THE EFFECT OF EARLY ACCOUNTING THEORY INSTRUCTION ON UNDERGRADUATE ACCOUNTING STUDENTS' COGNITIVE DEVELOPMENT

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CHAPTER I

INTRODUCTION

Background

Postsecondary accounting education has experienced a period of intense debate since 82 percent of the membership of the American Institute of Certified Public Accountants (AICPA) voted in January, 1988 to require its "applicants for membership after the year 2000 to have 150 semester hours of education, including a baccalaureate degree. . ." (AICPA, 1988, p. 6). The 1988 vote was the culmination of two decades of effort by the members of the accounting profession to improve the educational qualifications of its members and became the formal catalyst to begin a process of changing the accounting curricula nationwide. AICPA issued a policy statement in February, 1988 calling for a more general education for undergraduates to better develop their intellectual abilities and analytical thinking skills (AICPA, 1988).

The American Accounting Association (representing the academic wing of the profession) in conjunction with the Sponsors' Education Task Force (representing the major public accounting firms) appointed the Accounting Education Change Commission (AECC) in 1989. The stated objective of

the commission was:

> . . .to be a catalyst for improving the academic preparation of accountants so that entrants to the accounting profession possess the skills, knowledge, and attitudes required for success in accounting career paths (AECC, 1990, p. i).

The commission's recommendations included an emphasis on life-long learning comprised of the three components of skills, knowledge, and professional orientation.

Skills are classified as communication, intellectual, and interpersonal skills.

> Communication skills include both receiving and transmitting information and concepts, including effective reading, listening, writing, and speaking. Intellectual skills include the ability to locate, obtain and organize information and the ability to identify and solve unstructured problems in unfamiliar settings and to exercise judgment based on comprehension of an unfocused set of facts. Interpersonal skills include the ability to work effectively in groups and to provide leadership when appropriate (AECC, 1990, pp. 2-3).

Knowledge is classified as general, business, and accounting knowledge. General knowledge is necessary to participate in today's complex global society. Business and organizational knowledge is required to operate in the business community. Accounting knowledge should include

> 1) the ability to identify goals, problems, and opportunities, 2) the ability to identify, gather, measure, summarize, verify, analyze, and interpret financial and nonfinancial data that are useful for addressing the goals, problems, and opportunities, and 3) the ability to use data, exercise judgments, evaluate risks and solve real-world problems. The focus should be on developing analytical and conceptual thinking, not on memorizing professional standards (AECC, 1990, p.2).

Professional orientation derives from understanding and knowledge of professional ethics in order to be prepared to

"address issues with integrity, objectivity, competence, and concern for the public interest" (AECC, 1990, p. 3).

The commission also called for academia to utilize instructional methods that would encourage development of skills and strategies to teach the students to learn on their own throughout their lifetimes.

> Students must be active participants in the learning process, not passive recipients of information. They should identify and solve unstructured problems that require use of multiple information sources. Learning by doing should be emphasized. Working in groups should be encouraged. Creative use of technology is essential (AECC, 1990, p. 5).

This redirection was essentially a call to return to a more liberal approach to education. The difference in the liberal approach and the professional program approach has more to do with style of learning than content (Rudolph, 1984). The liberal approach to accounting education focuses on cognitive skills, critical thinking, decision making, and interpersonal communication skills (Wyer, 1993).

The challenge to the higher education community was clearly set forth in the statements from AICPA and the AECC. Over a three year period, the AECC awarded $2.5 million to ten four-year institutions and two community colleges to implement curriculum and program innovation for improving accounting education (Doyle & Sundem, 1990, 1991 & 1992). Many of these institutions revised their entire curriculum by creating non-traditional courses with new pedagogy for which there were no commercially available texts and materials. The grants represented only partial funding for

the programs with the balance of the funds coming from the institutions or other sources.

The participating schools took a great deal of risk in completely revising their curricula (Barefield, 1991). The University of Southern California found that "[m]ajor curriculum design does not occur easily" (Mock, Pincus & Andre, 1991, p. 188). USC experienced five challenges in their zero-based curriculum redesign:

1. financial, physical, and time constraints;
2. reward systems;
3. faculty resistance to change, faculty bias in protection of personal domains, and objectivity in assessing the current programs;
4. student resistance to change; and
5. problems with the systems design approach which requires complete development before implementation.

In personal conversations with members of the faculty of three grant schools, the University of North Texas, Kansas State University and the University of Southern California, I learned that a great deal of trial and error, revision, and frustration accompanies curriculum innovation. Some of the schools have made numerous revisions to their original plans. Since the first students who have been educated entirely in the new curriculum will graduate in 1993 or 1994, results are not yet available to evaluate the success of the programs.

This type of broad curricula restructuring is out of the reach of most accounting departments with the budget constraints that currently face most colleges and universities. Without outside funding, accounting faculty must innovate within the existing curriculum as a result of the budget constraints to accomplish some of the goals of the AECC. The AECC goals are not to completely redefine the accounting curriculum. Rather, the goals redefine the methods of instruction to ensure that the students graduate with analytical and evaluative skills in their field of study in addition to factual knowledge. Factual knowledge is comparatively easy to impart and to test. Teaching and evaluating analytical skills is a distinct change.

Such goals of the educational process have been studied by Benjamin S. Bloom. He met informally with a group of college examiners at the American Psychological Association convention in Boston in 1948 to develop a theoretical framework to classify the goals of the educational process (Bloom [Ed.], 1956). In 1956 this group published the Taxonomy of Educational Objectives. The taxonomy describes different classes of educational objectives representing primary and higher level cognitive skills. This schema addresses the following cognitive skills:

* Knowledge
* Comprehension
* Application
* Analysis
* Synthesis
* Evaluation

The AECC is calling for accounting educators to move their

students from the primary cognitive objectives of knowledge and comprehension to the higher levels of application, analysis, synthesis, and evaluation. The work of Bloom and his colleagues can aid educators in the accomplishment of these goals. A complete discussion of this taxonomy and process will follow in Chapter 2.

Purpose of the Study

As an instructor of upper level accounting courses, I have noticed a distinct lack of analytical ability in accounting theory among the upper level students. In my judgment, their inability is due to several factors: 1) the lack of prior exposure to the basic theoretical and conceptual framework of accounting, 2) the methods used to introduce theoretical concepts both in the educational materials and by the instructors, and 3) the low level of cognitive skills required of the students in their prior educational experiences. Traditionally, accounting theory is introduced in one to four chapters of Intermediate Accounting taught in the first semester of the junior year. The coverage is perfunctory. Selected elements of accounting theory are more thoroughly covered in the first course of Auditing in the senior year. True accounting theory is only taught at the graduate level or in some programs at a second semester senior undergraduate level.

Most accounting curricula emphasize knowledge base acquisition (an important ingredient) that omits many of the

cognitive and communication skills necessary for excellent performance as a professional (Rudolph, 1984). In a review of "disaster" studies on mathematics and engineering students, Davis (1983) found that students often reached high levels in mathematics and engineering programs with basically incorrect understanding and knowledge of the subject matter. He asserted that students can progress in the system by learning just enough factual knowledge to continue. They can get by with memorized knowledge of formal rules and procedures without having conceptual understanding of the mathematical content. He concluded that there are data available that prove that with improved curricula, nearly all students can learn with understanding more than they presently do.

Accounting students will not learn to think critically, communicate clearly, behave ethically and responsibly, and embrace their profession by the time they graduate if this approach to their field is never presented in the education process. If the cognitive abilities of our accounting students are to improve, those elements must be introduced into the curriculum. Ultimately, only faculty have the power and responsibility to change the curriculum (Rudolph, 1984).

The liberal approach should not be adopted at the conclusion of students' learning but integrated into the curriculum and reinforced from the beginning to the end (Arthur Andersen & Co. et al, 1989). If their liberal

education courses taken in the freshman and sophomore years are followed by an introductory course in accounting that uses the same approach, the professors can demonstrate that the students can transfer the cognitive approach to their major field of study. "When knowledge and skills learned early in a university experience are expanded on in work at a later stage, the student's experience is reinforced and enriched" (Arthur Andersen & Co. et al, 1989).

In a 1992 meeting of accounting educators, Gary Sundum, past president of the AECC and current president of the American Accounting Association, called for curriculum designers to place accounting theory at the beginning of the intermediate level instead of the end of the curriculum. If the accounting theory course were taught at the beginning of the curriculum, emphasizing student self-discovery through the accounting literature, students would improve their cognitive skills in accounting and their understanding of the concepts underlying the principles and practices presented in the remainder of their curriculum.

This study examines whether students who completed an Introductory Accounting Theory course as first semester juniors will be more successful in a constructed test requiring higher cognitive skills than junior students who complete only the traditional material included in the first Intermediate Accounting course, and than students who complete the first Auditing course and both semesters of traditional Intermediate Accounting.

Significance of the Study

This study contributes to the body of research on accounting education because there is no evidence of such studies in the accounting literature. Studies of this type have not been conducted because there has been little change in the accounting curricula in the past 30 years (Barefield, 1991). The current call for change is too recent to expect the publication of research results. In addition, there are no faculty incentives or reward structures for such research due to the fact that most acceptable research in accounting is in the field of accounting--not accounting education (Arthur Andersen & Co., et al, 1989; Mock, Pincus & Andre, 1991).

