### SUMMARY

This study was designed to determine if cooperative learning should be employed as an instructional strategy in post-secondary accounting courses as a means to implement the AECC's "new approach" to accounting education. The students enrolled in an introductory accounting course were assigned to four-member teams. The teams worked on a case which posed an unstructured problem. The case required the students to use higher-level thinking in a financial accounting model. Teams could have arrived at a variety of solutions for the problem. The students were also required to demonstrate what they had learned with a traditional final examination which posed a structured problem in an attempt to ascertain what the students had individually learned from the case. Student academic achievement level attained on the case (unstructured problem) was extremely high while academic achievement level attained on the examination (structured problem) was lower than expected. Moreover, while many of the students gave positive statements about the goals set for them of high achievement, team work, learning to learn, and active learning, a minority of students assumed responsibility for reaching these goals.



Mixed results were indicated for achievement attained on each of the testing instruments. Students' performance on the unstructured problem (a case) was extremely high. Although achievement attained on the structured problem had improved for most students, the treatment did not apparently help 24 percent of the students who received D's and F's; however this is the same percentage as in prior terms.

Students did not view cooperative learning or team work as important components of introductory accounting. Students' suggested that they perceived learning to learn and active participation as important to them in introductory accounting.

The students' evaluation of the effectiveness of their professor was significantly lower when compared to previous evaluations of the professor and other professors in introductory accounting.

#### **IMPLICATIONS AND RECOMMENDATIONS**

Implications and recommendations for future research in accounting education and for incorporating cooperative learning into the accounting curriculum are discussed below.

Although the results in this study were mixed, the attempts to address the AECC's recommendations are promising. The questions tested in this research are the

first of its kind in accounting education and should help accounting educators better understand the difficulties related to implementing change in the classroom. The remainder of this chapter will address these difficulties.

Faculty should discuss with students and emphasize the importance of the development of interpersonal skills, and that research suggests that cooperative learning fosters these skills. Additionally, students should be apprised of the advantages of learning to learn, and active learning, in part, as a necessary function of responsible learning in a rapidly changing world. These skills will better equip them to cope with life and career changes.

At the first day of class, in a financial accounting course, instructors should emphasize that learning to prepare and analyze financial statements is the overriding theme of the course. Students often memorize terms, formulas, rules, and facts, especially at the introductory level, and they never understand how or where they all fit together.

Accounting educators should emphasize the use of accounting information for decision making and reinforce this theme throughout the study of accounting. This too discourages memorization of bookkeeping skills and equations often thought by students to be the primary purpose of an introductory accounting course.

Instruction in team work skills prior to group assignments, and throughout the course, may augment the attitudes and behaviors necessary for successful and positive learning experiences. Student seminars proclaiming the advantages of active learning, responsible learning, team skills, etc. could be implemented prior to or early in the students course experience as a way to elicit positive student responses to the new pedagogy. In addition, educators need to apprise students that employers want workers who are equipped with proficient interpersonal skills, who can analyze and evaluate problems and who can work well as a team member. Guest speakers could be invited from accounting firms and from industry to help convey this message to students. Educators could invite practicum students employed in related fields to provide testimony to the skills and attitudes employers desire.

Educators should espouse the use of unstructured (ill-structured) problems which related research indicates foster higher levels of thinking. Cases, simulations, and problems which can be solved with multiple solutions augment skills such as judgement and evaluation. These types of skills are reflective of higher cognitive applications.

Students need to be encouraged to use a variety of resources to search for information not readily available

in their text book in order to foster student awareness of the need for participative and responsible learning.

Educators should initiate group work slowly by assigning group work sessions during class time. Instructors can encourage group collaborations by sitting in and actively participating in group discussions.

When implementing cooperative learning pedagogy, educators should impose group goals or an interdependent reward structure to induce teams to work together. Imposing peer evaluations, with explicit grade consequences, will often ignite team members otherwise slow to contribute to group endeavors. Simply assigning students to groups will not provide assurance that students will work together (Johnson and Johnson, 1990).

Faculty too may need special development seminars or workshops where training in the new pedagogy could be provided. Many faculty who may resist change may only need information and instruction about the "why" and "how" of new instructional methodologies.