If results of this study are shown to be effective, this method of introduction of accounting theory into a traditional curriculum can serve as a model to accounting departments who are unable to restructure their entire curriculum, but which desire to meet certain objectives of the AECC.

Definition of Terms

For the purpose of this study the following definitions apply:

Cognitive Development - Cognitive development is the growth of students' patterns of thought in an educational setting (Perry, 1981) leading to skills of reasoning, critical thinking, intellectual flexibility,

reflective judgment, and conceptual complexity (Pascarella & Terenzini, 1991).

Knowledge - Knowledge is the process of remembering by recall of facts, universals, processes, patterns, structures or phenomena (Bloom [Ed.], 1956).

Comprehension - Comprehension is the lowest level of literal understanding of a communication, without relating the communication to other facts or concepts or seeing its fullest implications (Bloom [Ed.], 1956).

Application - "The use of abstractions in particular and concrete situations. The abstractions may be in the form of general ideas, rules of procedures, or generalized methods. The abstractions may also be technical principles, ideas, and theories which must be remembered and applied." (Bloom [Ed.], 1956, p. 205).

Analysis - Analysis is a process of breaking down a communication into its constituent parts so that the relationship and organization of the parts are explicit and clarify the communication (Bloom [Ed.], 1956).

Synthesis - Synthesis is a process of forming a whole by combining the elements into a pattern or structure not previously recognized (Bloom [Ed.], 1956).

Evaluation - Evaluation is qualitative or quantitative judgment about the value of materials or methods for a specific purpose involving the use of a standard of appraisal (Bloom [Ed.], 1956).

Lower cognitive skills - Lower cognitive skills are

knowledge and comprehensive.

Higher cognitive skills - Higher cognitive skills are application, analysis, synthesis, and evaluation.

Instructor - The instructor is the author.

Limitations

Limitations of this study are as follows:

1. The data collection was limited to a small segment of the accounting student population in a comprehensive university in a southwestern state.
2. The study was limited to a time period spanning one college semester.
3. The use of the researcher as the instructor and developer of the course materials may bias the results of the study.
4. The researcher's preparation of the questions for the test instrument may bias the results of the study.
5. The cognitive effect on the students who complete the Introductory Accounting Theory course may have more long term effects than can be measured in a one semester time frame.
6. The test instrument, consisting of multiple-choice questions, may not measure all of the cognitive development of the treatment group.

CHAPTER II

REVIEW OF THE LITERATURE

The review of the literature investigates the various levels of the cognitive domain, the application of cognitive theories to the education process, how the current accounting curricula fail to meet the goals of the AECC in developing higher level cognitive skills, and what accounting educators assert will change the current trends. The purpose of the review of the literature is to develop a theoretical framework to effectively design a course that will accomplish the goals of improving students' cognitive outcomes in the accounting curriculum.

Theories about Cognitive Development

Cognitive psychology studies the mental processes that influence behavior and thoughts (Weinstein & Meyer, 1991). The cognitive development of college students has been studied by Piaget, Perry, Bloom, and other scholars.

Piaget describes human intellectual development as a four period development cycle (Pascarella & Terenzini, 1991). Period one is the sensorimotor from ages birth to two years. Period two is the preoperational from two to seven years. The third period is the concrete operational

from seven to eleven years. The fourth period of formal operational begins at eleven and includes abstract and deductive reasoning. Pascarella & Terenzini (1991) in reviews of the existing literature found that many researchers believe that about half of the college students have not yet reached the stage of formal operational.

Perry's model (1968) describes the change in college students cognitive abilities in terms of nine positions. The first three positions move the student from a dualistic outlook to multiplicity where the student begins to recognize alternatives to dichotomies. In the next three positions the student accepts the diversity of alternatives, relates the diversity to their context and realizes that commitment is necessary in a relativistic world. The last three positions trace the students' development of commitment into their experience. All three groups of positions are subject to the students' escape mechanisms of temporizing, escape, and retreat.

Perry (1981) is helpful in understanding the individual student's position in cognitive development and his or her ability to perform cognitive tasks and deal with abstractions at different positions. Perry's model describes most college freshmen as dualistic. Perry defines dualism as dividing meaning into two realms such as right or wrong.

By sophomore year, many students move into the multiplicity position where they legitimize the diversity of

opinions and values in instances where no right answer exists. Students find this position uncomfortable and can desire to retreat to dualism because it is easier and requires less commitment.

Some junior-year students progress to a position of relativism. Relativism allows diversity of opinion such that one can analyze, compare, and evaluate. In this position the student must realize that knowledge ". . . is qualitative, dependent on contexts" (Perry, 1981, p. 80). Multiplicity, where everyone is entitled to his or her own opinion, is a much safer mental state than relativism. Perry states that ". . . many students react to the discovery of relativistic thinking with profound anxiety" (p. 89) and escape or retreat. Development is recursive as is movement between these positions.

Perry concludes that teachers can help students bridge the gap between stages of development. One way to do so is to ". . . teach dialectically--that is, to introduce our students, as our greatest teachers have introduced us, not only to the orderly certainties of our subject matter but to its unresolved dilemmas" (Perry, 1981, p. 109).

Bloom and his associates (1956) recognize the cognitive domain to include "those objectives which deal with the recall or recognition of knowledge and the development of intellectual abilities and skills" (p. 7). Bloom further indicates that "[i]t is the domain in which most of the curriculum development has taken place and where the

clearest definitions of objectives are to be found phrased as descriptions of student behavior" (p. 7).

As discussed in Chapter I, the committee that produced Bloom's Taxonomy of Educational Objectives (1956) sought to develop a theoretical framework for the express purpose of facilitating communication among college examiners for educational purposes. The resulting classification system describes the intended behavior of students not the actual behaviors after completion of their unit of instruction.

The taxonomy is based on four guiding principles:

1. The classifications of behaviors are based largely on the distinctions that teachers make in student behaviors.
2. The taxonomy is logically developed and internally consistent.
3. The taxonomy is consistent with present (in 1956) psychological theory.
4. The classification is a value neutral descriptive scheme applicable to any educational goal.

The taxonomy classifies six levels of the cognitive domain describing the lower levels as knowledge and comprehension and the higher levels as application, analysis, synthesis, and evaluation (Bloom [Ed.], 1956). A summary of each level and its constituent components is included in Appendix A.

Because the taxonomy is based on educational goals, it is helpful in curriculum design. Bloom believes that most

education is concentrated in the lower levels of knowledge and comprehension (Bloom [Ed.], 1956) and individual achievement is due largely to the variation in student ability (Chance, 1987). Further, he asserts that "much of the variability seen in student performance is neither natural nor inevitable but the product of our educational system. . . .What one student can learn, nearly all students can learn" (Chance, 1987, p. 44).

Several studies have criticized Bloom's taxonomy because the cognitive objectives lack distinctiveness and measurability. Kottke and Schuster (1990) tried unsuccessfully to develop tests for measuring Bloom's educational outcomes. Seddon (1978) suggested that the hierarchical aspect of the taxonomy is invalid. Phillips and Kelley (1975) found that the objectives of the taxonomy cannot be precisely specified and may be empirically and philosophically suspect due to the overlap between and within levels. Bloom has admitted to such difficulties. Coletta (1975), however, found the taxonomy useful for developing comprehensive objectives for schools. DeLandsheere (1977) concluded that Bloom's work responded to a deep and urgent need in the educational community.

Bloom's taxonomy has recently been applied to teaching business ethics (Reeves, 1990), been cited as a hidden agenda for teaching business subjects (Echternacht, 1992), and served as a model for Kansas State University, one of the AECC grant schools (Ainsworth & Deines, 1993).

Application of Cognitive Theories to the Education Process

Piaget attributes cognitive development to a natural maturation based on chronology (Pascarella & Terenzini, 1991). Perry (1968, 1981) attributes movement to higher levels of cognitive development in terms of the students interpretation of their lives and their willingness to make commitments. Perry (1981) indicates that teachers can assist students in making those commitments and cites educational research on his theories that confirms success in changing the mastery of subjects with changes in teaching patterns. Bloom also believes that movement from the knowledge level to the higher cognitive levels can and should be taught in our educational system. In 40 years of research, Bloom and Broder demonstrated that such skills could be taught (Chance, 1987).

Bloom asserts that such practices as changing from passive learning (lecture style) to active learning improve the problem solving abilities of students (Chance, 1987). Tutoring is successful because of the one-on-one active learning. His learning system of mastery learning is based on active learning situations that reinforce the individual students contributions. The mastery learning system also uses group work, remediation, and leveling the students prior knowledge of the subject matter. Not known to be shy with his opinions, Bloom emphasizes that the current education systems are designed to ensure student failure because they rely on passive learning (Chance, 1987).

Davis (1983) cites a large body of research that claims the schools teach only rote methods for mathematics and that often teachers discourage creativity in their students performance. He urges teachers to not view students ability to do work correctly but to "[v]iew them as building up complex representations in their minds." (p. 108). He concludes that most students could learn much more than previously believed if curricula were aimed at higher cognitive abilities.