The results of this research show only the beginning of change. Longer-term exposure to higher standards for academic achievement, cooperation, and responsibility for active and life-long learning may reach more students. As educators we are responsible for holding these standards.

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## APPENDICES

APPENDIX A  
Related Literature Supplement

## RELATED LITERATURE SUPPLEMENT

In the early 1800's the Common School Movement in the United States introduced and emphasized cooperative learning. Our knowledge of the cooperative learning techniques employed is vague, but the goal was to augment learning through cooperative enthusiasm (Johnson & Johnson, 1987).

The depression years of the 1930's kindled a coalition of business groups to unite and to effectively market interpersonal competition to educators (Johnson & Johnson, 1987). Reward structures pitted student against student and stratified classrooms by achievement.

In the late 1960's individualistic learning was promoted as an alternative to interpersonal competition (Johnson & Johnson, 1987). Individualistic learning provides each student with personal achievement goals and rewards unrelated to those of other students. Individualistic learning structures and competitive learning structures dominated education and rivaled each other for prominence.

Beginning in the 1970's, a revival of cooperative learning occurred in classrooms in the United States. The cooperative learning structures used were based on the theory of cooperative and competitive situations proposed by Martin Deutsch, although he was virtually ignored in

the 1940's when he proposed the theory (Johnson & Johnson, 1987). A wide variety of competitive, individualistic, and cooperative reward structures were proposed, and their merits were debated by researchers as well as practitioners (Slavin, 1983).

Achievement. There is disagreement whether all of the elements of cooperative learning are essential to improve academic achievement over competitive and individualistic pedagogy and how tightly these elements must be enforced. In general, the Johns Hopkins School (represented by Slavin) believe that all students must be accountable for the academic material through testing whereas the Minnesota School (Johnson brothers) do not. Never-the-less, there is general agreement and massive evidence that when all of the elements of cooperative learning are present and individual accountability is maintained through testing, academic achievement is higher (Slavin, 1993). Anecdotal evidence as reported by the Johnsons supports the viewpoint that traditional classroom competition causes academic achievement to be disparaged, as students feel threatened when they perceive another student's success as detracting from their own success. Cooperative learning, however, changes the reward structure away from competition. A student's success helps their team mates and team succeed. Also, in cooperative learning, success is not rationed as it is in

competition. In cooperative learning everyone and every team can succeed equally. Hence, the cooperative learning literature supports the expectation that students will perceive teamwork as very important.

Unstructured Problems. Conclusive evidence as to why cooperative learning leads to higher academic achievement is not yet available. However, researchers believe that cooperative learning promotes the forming of productive responses to problems which may have multiple solutions, often termed "unstructured problems," or "ill-structured problems," (Newmann & Thompson, 1987; Slavin, 1991; Gabbert. et al., 1986).

Learning to Learn and Active Participation. Through cooperative learning students become active participants who are responsible for their own and their team mates' learning (Slavin, 1990; Johnson and Johnson, 1989; Kagen, 1992). Researchers believe that cooperative learning promotes stronger memory through active participation and positive rewards for learning regardless of academic starting point or natural ability levels (Slavin, 1990). Moreover, in their overviews and compendiums of cooperative learning both the Johnsons (1989) and Slavin (1990) explain that in cooperative learning students enjoy learning to learn because learning has only positive consequences. Furthermore, intrinsic pleasure in learning and natural curiosity are better satisfied through the

active learning of cooperative learning than the passive listening to a teacher lecture. Thus, the expectations that students will perceive both learning to learn and active learning as important.

Team Work and Interpersonal Skills. Team work and interpersonal skills benefit from cooperative learning; the involvement in cooperative learning of working for group goals is thought to be responsible for the improvement in team work skills (Slavin 1990). Achieving these goals through team work is thought to be responsible for improving interpersonal skills (Kagan, 1992).

Student Attitudes Toward Cooperative Learning. Students report that they prefer collaborative types of instruction and that they gain a greater interest in education in general (Goodsell, et al., 1992). Students who work together learn to like one another and provide greater mutual social support. Cooperative learning pedagogy increases students' motivation and positive attitude toward a given subject (Johnson et al., 1990).