Winter, McClelland and Stewart (1981) found that selective liberal arts colleges produce students with increased critical thinking skills. Bell (1966) posited that the liberal approach introduces material within a conceptual framework that teaches the student to analyze and evaluate the material. Woditsch, Schlesinger, and Giardina (1987) believe that the use of liberal instructional methodology improves students' effectiveness. Their summation of how liberal education achieves this is:

> 1) Thinking skills mature recursively--educators need to supply context and sustain motive for that recursion: and
> 2) to be guided, thinking skills need to be caught in action, not just surmised from their outcomes (Woditsch, Schlesinger & Giardina, p. 53).

Stark and Lowther (1988) agree "that students who are active rather than passive learners readily learn and use the concepts and skills taught." (p. 41).

The Alverno College studies are an example of curriculum changes to improve cognitive skills (Stark & Lowther, 1986). Mentkowski and Doherty (1984) report on

their longitudinal study that tracked 990 participants from their first year of college until two years past graduation. They found that student learning was improved by integration and application of cognitive skills across the curriculum and that students enjoyed the liberal learning process. Alverno alumnae stressed that the reasoning abilities and interpersonal skills were important in their work. The research studies indicated that college outcomes must include more than knowledge because profession-specific abilities become cornerstones for development in the major field and that learning to learn must tie the knowledge base, experience, and theory to productive action.

Problems in Current Accounting Curricula

As discussed in Chapter I, members of the accounting profession has called for a significant change in accounting education (AICPA, 1988; AECC, 1990; Wyatt, 1989; Sprouse, 1989; Mueller & Simmons, 1989; Elliott, 1991; Mayer-Sommer, 1990; Beaver, 1992; Williams, 1991; Patten & Williams, 1990). Members of the eight largest international accounting firms issued a position statement in 1989 that called for a change in the educational preparation of accounting students. This call for change was responded to by the AICPA (professional practitioners) and the AAA (academic community) (AICPA, 1988; AECC, 1990). Both groups called for increased attention to student skills, knowledge and professional orientation in accounting education.

Numerous national education committees are calling for changes in higher education in general (Mueller & Simmons, 1989). Mayer-Sommer (1990) cites literature that complains that all of American higher education is suffering from a failure to change in a changing world and to foster independent critical thinking and analytical skills in our students.

Rudolph (1984) insists that the problems in education cannot be corrected without examining the history of the evolution of professional education. The American college was a passport of liberal education to replace the hereditary aristocracy. The liberal education created certification as a "gentlemen" for those destined to the ministry, law or medicine until the 1830s. Egalitarianism then crept into American society and opened professions to all citizens with or without liberal education. By the end of the nineteenth century, the colleges and universities opened their curricula to professional studies in order to preserve their existence. Industry demands and specialization chipped away at liberal curriculums until college programs became career programs. Rudolph asserts that the power for curriculum change lies with the professors who alone have the "power to will great change in the undergraduate curriculum" (Rudolph, 1984, p. 41).

A redirection toward the liberal method of instruction can assist the accomplishment of the AECC goals. The difference between the liberal and professional course is

not just in content, but the

> emphasis on cognitive skills, rational analysis, the stuff it took to be communicative--clear, expressive, imaginative. A liberal course of study invited contemplation, a look inward, as assessment, even a reassessment of self and society. (Rudolph, pp. 15-16.).

Williams (1991) indicates that American accounting education does not sufficiently develop the skills and attributes of the students.

Henry and Razzouk (1988) asked members of CPA firms to rank the importance of criteria in hiring of graduate accountants. The results ranked effective communication skills first, technical knowledge second, academic grades third, and knowledge of computers eighth. At the same time, the practitioners ranked the competencies of interns in their firms. In ability to communicate in writing, they ranked only 1.1 percent as excellent, 13.8 percent as good, 40.2 percent as average, and 36.8 percent as poor. In analytical ability, they ranked 8 percent as excellent, 32.2 percent as good, 43.5 percent as average, and 10.3 percent as poor.

Patten and Williams (1990) identify the basic problem in accounting education as the failure to change with the times. The professional demands of accountants have changed rapidly in the past two decades while the accounting curriculum, from textbooks to delivery, have remained virtually unchanged. They advocate the following actions:

1. Broaden the undergraduate curriculum;
2. Develop students' intellectual, interpersonal, and communication skills;

3. Emphasize students' learning to learn as a primary classroom objective;
4. Move from a curriculum based on teaching accounting standards to one which is based on an information development and distribution function for economic decision making;
5. Improve the educational preparation of new faculty;
6. Re-orient the value system of new and older members of the faculty; and
7. Improve the quality of those attracted to careers in accounting (p.176).

Closely related to success in these endeavors is a change in the reward system and training of faculty to improve the quality and effectiveness of teaching.

Barefield (1991) concurs that little change has occurred in the last 30 years but argues that it is due to a lack of consensus among educators and professionals about what to change. Wyatt (1989) calls for changes in the emphasis of the accounting curriculum. He calls for the student experience to be less oriented toward technical issues and more focused on the context in which conflicts are encountered and resolved; the societal function of accounting; and foundations for reasoning, analyzing, and problem solving.

Teaching to the Uniform Certified Public Accountants Examination is another problem in the current accounting curricula (Wyatt, 1989; Sprouse, 1989; Williams, 1991; Patten & Williams, 1990; AECC, 1991). An accounting curriculum that concentrates on students passing the CPA examination focuses on the lower cognitive skills of knowledge and comprehension instead of higher level analytical skills. Elliott (1991) concurs and recommends

"ousting the memorization of narrow rules and replacing it with analytical and conceptual thinking. . . with knowledge of leading-edge thinking on issues that affect our economic competitiveness." (p. 6).

To illustrate the power of the CPA examination, Mayer-Sommer (1990) notes that one American Accounting Association president stated that all that needed to happen to change the accounting curriculum was to change the CPA exam. The AECC published an Issues Statement in 1991 calling for all accreditation boards to refuse to count CPA review courses as fulfilling the requirements for sitting for all professional examinations including the CPA, Certified Managerial Accountant (CMA), and Certified Internal Auditors (CIA) examinations. They further recommended that college seniors no longer be allowed to sit for professional examinations because it interrupts the focus of their final academic semester (AECC, 1991).

Methods to Change the Accounting Curricula

The Accounting Education Change Commission (1990) recommended that educators emphasize life-long learning comprised of the three components of skills, knowledge and professional orientation. The commission called for active student learning, improved communication skills, increased analytical and problem-solving skills, and teaching strategies that encourage students to learn on their own throughout their lifetimes.

Professional education specialists Stark & Lowther (1988) delineate the important focus of professional education:

> Educators from all professional fields independently assert the need for students to develop additional important abilities. Minimally, these include critical thinking skills, communication skills, interpersonal skills, awareness of the context for professional practice, and professional ethics. When professional education is exemplary, both students and faculty recognize that such broad abilities undergird technical competence and suffuse the professional role (pp. 21-22).

Professional education is paradigmatic and must be consistent with the context in which it operates (Stark & Lowther, 1986). The student's interpretation of the context is an important part of the learning process (Van Rossum et al, 1985). Wyatt (1989) urges educators to decrease the emphasis on the intricacies of the knowledge base and focus on "developing a foundation to reason, to identify the issues, analyze the alternatives, and resolve the conflicts" (p. 128) by understanding the changing environment in which accountants operate and the objectives that society expects accountants to achieve.

Active student learning is consistent with an increase in the writing and speaking requirements for accounting majors. Passive learning without writing assignments and oral presentations inhibits intellectual stimulation and mastery of the discipline in economics majors (Siegfried et al, 1991). Siegfried and his associates insist that:

> To achieve the overall objective of the major, the intermediate macro and micro courses must emphasize active student learning, practice in applying what students learn, and the exercise of critical judgment. Much of this can be accomplished by increasing the number of carefully structured writing assignments that demonstrate the power of application (p. 216).

Stark & Lowther (1988) and Weingartner (1993) found that research indicates that active learners learn more readily and use the skills and concepts introduced better than passive learners. Liberal arts perspectives in professional programs keep students active in writing assignments, projects requiring problem solving and analysis, simulations, and capstone courses. Weingartner (1993) insists that critical thinking skills for problem solving must be taught in the context of the field or discipline in order to be effective.

Doyle (1986) describes expert writing as a knowledge-transforming process. The transformation comes about because of the planning, internal dialogue, and the learning that take place in the writing process. Weingartner asserts that writing "stimulates the mind to a higher level of activity" (Weingartner, 1993, p.109). Ingram and Frazier (1980) indicate that rhetorical skills are important to practitioners, and each assignment should clarify for the student his conceptual understanding of his field and how those concepts are communicated. They also recommend that proficiency in communication skills should be a requirement for graduation. Porter and McKibbin (1988) concur that communication and leadership skills are often lacking in the

business school graduates. Mills and Robertson (1992) suggest that writing microthemes helps synthesize material to internalize the information, and improve logic skills and reading comprehension.

"Writing clearly is the acid test of thinking like an economist" (Siegfried et al., 1991, p. 211) and should be included in intermediate theory and elective economics courses. Likewise, writing skills must be an important part of most courses in accounting (Arthur Andersen & Co., et al, 1989). If writing is relegated to English and Business Communications courses, it implies that the skill is not very important in their careers. Research shows that freshman writing skills can deteriorate during the college years if not reinforced throughout the curriculum (Stocks, Stoddard & Waters, 1992).

Stocks, Stoddard and Waters (1992) indicate that accounting professors avoid writing in their classes because "accounting is a numeric, problem-solving discipline that is not really suited for writing assignments" (p. 191). Reasons cited are that accounting professors do not recognize the importance of writing; do not recognize the difference between learning to write and writing to learn; think only in terms of research papers; do not know how to construct effective writing assignments; and do not have time to spend grading such assignments. However, the purposes of students writing in accounting courses are:

1. learning to write by practicing writing with

appropriate feedback;

2. writing to learn concepts of accounting;
3. fostering critical and analytical thinking by analyzing and evaluating information and reporting the results of the analysis;
4. improving organizational skills by using good logic to present ideas;
5. reflecting mastery of the knowledge base of accounting by coupling this with writing to learn;
6. synthesizing the knowledge base of accounting;
7. understanding the audience who receives the communication.

Increasing cognitive skills can also be accomplished by moving from structured problem solving to unstructured problems. Davis (1983) urges teachers to recognize student creativity in solving mathematical problems instead of complying with preferred methods of texts and teachers. Fredericksen (1984) advocates the use of "ill-structured" problems by demonstrating examples of good solutions and providing feedback to the students to teach them problem solving. He cites J. G. Greeno's model of problem solving that argues that teaching problem solving for a specific domain is more useful than teaching problem solving in general.

Doyle (1986) distinguishes between familiar and novel work. Familiar work is routine, structured assignments. Novel work is non-routine assignments that require assembly

of information without structured solutions. Novel work is ambiguous, risky for the students, and it demands higher cognitive skills. Novel work creates a more chaotic classroom environment that makes the teacher's task more complex. In familiar situations, students are capable of producing correct work without understanding the meaning of the answers or the underlying concepts of the exercise. It is possible to also form or remember erroneous information concerning the underlying principles. This is more difficult in the novel situation because there is no structure to substitute for understanding in arriving at the answer.

Teaching strategies that contribute to lifelong learning involve teaching the students to investigate and search out knowledge. Smith (1975), in arguing for maintaining a separate accounting theory course, stresses the need for accounting students to be "introduced to the literature of accounting and challenged to evaluate the arguments presented" (p. 38) early in the academic experience. He indicates that this creates an important environment for a capstone course. But he also contends that all intermediate and advanced accounting courses should contain heavy doses of theory along with procedures.

Sprouse (1989) also argues that "[a]ccounting teachers, especially those who author textbooks, need to develop materials that require literature searches and therefore exposure . . .to all relevant literature" (p. 108).

Gregory (1984) indicates some important issues to consider when redesigning introductory courses:

1. teach less and teach better by discussing and evaluating course materials instead of simply presenting them;
2. use essay tests extensively to avoid students' misconception that issues are dichotomous;
3. connect course materials to the real world;
4. discuss ethical implications of material presented;
5. recognize that facts are not the only legitimate knowledge;
6. force students to discuss the course material and its relevant issues such that they learn the art of discussion;
7. teach students the process of higher cognitive thinking, especially critical thinking; and
8. remember that education is about developing wisdom, not just skills.

The responsibility and power to change the curriculum lies not with the AECC, the AICPA or the Big Six accounting firms but the faculty (Rudolph, 1984; Davis, 1983; Arthur Andersen & Co., et al, 1989; Elliott, 1991; Mock, Pincus & Andre, 1991). Only the faculty can implement the reforms or fail to do so.

Summary

The cognitive development of students has been described by Piaget and Perry. Bloom's taxonomy describes the educational objectives of students' cognitive activity. Bloom is relevant for the purposes of describing educational objectives on the college level with students of mixed ages because his model is not described in terms of age level or maturity. Although not measurable in finite terms, Bloom's taxonomy is being used as a model in business education research and current accounting education literature.

Perry and Bloom assert that educators can assist students' cognitive development as part of a learning process with proper teaching methods and curriculum. The Alverno College experience clearly indicates in a longitudinal study that a curriculum that encourages the use of higher cognitive skills is beneficial to students.

Critics of accounting higher education call for a return to the liberal approach to learning which is not content specific but focuses on inquiry, analysis, assessment and evaluation. It encourages discussion, reading and writing within a framework of the real world and focuses on understanding the context and concepts of the field of study. In contrast, accounting programs continue to concentrate learning on the vast disciplinary knowledge base. Rapid development within the field of accounting has caused the knowledge base to grow at an exponential rate in the past 30 years making it virtually impossible to learn

the entire accounting knowledge base in a four-or-five year program.

The literature suggests three principle methods to improve accounting education to produce critical thinkers in accounting. The first is to incorporate writing into the curriculum to cause students to learn actively to comprehend, analyze, synthesize, and evaluate subject matter. Writing is a transforming process that requires planning, logic and internalization of concepts.

The second method suggests moving the classroom concentration from structured problem solving to unstructured problem solving. Unstructured[1] problems increase the student investment in the learning process and produce dividends in terms of cognitive skills. Students are less likely to form misconceptions about the principles underlying the practice when solving unstructured problems.

The third method requires students to investigate the discipline's literature to evaluate the arguments presented in that literature and to learn the context of their disciplinary paradigm. They are more likely to become lifelong learners and critical thinkers because they better understand the context of their major field of study. Learning the context cannot be isolated in one course taught at the end of the accounting education process; it must start early and pervade each course in accounting.

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[1]The terms ill-structured, novel, and unstructured are used in the accounting literature as equivalents.

The professor who plans his or her individual courses ultimately controls the methods of accounting education. Each has a professional responsibility to improve the current system of accounting education by requiring active learning, writing, literature review, unstructured problem solving, analysis and evaluation.

Based on the literature review, the researcher developed a framework for a course to improve student outcomes in the accounting education experience that meets the challenges of the AECC. This course was placed at the first-semester junior position in the accounting curriculum to introduce the accounting context via accounting literature, to present the conceptual framework of accounting theory, to encourage active student learning in unstructured theoretical problem discussions, to require student writing throughout the course to evaluate accounting issues, to improve student oral communication skills, and to demonstrate how to use and develop higher cognitive skills.

CHAPTER III

METHODOLOGY

Introduction

This chapter presents the research hypotheses and describes the development of the course pedagogy, the design of the measurement instrument, the selection of the student population, the research design, the collection of data, and the data analysis.

Research Hypotheses

Based upon the literature review, students who are introduced to accounting theory early in a curriculum that requires a lot of writing, verbal communication, and higher cognitive activities of application, analysis, synthesis, and evaluation will have a better understanding of accounting theory and better analytical skills than students who take the traditional intermediate accounting courses taught with passive learning methods. The basic research questions are contained in the following hypotheses that are stated in the alternative form:

Hypothesis 1: Students in the Theory group have a significantly higher grade-point average (GPA) than students in the Intermediate and Auditing groups.

As discussed in Chapter One, the self-selection process may bias the results of the study if the GPA of the Theory group is significantly different than the Intermediate and Auditing groups.

Hypothesis 2: Students who have completed an introductory course in accounting literature and theory and the first course in intermediate accounting will score significantly higher on a constructed examination that tests higher cognitive skills in accounting theory than students who have only completed the first course in intermediate accounting or who have completed the first course in auditing and the traditional intermediate accounting courses.

The Introduction to Accounting Literature and Theory course is designed to require students to use higher cognitive skills when learning about accounting theory as evidenced by the conceptual framework of accounting. The only formal introduction to the conceptual framework of accounting occurs in the second chapter of the first intermediate accounting textbook and normal coverage amounts to one week or less of the semester. The normal coverage is on the knowledge and comprehension level. Auditing students are usually in the last or next-to-last semester before graduation. In the auditing course, they are asked to use application, analysis, synthesis, and evaluation skills in accounting theory. If the null of the hypothesis is rejected, then the students in the Theory group performed

significantly higher than the Intermediate group and the Auditing group on the examination, implying that the higher cognitive skills were improved by the taking of the theory and literature course.

Hypothesis 3: Students who have completed an introductory course in accounting literature and theory and the first course in intermediate accounting will not score significantly higher on the questions testing knowledge and comprehension on a constructed examination on accounting theory than students who have only completed the first course in intermediate accounting or who have completed the first course in auditing and the traditional intermediate accounting courses.

The Introduction to Accounting Literature and Theory course is designed to increase the higher cognitive skills in accounting theory. Because of the way the course is taught, the knowledge and comprehension components may not show improvement over students in the Intermediate and Auditing groups. If the null of the hypothesis is rejected, the Theory group did not show significant improvement over the Intermediate and Auditing groups.

Hypothesis 4: Students who have completed an introductory course in accounting literature and theory and the first course in intermediate accounting will score significantly higher on the questions testing application, analysis, synthesis and evaluation on a constructed examination on accounting theory than students who have only

completed the first course in intermediate accounting or who have completed the first course in auditing and the traditional intermediate accounting courses.

Because of the way in which the Introduction to Accounting Literature and Theory course is designed and taught, the Theory group should score significantly higher on the questions that test application, analysis, synthesis, and evaluation of the conceptual framework of accounting than the Intermediate and Auditing groups. If the null of the hypothesis is rejected, the Theory group scored significantly higher on these questions.

Development of Course Pedagogy

The course was designed to address both the AECC goals to improve accounting education and the specific pedagogical goals of the instructor.