Effects on Professors' Attitudes and Their Evaluations by Students. Faculty who use cooperative learning instructional techniques report a greater sense of enjoyment in teaching, improved communication with their peers, and more positive student evaluations (Goodsell, et al., 1992). The elimination of negative attitudes toward learning under competition coupled with

the positive attitudes expected from cooperation and rewards for team work, learning to learn, and active learning lead to the expectation that students will prefer cooperative learning pedagogy to more traditional pedagogy. This preference is expected to result in positive student attitudes toward both cooperative learning and the teacher using cooperative learning techniques.

However, substantial numbers of students complained that when cooperative learning was imposed that the work of learning was cast upon their shoulders rather than the professors's shoulders (Jones, 1993; Holt and Swanson, 1993). When asked what students had learned at the completion of one academic quarter using the "new approach" at one of the AECC schools, the response from one student was "I didn't learn a thing this term....all I did was THINK." Additionally, Needles reported in interviews with accounting faculty that they were not only uncomfortable with their ability to use the new pedagogical techniques but that they also feared student retaliation through low evaluations of the professor.

APPENDIX B  
Interview Instrument



## Interview Instrument

Llama Number\_\_\_\_\_ College GPA\_\_\_\_\_

What grade do you think you are getting?\_\_\_\_\_

What grade do you think you have earned?\_\_\_\_\_

Accounting educators have found that introductory accounting students learn more about solving real world problems if they work together in mixed groups. How would you implement this in introductory accounting?

Employers are complaining that business graduates have trouble forming and working in teams. They say that business graduates tend to want to work individually, and that the teamwork that is in everyone's best interest doesn't happen. As a result, many business schools are now requiring a lot of group work. What do you recommend for SOSOC?

Educators and employers tell us that we must teach life time learning. That is, business students must learn to work independently and in groups actively searching for required new knowledge. How can we teach this in introductory accounting?

If you could take the class over again (through the first two tests) what would you do differently as a student?

What can you do to get a group of introductory accounting students to work together effectively?

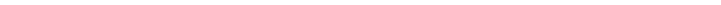
APPENDIX C  
Debriefing Instrument

## Debriefing Instrument

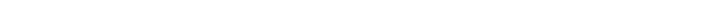
**ANONYMOUS FINAL QUESTIONNAIRE FOR EXTRA CREDIT WORTH ONE  
HALF GRADE ON THE 211 TEST OF YOUR CHOICE!**

LLAMA NUMBER

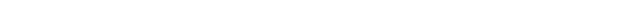
1. Please mark on scale below how important you perceive knowledge of accounting is for your career success?

No  Extreme Importance

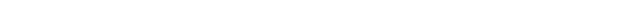
2. How important is ability to read and understand financial statements for your career success?

No  Extreme Importance

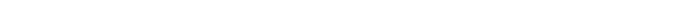
3. How important is learning how a company's books are kept to your career success?

No  Extreme Importance

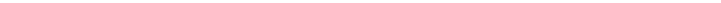
4. How important is decision making with financial statements to your career success?

No  Extreme Importance

5. How important should the student's active participation be in the learning process of introductory accounting?

No  Extreme  
Importance 1 2 3 4 5 6 7 8 9 10 Importance

6. How important should learning how to find answers to accounting problems and questions be in introductory accounting?

No  Extreme  
Importance 1 2 3 4 5 6 7 8 9 10 Importance

7. How important should involvement in working with others and solving accounting problems be in introductory account (e.g., case studies, simulations, unstructured problems)?

No ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Extreme  
Importance 1 2 3 4 5 6 7 8 9 10 Importance

8. How important are the professor's lectures and demonstration problems in introductory accounting?

No ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Extreme  
Importance 1 2 3 4 5 6 7 8 9 10 Importance

9. How much lecturing and problem solving examples should the professor do in introductory accounting?

Please answer between 0 - 100% of classtime. \_\_\_\_\_%

10. How important is practicing critical thinking in introductory accounting?

No ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Extreme  
Importance 1 2 3 4 5 6 7 8 9 10 Importance

11. How important to you is the study of general knowledge (language, philosophy, history, literature, and abstract science) and developing general intellectual capacities in college?

No ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Extreme  
Importance 1 2 3 4 5 6 7 8 9 10 Importance

12. How important to your major is the study of general knowledge (language, philosophy, history, literature, and abstract science) and developing general intellectual capacities in college?

No ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Extreme  
Importance 1 2 3 4 5 6 7 8 9 10 Importance

13. How important to your career is the study of general knowledge (language, philosophy, history, literature, and abstract science) and developing general intellectual capacities in college?

No ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Extreme  
Importance 1 2 3 4 5 6 7 8 9 10 Importance

14. Approximately how many hours did you spend on the case:

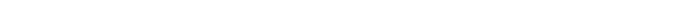
Hours working with team mates?

Hours spent working alone?

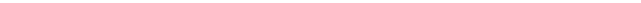
15. Approximately how many hours did you spend studying for the final?

hours.

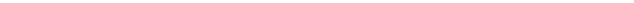
16. How much competition between teams did you feel on the case?

No  Maximum  
Competition 1 2 3 4 5 6 7 8 9 10 Competition

17. How much competition between individuals did you feel in studying for the exam?

No  Maximum  
Competition 1 2 3 4 5 6 7 8 9 10 Competition

18. How much competition did you feel in the class?

No  Maximum  
Competition 1 2 3 4 5 6 7 8 9 10 Competition

19. Based on your experience, how do you rate Professor Swanson's teaching effectiveness?

1 2 3 4 5 6 7

Unsatisfactory Competent Outstanding

20. Did the fact that you were part of a study affect  
your behavior during the quarter?  
yes? no?

yes? no?

If yes, how? \_\_\_\_\_

[illegible]

## APPENDIX D

## Final Exam

## Final Exam

BA 211, Financial Accounting

Holt &amp; Swanson

Final Exam, Fall 1993 Name \_\_\_\_\_

The following questions require the use of Niki and Reebok Annual Reports. Show all your work and circle your answer.

1. Compute receivables as a percentage of current assets for 1992 for Reebok.
  
  
  
  
  
  
  
  
  
  
2. Compute inventory as a percentage of total assets for 1992 for Reebok.
  
  
  
  
  
  
  
  
  
  
3. Compute inventory turnover (days) for 1992 for Reebok.
  
  
  
  
  
  
  
  
  
  
4. What inventory cost flow assumptions do Niki and Reebok use:  
  
Niki \_\_\_\_\_  
  
Reebok \_\_\_\_\_



5. What methods do Niki and Reebok use to depreciate their fixed assets for financial and income tax purposes?

Niki (financial reporting)\_\_\_\_\_

Niki (income tax purposes)\_\_\_\_\_

Reebok (financial reporting)\_\_\_\_\_

Reebok (income tax purposes)\_\_\_\_\_

6. Compute accumulated depreciation as a percentage of the cost of property, plant, and equipment for Niki for 1992.

7. Compute the current ratios for Niki and for Reebok for 1992.

Niki (1992)\_\_\_\_\_

Reebok (1992)\_\_\_\_\_

8. Compute the gross margin for Niki for 1992.

9. Compute the return on equity, return on assets, and return on sales for 1992 for Niki.

Return on Equity\_\_\_\_\_

Return on assets\_\_\_\_\_

Return on sales\_\_\_\_\_

10. Match the "letter" of the following terms to the definitions below:

- |                          |                                   |
|--------------------------|-----------------------------------|
| A. relevance             | H. materiality                    |
| B. reliability           | I. classified financial           |
| C. comparability         | J. current assets                 |
| D. conservatism          | K. current liabilities            |
| E. consistency           | L. intangible assets              |
| F. cost-benefit analysis | M. plant, property, and equipment |
| G. full disclosure       | N. auditors report                |

\_\_\_\_\_The convention that requires financial statements and the notes to them to present all information relevant to the users' understanding of the company's financial condition.

\_\_\_\_\_The convention that requires an item or event in a financial statement to be important to the decisions made by users of the financial statements.