The goals to improve accounting education as set forth by the AECC are:

1. to improve students' communication skills by requiring reading, writing and public speaking within the course requirements;
2. to improve students' intellectual skills by requiring the extensive use of library research to locate and organize information;
3. to improve students' accounting knowledge by providing the students with the conceptual framework in order for students to utilize

accounting information to form judgments about application of accounting principles and theory;

4. to improve the students' professional orientation by starting their accounting education with the theoretical foundation that will encourage them to address accounting issues with a higher level of competence and objectivity.

The specific pedagogical goals of the instructor are:

1. to have students research and trace the history of accounting to give them a perspective for the development of accounting as a profession and a discipline;
2. to explain the process of theory building and the development of the Conceptual Framework of Accounting so that students can understand how paradigms develop and continue to change;
3. to demonstrate how to analyze and evaluate current accounting dilemmas by using the Conceptual Framework of Accounting;
4. to recreate the process of accounting principle promulgation so that students experience the difficulty of arriving at consensus in theoretical accounting problems;
5. to improve students' abilities in writing personal opinions, critical analyses, research summaries, or deriving solutions to current accounting problems through a process of writing and

receiving constructive critical responses to the writing;

6. to improve students' oral communication skills through practice each class session with either informal class discussion, formal presentation, or group projects requiring analysis and evaluation;
7. to analyze current accounting dilemmas that require the students to synthesize several diverse accounting theories;
8. to demonstrate the use of models to enable students to evaluate situations to make professional decisions; and
9. to have the students understand the context of accounting through reading the current accounting literature.

With these goals in mind, the outline of the course and course materials was developed. The course syllabus with course objectives, student outcomes, and description of assignments is included in Appendix B.

Design of Test Instrument

The following procedures were used by the researcher in preparing the test instrument found in Appendix C:

1. using the student objectives as a measure (in Appendix B), assessed the desired student performance criteria;
2. using the course outline, defined the subject

matter to be tested;

3. referred to Bloom's guidelines to achieve measures of higher cognitive skills in writing the test questions;
4. combined the information in 1, 2 and 3, wrote the test questions;
5. circulated the completed questions to three peers and solicited evaluations for content validity;
6. rewrote the questions until all peers concurred that the test exhibited content validity;
7. administered the test to a group of summer school students in the first course in auditing or the first intermediate course as a sample test.
8. tested the results for internal consistency using the Cronbach's alpha test.

The test instrument was designed in a multiple-choice format to quantitatively measure achievement of student outcomes. The final version of the instrument contains 25 questions. Nine of the questions require knowledge and comprehension skills about the Conceptual Framework of Accounting. Sixteen of the questions require the use of higher cognitive skills of application, analysis, synthesis and evaluation of accounting theory based on the Conceptual Framework. The researcher studied examples of tests for each type of cognitive skill in Bloom, Hastings & Madaus (1971) to aid in the preparation of testing materials to measure these student skills. Eleven of the questions were taken from a

highly regarded test bank because they were well constructed questions; the researcher developed the balance of the questions.

The researcher designed the questions and tested them for content validity by circulating the test among three qualified peers and soliciting their professional judgment about the content of the instrument. The peers eliminated three of the original questions because of concern about the length and difficulty of the examination.

The instrument was designed to be administered in a 50 minute class period. The estimated length of the test was 45 minutes to allow time for exam distribution, instructions, and collection. In order for the students to have incentive to answer the questions to the best of their ability, they were told that the pretest and posttest would count as a quiz grade.

Selection of Student Population

The students participating in this study came from a population of about 800 accounting majors in a College of Business Administration within a Comprehensive I university located in a major metropolitan area. The university enrolls approximately 16,000 students, 3800 of which are in the College of Business Administration. The metropolitan area has a population of approximately 950,000 individuals.

Three separate samples of students were chosen. The first group is the Treatment Group, named the Theory group,

comprised of junior students who have voluntarily enrolled in the Introduction to Accounting Literature and Theory class for the Fall semester, 1993. This group began with a population of 11 and ended with eight students. The students learned of this new course by conversations with the researcher, their instructor for Elementary Accounting II, and their academic advisor.

The second group of students were junior students who voluntarily enrolled in Intermediate Accounting I in the Fall semester, 1993. This group comprised the Control Group I, referred to as the Intermediate group. Students in the Theory class were also enrolled in the traditional Intermediate Accounting I class but their results were only counted in the Theory group. The Intermediate group had 123 students take at least one examination, but only 66 students took both examinations.

The third group of students were senior students who voluntarily enrolled in Auditing for the Fall, 1993 semester. This group comprised the Control Group II, called the Auditing group. The Auditing group had 54 students take at least one examination and 45 took both examinations.

Research Design

The experimental design was conducted using a pretest-posttest control group design. This experimental design ameliorates many of the threats to internal validity inherent in quasi-experimental designs. Intrasession

history was controlled by reading the instructions to all groups from a preprinted set of instructions. Maturation and testing effects occurred equally across the groups. Instrumentation was controlled because the operation consisted of student responses to a preprinted test. Mortality was controlled by eliminating the results for all students not completing both the pretest and the posttest. This avoids biased results.

One apparent threat to internal validity is selection. Because the enrollment in the Theory group is voluntary, it seems logical to assume that the students who choose to take an elective non-traditional course will be more serious students than the average intermediate level student. Therefore, the results of the posttest may be biased by selection.

Another possible threat to internal validity is bias from the instructor teaching to the test. Because the questions in the instrument are objective questions designed to test higher cognitive skills in accounting theory instead of the essay questions that the students experienced in the course, it is unlikely that the teacher overtly influenced the results. In addition, the researcher's sense of ethics and professionalism encouraged the researcher to avoid any behaviors that might further bias the results.

Possible threats to external validity in this type of experimental design arise from the interaction effect of testing and the treatment and the interaction effect of

selection and the treatment. Interaction effects of testing and the treatment can be reduced by the use of regular classroom examinations representative of those normally used in the curriculum. The instrument design met this criteria. The voluntary nature of course enrollment may serve as an interaction of selection and the treatment. This is especially true for the Theory group. Generalizability may be limited to students in schools of comparable size and student population.

Procedures

The following procedures were followed in obtaining permission to teach the Introduction to Accounting Literature and Theory course and conducting the research:

1. Early in the Fall semester, 1992, the researcher presented the concept of this course to the subject school accounting department curriculum committee. The committee agreed that the project was worthwhile and would be a potential course to add to the 150-semester hour curriculum now being studied by the committee. The committee will review the results of this study before rendering a decision concerning addition of the course to the regular curriculum.
2. The researcher developed the outline of the course and sought permission to place the course on the Fall, 1993 schedule in October, 1992. In

February, 1993, the chairman of the accounting department and the dean of the college agreed to place the course on the Fall, 1993 schedule.

3. During the month of March, 1993, the researcher examined books and materials for the students. On April 1, 1993 the researcher presented a list of texts to the bookstore to place orders.
4. During June, 1993 the researcher contacted authors and publishers to arrange permission to reprint articles and one book that is out of print.
5. During June and July, 1993 the researcher wrote the course syllabus and selected the literature required for each class session.
6. During July, 1993 the researcher coordinated with the library staff to ensure that the requisite materials are available in the school library and arranged for the library staff to present a special class to the Theory group in the first week of classes to inform students about library research.
7. During June and July, 1993 the researcher designed and validated the test instrument with peers and administered trial examinations to summer school students.
8. During August, 1993 the researcher arranged for faculty cooperation in administering the test instrument to the classes of other faculty members

during the Fall semester.

9. The researcher conducted the Theory class from August to December, 1993. The researcher was able to conduct exit interviews with two of the three students who dropped the class before mid-term.

10. The researcher and a graduate assistant administered the pretest in the first and second weeks of the Fall, 1993 semester and administered the posttest during the last two weeks of regular instruction in that semester. The students were instructed to answer the questions to the best of their ability. The tests were unannounced and the students were not informed that there would be a posttest. Each student was provided an examination, proper pencils, and a scantron answer sheet for machine scoring.

11. Students provided their names, ages, and student identification number. The last four digits of the student identification number was used to control for mortality. The researcher obtained students' grade point averages from departmental reports.

12. The students in the Theory group prepared course and teacher evaluations and submitted the results to the college dean in December, 1993. (The researcher received the results from the Vice-President of Academic Affairs in February, 1994.)

13. A graduate assistant conducted individual interviews with the students completing the Theory class during finals week in December, 1993. An audio tape of the interviews was transcribed by the researcher's secretary.

Analysis of the Quantitative Data

The data were analyzed for four hypotheses testing for significant difference in:

1. the GPA of the three groups using an Analysis of Variance (ANOVA);
2. the results of the posttest scores between the three groups of students using an ANOVA with the pretest scores, age, gender, and grade-point average (GPA) as covariates;
3. the results of the knowledge and comprehension questions from the posttest scores (KC Posttest) using an ANOVA with KC pretest scores, age, gender, and GPA as covariates;
4. the results of the application, analysis, synthesis, and evaluation questions from the posttest scores (AASE Posttest) using an ANOVA with AASE pretest scores, age, gender, and GPA as covariates.

The GPA and posttest scores were further analyzed (using only covariates showing significant differences) by the Waller-Duncan, Scheffe, Tukey tests of means.

The test instrument was tested for internal reliability using the Cronback alpha test.

Hypothesis 1: Students in the Theory group have a significantly higher grade-point average (GPA) than students in the Intermediate and Auditing groups.

The following definitions apply to Hypothesis 1:

μ_1 = the mean GPA of the Auditing group
μ_2 = the mean GPA of the Intermediate group
μ_3 = the mean GPA of the Theory Group.

For Hypothesis 1, the test hypothesis is:

Ho_1: $\mu_1 = \mu_2 = \mu_3$

Ha_1: $\mu_1 \neq \mu_2 \neq \mu_3$

to test if there is a difference in the mean GPA of the three groups. If the null hypothesis is rejected, there is a significant difference in at least one mean. In order to determine which mean is different, the corollary hypothesis is:

Ho_{1a}: $\mu_1 = \mu_2 = \mu_3$

Ha_{1a}: $\mu_3 > \mu_1$ and μ_2

Corollary Ha_{1a} proposes that the mean GPA of the Theory group is significantly higher than the mean GPA of the Intermediate and Auditing groups. To test this corollary, the Waller-Duncan, Scheffe and Tukey tests of means are performed to indicate which group is different. If the null hypothesis is rejected, the research conclusion would be that the Theory group consists of superior students and the composition of the group might bias the results of the study.

Hypothesis 2: Students who have completed an introductory course in accounting literature and theory and the first course in intermediate accounting will score significantly higher on a constructed examination that tests higher cognitive skills in accounting theory than students who have only completed the first course in intermediate accounting or who have completed the first course in auditing and the traditional intermediate accounting courses.

The following definitions apply to Hypothesis 2:

μ_1 = the mean of the posttest scores for the Auditing group

μ_2 = the mean of the posttest scores for Intermediate group

μ_3 = the mean of the posttest scores for the Theory group.

For Hypothesis 2, the test hypothesis is:

Ho_2: $\mu_1 = \mu_2 = \mu_3$

Ha_2: $\mu_1 \neq \mu_2 \neq \mu_3$

If the null hypothesis is rejected, at least one of the group's posttest means is significantly different from the other two groups. In order to determine which mean is different, the corollary hypothesis is:

Ho_{2a}: $\mu_1 = \mu_2 = \mu_3$

Ha_{2a}: $\mu_3 > \mu_1$ and μ_2

Corollary Ha_{2a} proposes that the mean posttest scores of the Theory group is significantly higher than the mean posttest scores of the Intermediate and Auditing groups. To test this corollary the Waller-Duncan, Scheffe, and Tukey tests of means are performed to indicate which group is different.

If the null hypothesis is rejected, the research conclusion would be that the students who participated in the Theory course performed better on the test instrument because they participated in the Introduction to Accounting Literature and Theory course.

Hypothesis 3: Students who have completed an introductory course in accounting literature and theory and the first course in intermediate accounting will not score significantly higher on the questions testing knowledge and comprehension on a constructed examination on accounting theory than students who have only completed the first course in intermediate accounting or who have completed the first course in auditing and the traditional intermediate accounting courses.

The following definitions apply to Hypothesis 3:

μ_1 = the mean of the posttest scores on questions testing knowledge and comprehension for the Auditing group

μ_2 = the mean of the posttest scores on questions testing knowledge and comprehension for the Intermediate Group

μ_3 = the mean of the posttest scores on questions testing knowledge and comprehension for the Theory Group.

For Hypothesis 3, the test hypothesis is:

Ho_3: $\mu_1 \neq \mu_2 \neq \mu_3$

Ha_3: $\mu_1 = \mu_2 = \mu_3$

If the null hypothesis is rejected, the three group's posttest means of knowledge and comprehension questions are not significantly different. If the null hypothesis is not rejected, then to determine which mean is different, the

corollary hypothesis is:

Ho_{3a}: $\mu_1 = \mu_2 = \mu_3$

Ha_{3a}: $\mu_3 \leq \mu_1$ and μ_2

Corollary Ha_{3a} proposes that the Theory group's mean posttest scores on knowledge and comprehension questions is not significantly higher than the Intermediate and Auditing groups' mean posttest scores on knowledge and comprehension questions. To test this corollary, the Waller-Duncan, Scheffe, and Tukey tests of means are performed to indicate which group is different. If the null hypothesis is rejected, the Theory group has not scored significantly higher on the posttest for questions measuring knowledge and comprehension than the Intermediate group and the Auditing group. The research conclusion would be that the students who participated in the Theory course did not perform better on the questions measuring knowledge and comprehension because they participated in the Introduction to Accounting Literature and Theory course.

Hypothesis 4: Students who have completed an introductory course in accounting literature and theory and the first course in intermediate accounting will score significantly higher on the questions testing application, analysis, synthesis, and evaluation on a constructed examination on accounting theory than students who have only completed the first course in intermediate accounting or who have completed the first course in auditing and the traditional intermediate accounting courses.

The following definitions apply to Hypothesis 4:

μ_1 = the mean of the posttest scores on questions testing application, analysis, synthesis, and evaluation for the Auditing group

μ_2 = the mean of the posttest scores on questions testing application, analysis, synthesis, and evaluation for the Intermediate Group

μ_3 = the mean of the posttest scores on questions testing application, analysis, synthesis, and evaluation for the Theory Group.

For Hypothesis 4, the test hypothesis is:

Ho_4: $\mu_1 = \mu_2 = \mu_3$

Ha_4: $\mu_1 \neq \mu_2 \neq \mu_3$

If the null hypothesis is rejected, at least one of the group's posttest means on application, analysis, synthesis, and evaluation questions is significantly different from the other two groups. In order to determine which mean is different, the corollary hypothesis is:

Ho_{4a}: $\mu_1 = \mu_2 = \mu_3$

Ha_{4a}: $\mu_3 > \mu_1$ and μ_2

Corollary Ha_{4a} proposes that the Theory group's mean posttest scores on application, analysis, synthesis, and evaluation questions is significantly higher than the Intermediate and Auditing groups' mean posttest scores on application, analysis, synthesis, and evaluation questions. To test this corollary the Waller-Duncan, Scheffe, and Tukey tests of means are performed to indicate which group is different. If the null hypothesis is rejected, the research conclusion would be that the students who participated in the Theory course performed better on the questions measuring application, analysis, synthesis, and evaluation

because they participated in the Introduction to Accounting Literature and Theory course.

Analysis of the Qualitative Data

The qualitative data analysis of the written teacher evaluations and interview responses describes the perceptions of the students in the Theory group about participating in the Introduction to Accounting Literature and Theory course. Questions from the teacher evaluations appear in Appendix D. These questions focus on the teacher preparation, knowledge, and delivery, the quantity of homework, and the pace of the course.

Interviewer questions appear in Appendix E. These questions focus on what the students perceived they achieved in the course and the type of learning they experienced. Students were asked to make recommendations for changes in the content and presentation of the course and to evaluate what the course added to their curriculum.

Summary

The results of the pretests and posttests provided the researcher with data that can be analyzed to determine if the students in the Theory group performed better on an examination constructed to measure higher cognitive skills in accounting theory. The researcher can analyze the interview transcripts and results of teacher evaluations to determine student perceptions about the benefits they

derived from taking the Introduction to Accounting Literature and Theory course. Both the quantitative and qualitative data can determine the effect of the treatment on the students' cognitive development.

CHAPTER FOUR

FINDINGS

Introduction

The researcher designed an accounting theory course to be taught in the first semester junior year to introduce students to accounting literature and theory. The researcher employed teaching methods that included students reading the professional literature to learn the context of the profession, writing to learn and learning to write professionally, formal and informal oral presentations, group work, and essay examinations. The teaching methods and assignments were designed to require students to develop and use higher cognitive skills to learn accounting theory.

This chapter presents information from the student groups and the test instrument, the findings of the pretests and posttests, and results of the students' evaluations and interviews. All tests were performed using the Statistical Application Software (SAS) on a mainframe IBM computer. A significance level of $\alpha = .05$ was used for all tests.

The Student Groups

The student groups consisted of the treatment group (Theory group) and two control groups (Intermediate group

and Auditing group). Each group self-selected through enrollment procedures at the university. A group of 11 students self-selected to take the Introduction to Accounting Literature and Theory class. The instructor made them aware that they were part of this study and that their input would be sought. Three students dropped the course before mid-term. The researcher interviewed two of these students. Each cited commitments with work and difficulty with performance in Intermediate Accounting I as reasons for dropping the course. Both felt that performing well in Intermediate Accounting I was more important and sacrificed this course, which was an elective course, to give them more time for study. Table I provides information on the demographics of the students who comprised the three groups.

TABLE I

DEMOGRAPHICS OF THEORY, INTERMEDIATE, AND AUDITING GROUPS

	Theory	Intermediate	Auditing
Mean GPA	2.88	3.14	3.18
Mean Age	23.75	27.64	29.56
Gender - Female	5	39	27
Male	3	27	18
Total Students	8	66	45

The demographics represent those students who completed both the pretest and the posttest. Six of the eight students in the Theory group were traditional-age students. When compared to the demographics of the Intermediate group and

the Auditing Group, the Theory group had the lowest mean GPA and age. Women comprise approximately 60 percent of each group.