\_\_\_\_\_Obligations due within the normal operating cycle of the business or within one year.

\_\_\_\_\_Tangible assets of a long-term nature used in the continuing operation of the business.

\_\_\_\_\_The medium by which the independent public accountants communicate to the users of the financial statements the nature of the audit and the conclusion as to the fair presentation of the financial statements.

\_\_\_\_\_The convention that mandates that, in the face of two equally acceptable alternative, the accountant will choose the one less likely to overstate assets and income.

\_\_\_\_\_A qualitative characteristic of accounting information that makes a difference to or bears directly on the economic outcome of a decision for which it is used.

\_\_\_\_\_The convention of presenting information in such a way that decision makers can recognize similarities, differences, and trends.

\_\_\_\_\_The qualitative characteristic of accounting information that has the traits of representational faithfulness, verifiability, and neutrality.

\_\_\_\_\_General purpose external financial statements that are divided into useful subcategories.

\_\_\_\_\_Cash or other assets that are reasonably expected to be realized in cash, sold, or consumed during a normal operating cycle of a business, or within one year.

\_\_\_\_\_The convention that an accounting procedure, once adopted, will not be changed from one period to another unless users are informed of the change.

\_\_\_\_\_The convention that the benefits gained from providing accounting information should be greater than the costs of providing that information.

\_\_\_\_\_Long-term assets that have no physical substance but have a value based on rights or privileges occurring to the owner.

## APPENDIX E

### Case

## Case

**READ** each case carefully. The meaning of the written parts is as important or more important than the numbers. The financial statements are the actual statements of two widely known companies. These are what financial statements actually look like.

**EACH GROUP IS TO HAND IN ONLY ONE CASE SOLUTION, AND THE SOLUTION IS TO BE SIGNED BY ALL GROUP MEMBERS!**

Professional presentation (appearance) will be scrutinized and graded at the discretion of your professors. Points will be deducted for each format criterion, listed below, not observed:

1. Final product must be typed, with answers numbered or lettered for each question response.
2. Discussion questions are to be answered with complete sentences. Grammar is important! Brief analytical discussions and/or observations (quality) are preferred over volume (quantity).
3. A cover sheet must be stapled to the front of your paper. Staple the upper left hand corner. The cover sheet should include the name of the case, the class (day and hour), the current date, and the name of each group member. Each group member should sign the cover sheet.
4. No notebooks or folder covers please!

**STUDY CHAPTER 6 (AND USE CHAPTER 15 AS A REFERENCE AS NEEDED) FOR THE FINAL EXAM AND FOR THE CASE.**

**CASE QUESTIONS**

1. What do the following terms refer to regarding financial statements?

- A. relevance
- B. reliability
- C. comparability
- D. conservatism
- E. consistency
- F. cost-benefit analysis
- G. full disclosure
- H. materiality
- I. classified financial statements
- J. current assets
- K. current liabilities
- L. intangible assets
- M. plant, property, and equipment

2. What is the purpose of the auditor's report?

**CONTINUE WITH QUESTIONS ON THE NEXT PAGES!**

## **I. WAL MART AND K MART**

### **A. Cash, Cash Equivalents, and Marketable Securities**

A1. Focus on the year-end cash balances of Wal Mart and K Mart and the definition of cash used by the two companies. How large are these cash balances relative to the total current assets and total assets of the companies? Are there any contractual restrictions imposed on the use of these funds? Describe any such restrictions. Are issues of marketable security management and accounting important for these two companies? Explain.

### **B. Accounts Receivable**

B1. Compute receivables as a percentage of current assets and as a percentage of total assets for 1993 and 1992 for both Wal Mart and K Mart. Are issues of receivables management and accounting important for these two companies? Explain.

### **C. Inventory**

C1. Compute inventory as a percentage of current assets and as a percentage of total assets for 1992 and 1993 for both Wal Mart and K Mart. Are issues of inventory management and accounting important for these two companies? Explain.

C2. Compute inventory turnover (days) for 1993 and 1992 for both Wal Mart and K Mart. Discuss the comparison.