Hypothesis 1 tests whether the three groups have different mean GPAs. The test hypothesis is:

Ho_1: $\mu_1 = \mu_2 = \mu_3$

Ha_1: $\mu_1 \neq \mu_2 \neq \mu_3$ where

μ_1 = the mean GPA of the Auditing group
μ_2 = the mean GPA of the Intermediate Group
μ_3 = the mean GPA of the Theory group.

The ANOVA tests the means of each group for difference. A special form of the ANOVA, General Linear Model (GLM), was used. GLM is used with groups that have a different numbers of observations. The results of the ANOVA are presented in Table II.

TABLE II

ANOVA TABLE FOR GROUP GPA

Dependent Variable: GPA

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	0.58975	0.29488	1.11	0.3346
Error	116	30.94984	0.26681		
Total	118	31.53959			
R-Square	0.018699		GPA Mean	3.1368	

The statistical conclusion is to fail to reject Ho_1. With a P Value of 0.3346, we can conclude that none of the

means are significantly different at the α =.05 level. Therefore, the Theory group does not have a higher GPA level than the Intermediate and Auditing groups and should not bias the results of the study. Because of the lack of difference in the means, there is no need to test the corollary Ho_{1a}.

The Test Instrument

The test instrument was validated for content validity by three peers as described in Chapter 3. The reliability of the instrument was also tested for internal consistency by the use of Cronbach's alpha, a split-half technique that tests internal consistency by computing the mean reliability coefficient estimates for all possible split-half combinations (Davis & Cosenza, 1988). Cronbach's alpha is used frequently in business and education research and is best applied to instruments that test only a few constructs. The more frequently the same construct is questioned, the more powerful the test. Similarly, the value of α is likely to rise with such repetition (Dillon, et al, 1987).

The test instrument measured six types of cognition (knowledge, comprehension, application, analysis, synthesis, evaluation) and 19 accounting concepts. No accounting concept question was asked more than twice, with the majority asked only once. The Cronbach's alpha test, using SAS, was performed on the pretest and the results are presented in Table III.

TABLE III

RESULTS OF CRONBACH'S ALPHA TEST

n = 180 α for RAW variables = 0.569437
α for STANDARDIZED variables = 0.570328

Item #	α RAW	α STANDARDIZED
1	0.550393	0.553297
2	0.550005	0.552520
3	0.548200	0.551211
4	0.569074	0.568261
5	0.586578	0.586128
6	0.560188	0.559921
7	0.542479	0.541013
8	0.569742	0.570093
9	0.551518	0.552300
10	0.537377	0.541156
11	0.560397	0.562473
12	0.549603	0.551748
13	0.568081	0.566686
14	0.553086	0.550987
15	0.567921	0.570203
16	0.577781	0.580638
17	0.567653	0.567948
18	0.567868	0.570222
19	0.565474	0.566790
20	0.552285	0.554569
21	0.545161	0.546484
22	0.576180	0.576991
23	0.544661	0.542415
24	0.549689	0.549576
25	0.565571	0.566079

The test produces an α value that ranges from 0 to 1 with 1 being the optimum value of perfect reliability. The result of 0.569437 is an expected value because the test contained questions of 19 concepts spread across six levels of cognitive skills with little or no repetition of questions. It is doubtful that a higher α value could be obtained with a non-repetitive test.

Results of the Pretest and Posttest

The researcher and a graduate assistant administered the pretests in the first and second weeks of the semester and the posttests in the fourteenth and fifteenth weeks of the semester. All tests were unannounced and students were not told that there would be a posttest. The results of the pretest were not given to the students before the posttest was administered. The Theory group took the pretest with their Intermediate I sections and took the posttest in the Theory class. The Theory group was the first to take the posttest so that they would not prepare for it. They were not informed that the other students would also take a posttest. The approximate time to take both the pretest and posttest averaged 20 minutes, which was less than predicted by the faculty peers. The researcher provided all students the results of both tests after the posttest. Table IV contains the means results of both tests.

TABLE IV

MEANS OF PRETEST AND POSTTEST

Group	Pretest Mean Score	Posttest Mean Score	Net Change
Theory	7.7500	12.6250	4.5150
Intermediate	8.0606	10.1212	2.0606
Auditing	11.0000	11.0666	0.0666

Hypothesis 2 seeks to determine if the posttest scores

of the treatment group (Theory) are significantly different than the two control groups (Intermediate and Auditing).

For Hypothesis 1, the test hypothesis is:

Ho_2: $\mu_1 = \mu_2 = \mu_3$

Ha_2: $\mu_1 \neq \mu_2 \neq \mu_3$ where

μ_1 = the mean of the posttest scores for the Auditing group

μ_2 = the mean of the posttest scores for Intermediate group

μ_3 = the mean of the posttest scores for the Theory group.

An analysis of covariance uses the model equation:

Posttest = group + pretest + age + gender + GPA.

The model assumes that all of the independent variables are in fact independent. In order to determine if the variables are in fact independent, the researcher conducted a Pearson Product Moment Correlation Coefficient test on the model to test the pretest, age, gender, and GPA to determine to what extent, if any, they are correlated. Table V contains the SAS Pearson Correlation Coefficient matrix. The first line of data in each element is the Pearson Correlation Coefficient and the second is the P Value that indicates if the two variables are correlated at the $\alpha = .05$ level. From the results, we can conclude that the pretest and the GPA are correlated and the pretest and age are correlated. Correlated variables should be eliminated from the model to maintain the integrity of the independence characteristic in the independent variables.

TABLE V

PEARSON CORRELATION COEFFICIENTS

	GPA	Gender	Age	Pretest
Pretest	0.28195 0.0019	-0.07031 0.4473	0.35366 0.0001	1.00000 0.0000
GPA	1.00000 0.0000	0.09905 0.2839	0.17709 0.0540	0.28195 0.0019
Gender	0.09905 0.2839	1.00000 0.0000	-0.13736 0.1363	-0.07031 0.4473
Age	0.17709 0.0540	-0.13736 0.1363	1.00000 0.0000	0.35366 0.0001

To determine which of the correlated variables to eliminate, the researcher conducted an R-Square test on the model to indicate how much each variable or group of variables contributes to explaining the model. Table VI contains the complete results of the R-Square test. The total model R^2 calculated in this test is 0.340106. For social science research this indicates good reliability. The test results indicate that the strongest predictor of the posttest is the pretest with an R^2 of 0.273564. The strongest combination of two predictors is the pretest and the group with an R^2 of 0.319923. The age and gender add little to the model strength. Since the pretest and the GPA are correlated and the GPA adds little to the model in comparison to the pretest, the GPA should be deleted from the model.

TABLE VI

RESULTS OF R-SQUARE TEST

Number in Model	R Square	Variables in Model
1	0.273564	Pretest
1	0.072330	GPA
1	0.045156	Age
1	0.008056	Gender
1	0.000162	Group
2	0.319923	Group Pretest
2	0.289594	GPA Pretest
2	0.276385	Gender Pretest
2	0.274430	Age Pretest
2	0.100395	GPA Age
2	0.086011	GPA Gender
2	0.072581	Group GPA
2	0.048898	Age Gender
2	0.046086	Group Age
2	0.008213	Group Gender
3	0.335501	Group GPA Pretest
3	0.322131	Group Gender Pretest
3	0.321873	Group Age Pretest
3	0.294407	GPA Gender Pretest
3	0.289940	GPA Age Pretest
3	0.276923	Age Gender Pretest
3	0.108790	GPA Age Gender
3	0.102672	Group GPA Age
3	0.086312	Group GPA Gender
3	0.049731	Group Age Gender
4	0.339474	Group GPA Gender Pretest
4	0.336619	Group GPA Age Pretest
4	0.323628	Group Age Gender Pretest
4	0.294496	GPA Age Gender Pretest
4	0.110922	Group GPA Age Gender
5	0.340106	Group GPA Age Gender Pretest

The GLM type of SAS ANOVA program was employed for the full model and produced the results in Table VII. The statistical conclusion is to reject Ho_2. With a P Value of 0.0001, we can conclude with 99.99 percent confidence that at least one of the group's mean is significantly different from the other two groups' means. The only significant variables in the model are the pretest, with a P Value

TABLE VII

ANOVA TABLE FOR PRETEST - POSTTEST

Dependent Variable: Posttest

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	6	498.71826	83.11971	10.38	0.0001
Error	112	896.45821	8.00409		
Total	118	1395.17647			

R-Square 0.357459 Posttest Mean 10.6471

Source	DF	Type I SS	Mean Square	F Value	Pr > F
Group	2	57.47117	28.73558	3.59	0.0308
Pretest	1	404.74967	404.74967	50.57	0.0001
Age	1	4.52696	4.52696	.57	0.4536
Gender	1	2.68158	2.68158	.34	0.5639
GPA	1	29.28888	2.28888	3.36	0.0583

of 0.0001, and the group, with a P Value of 0.0308. This is expected from the results of the correlation coefficient matrix and the R-Square test.

To test the corollary Ho_{2a}, the model was reduced to:

Posttest = pretest + group.