C3. What inventory flow assumptions do Wal Mart and K Mart use? Estimate 1993 net income, after income taxes, for each company as if they both used the first-in, first-out (FIFO) assumption for their entire inventory. Would net income have increased or decreased, and by how much? Discuss the relationship between the size of the increase or decrease and the frequency with which the companies turn over their inventory.

C4. Compute inventory turnover (days) for 1993 for both companies, assuming that they both used the FIFO inventory flow assumption. Discuss this comparison and how it relates to the comparison made in C2.

C5. Estimate how many tax dollars Wal Mart and K Mart have saved over the years by using the last-in, first-out (LIFO) inventory flow assumption instead of the FIFO inventory flow assumption.

**D. Long-lived Assets**

1. What methods do Wal Mart and K Mart use to depreciate their fixed assets for financial reporting and income tax purposes?
2. How much cash did Wal Mart and K Mart pay for property, plant, and equipment purchases during 1993? In general, how were these purchases financed, and how does the size of this investment compare with 1992 and 1991 for each company?
3. K Mart has been involved in a series of restructuring write-downs over the past several years. How large have these write-downs been, and how have they been reflected in the financial statements?
4. Wal Mart follows the policy of capitalizing interest on funds borrowed to finance the construction of property, plant, and equipment. Why would the company follow such an accounting policy and how would it affect the financial statement? If Wal Mart expensed these interest costs in 1993 for financial reporting purposes, by what percent would net income have decreased (ignore any tax effect)?
5. Compute accumulated depreciation as a percentage of property, plant, and equipment for both Wal Mart and K Mart for 1992 and 1993. Compare the percentages both between the two companies and across the one-year time period. Discuss why one company's percentage may be different from the other, and explain why the percentages changed from 1992 and 1993.

**E. Current Liabilities**

1. Assume that Wal Mart and K Mart purchase inventory on account and accounts payable reflects only inventory purchases and payments. During 1993 what effect did the companies' inventory purchases and payments have on their cash balances?
2. Both Wal Mart and K Mart have substantially increased their short-term obligations during fiscal 1993. For each company describe the form of the increased short-term financing, and provide a plausible explanation for why the companies have chosen to follow this strategy. What are the weighted average interest rates presently being paid by the companies for the obligations and how have these rates changed over the past several years?



3. Wal Mart and K Mart have formal and informal short-term lines of credit with a number of banks. Compare the credit lines available to the two companies. Are there any restrictions imposed on the companies by the banks granting these credit lines?

4. How did the current ratios of Wal Mart and K Mart change from 1992 to 1993? For each company what factors were most important in explaining the change?

#### **F. Income Statement**

1. Compute the gross margins for 1991, 1992, and 1993 for both Wal Mart and K Mart. Compare the margins between the two companies and across the three-year time period. Discuss. Would you consider the income statements of Wal Mart and K Mart to be of the single- or multi-step format? Why?

2. Compute the return on equity, return on assets, and return on sales for 1993 and 1992 for both Wal Mart and K Mart. Compare the returns between the two companies and across the two-year time period. Note in the financial summaries of both Wal Mart and K Mart that both companies use beginning balances of assets and shareholders' equity to compute return on assets and return on equity. In general, how does this decision affect the size of the reported ratios?

3. Why do the return ratios generally indicate that Wal Mart has generated higher returns than K Mart, while K Mart's earnings per share is more than double that of Wal Mart?

4. If in 1993 both Wal Mart and K Mart adopted the first-in, first-out inventory flow assumption and retired all of its outstanding long-term debt, how would the reported net incomes of each company be effected, and how would these effects be disclosed on the income statement?

### **G. Overall Financial Statement Analysis**

1. Assess the earning power and solvency positions of both Wal Mart and K Mart. Use a traditional financial ratio analysis to support your conclusions and then adjust the ratios to reflect important additional information contained in the footnotes. Assess the "quality" of the reported dollar amounts and the extent to which the reported financial statements are a conservative or liberal presentation of the companies' financial performance and position. What does your conclusion indicate about the return potential of an investment in the equity securities of the two companies?

Case Questions taken from Pratt (1994).