Both variables are independent and significant. The test hypothesis is:

Ho_{2a}: $\mu_1 = \mu_2 = \mu_3$

Ha_{2a}: $\mu_3 > \mu_1$ and μ_2 where

μ_1 = the mean of the posttest scores for the Auditing group

μ_2 = the mean of the posttest scores for Intermediate group

μ_3 = the mean of the posttest scores for the Theory group.

Corollary Ha_{2a} proposes that the Theory group's Posttest mean is significantly larger that the Intermediate group's Posttest mean or the Auditing group's Posttest mean. To test this corollary, the researcher employed three tests of means to determine if the Theory group's Posttest mean was significantly larger than the other two. The tests of means performed on SAS were the Tukey, Scheffe, and Waller-Duncan tests. Table VIII contains the results of the three tests. Each test scores the comparison of the three group means with the same result. All three tests indicate that groups 3 and 1 are not significantly different, groups 1 and 2 are not significantly different, but groups 3 and 2 are significantly different.

TABLE VIII

MEANS TESTS OF THE MODEL

Test	Grouping	Mean	N	Group
Waller-Duncan	A	12.6250	8	3
	B A	11.0667	45	1
	B	10.1212	66	2
Tukey	A	12.6250	8	3
	B A	11.0667	45	1
	B	10.1212	66	2
Scheffe	A	12.6250	8	3
	B A	11.0667	45	1
	B	10.1212	66	2

Therefore, the Theory group scored significantly different from the Intermediate group on the posttest, but did not score significantly different from the Auditing group.

Likewise, the Auditing group did not score significantly different from the Theory or Intermediate groups. Since the Theory group scored significantly different on the posttest from the Intermediate group and the Theory group score was higher, the Theory group scored significantly higher than the Intermediate group on the posttest.

Results of the Knowledge and Comprehension Questions

The researcher identified nine of the questions from the instrument as questions which measure knowledge and comprehension of accounting theory constructs. The mean scores of the three groups on the knowledge and comprehension questions are presented in Table IX.

TABLE IX

MEANS OF PRETEST AND POSTTEST KNOWLEDGE AND COMPREHENSION QUESTIONS

Group	Pretest Mean Score	Posttest Mean Score	Net Change
Theory	3.2500	4.8750	1.6250
Intermediate	3.7878	4.1212	0.3334
Auditing	4.4667	4.6000	0.1333

Hypothesis 3 seeks to determine if the posttest scores of the Theory group on the knowledge and comprehension questions are significantly different from the Intermediate and Auditing groups. For Hypothesis 3, the test hypothesis is:

Ho_3: $\mu_1 \neq \mu_2 \neq \mu_3$

Ha_3: $\mu_1 = \mu_2 = \mu_3$ where

μ_1 = the mean of the posttest scores on questions testing knowledge and comprehension for the Auditing group

μ_2 = the mean of the posttest scores on questions testing knowledge and comprehension for the Intermediate Group

μ_3 = the mean of the posttest scores on questions testing knowledge and comprehension for the Theory Group.

An analysis of covariance uses the model equation:

KC Posttest = group + KC pretest + age + gender + GPA.

The model assumes that all of the independent variables are in fact independent. In order to determine if the variables are in fact independent, the researcher conducted a Pearson Product Moment Correlation Coefficient test on the KC Posttest model to test the KC pretest, age, gender, and GPA to determine to what extent, if any, they are correlated. The results were virtually identical to those for the Posttest model because the KC Posttest data is a subset of the Posttest model data. The age and GPA are correlated to the KC pretest at the $\alpha = .05$ level. Therefore, age, GPA, and KC pretest are not independent variables. An R-Square test indicates that most of the model is explained by the KC pretest and the GPA. Since the KC pretest is correlated to the age and GPA, and neither age nor GPA add as much to the model as KC pretest, both age and GPA should be eliminated from the model.

The GLM program was conducted on the full KC Posttest model and the results are presented in Table X. The

statistical conclusion is to reject Ho_3 because the group is not significant at the $\alpha = .05$ level. Therefore, the mean scores of the three groups are not significantly different and the Theory group did not score significantly higher on the knowledge and comprehension questions than the Intermediate or Auditing groups. As would be expected from the correlation analysis and the R-Square test, the only significant variables in the KC Posttest model are the KC pretest and the GPA.

There is no need to test the corollary Ho_{3a} because there is no significance difference in the means of the three groups.

TABLE X

ANOVA TABLE FOR PRETEST - POSTTEST FOR KNOWLEDGE AND COMPREHENSION QUESTIONS

Dependent Variable: KC Posttest

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	6	101.16304	16.86051	6.42	0.0001
Error	112	294.01343	2.62512		
Total	118	395.17647			

R-Square 0.255995 KC Posttest Mean 4.35294

Source	DF	Type I SS	Mean Square	F Value	Pr > F
KC Pretest	1	72.75261	72.75261	27.71	0.0001
Group	2	7.31198	3.65599	1.39	0.2527
GPA	1	14.71119	14.71119	5.60	0.0196
Age	1	5.86066	5.86066	2.23	0.1379
Gender	1	.052660	0.52660	0.20	0.6551

Results of the Application, Analysis, Synthesis, and Evaluation Questions

The researcher identified 16 of the questions from the test instrument as questions which measure application, analysis, synthesis, and evaluation of accounting theory constructs. The mean scores of the three groups on the application, analysis, synthesis, and evaluation questions are presented in Table XI.

TABLE XI

MEANS OF PRETEST AND POSTTEST APPLICATION, ANALYSIS, SYNTHESIS, AND EVALUATION QUESTIONS

Group	Pretest Mean Score	Posttest Mean Score	Net Change
Theory	4.5000	7.7500	3.2500
Intermediate	4.2727	6.0000	1.7273
Auditing	6.5333	6.4666	-0.0667

Hypothesis 4 seeks to determine if the posttest scores of the Theory group on the application, analysis, synthesis, and evaluation questions are significantly different than the Intermediate and Auditing groups. For Hypothesis 4, the test hypothesis is:

Ho_4: $\mu_1 = \mu_2 = \mu_3$

Ha_4: $\mu_1 \neq \mu_2 \neq \mu_3$ where

μ_1 = the mean of the posttest scores on questions testing application, analysis, synthesis, and evaluation for the Auditing group

μ_2 = the mean of the posttest scores on questions testing application, analysis, synthesis, and evaluation for the Intermediate Group

μ_3 = the mean of the posttest scores on questions testing application, analysis, synthesis, and evaluation for the Theory Group.

An analysis of covariance uses the model equation:

AASE Posttest = group + AASE pretest + age + gender + GPA.

The model assumes that all of the independent variables are in fact independent. In order to determine if the variables are in fact independent, the researcher conducted a Pearson Product Moment Correlation Coefficient test on the AASE Posttest model to test the AASE pretest, age, gender, and GPA to determine to what extent, if any, they are correlated. The results were virtually identical to those for the Posttest model since the data used in this model is a subset of the Posttest model. The age and GPA are correlated to the AASE pretest at the $\alpha = .05$ level. Therefore, age, GPA, and AASE pretest are not independent variables. An R-Square test indicates that most of the model is explained by the AASE pretest and the group. Since the AASE pretest is correlated to the age and GPA, and neither age nor GPA add as much to the model as AASE pretest, both age and GPA should be eliminated from the model.

The GLM program was conducted on the full AASE Posttest model and the results are presented in Table XII. The statistical conclusion is to reject Ho_4. With a P Value of 0.0001, we can conclude with 99.99 percent confidence that at least one of the means is significantly different from

TABLE XII

ANOVA TABLE FOR PRETEST - POSTTEST FOR APPLICATION, ANALYSIS, SYNTHESIS AND EVALUATION QUESTIONS

Dependent Variable: AASE Posttest

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	6	153.94313	25.65719	6.35	0.0001
Error	112	452.76275	4.04252		
Total	118	606.70588			

R-Square 0.253736 AASE Posttest Mean 6.29412

Source	DF	Type I SS	Mean Square	F Value	Pr > F
AASE Pret.	1	101.51093	101.51093	25.11	0.0001
Group	2	32.69292	16.34646	4.04	0.0202
GPA	1	7.33435	7.33435	1.81	0.1807
Age	1	0.40103	0.40103	0.10	0.7534
Gender	1	12.00390	12.00390	2.97	0.0876

the other two. The only significant variables in the model are the AASE pretest and the group. This is expected from the results of the correlation coefficient analysis and the R-Square test.

To test corollary Ho_{4a}, the model was reduced to:

AASE Posttest = AASE pretest + group.

Both variables are independent and significant. The test hypothesis is:

Ho_{4a}: $\mu_1 = \mu_2 = \mu_3$

Ha_{4a}: $\mu_3 > \mu_1$ and μ_2 where

μ_1 = the mean of the posttest scores on questions testing application, analysis, synthesis, and evaluation for the Auditing group

μ_2 = the mean of the posttest scores on questions testing application, analysis, synthesis, and evaluation for the Intermediate Group

μ_3 = the mean of the posttest scores on questions testing application, analysis, synthesis, and evaluation for the Theory Group.

Corollary Ha_{4a} proposes that the Theory group's AASE Posttest mean is significantly larger than the Intermediate group's AASE Posttest mean or the Auditing group's AASE Posttest mean. To test this corollary, the researcher employed three tests of means to determine if the Theory group's mean was significantly larger than the other two. The tests of means performed on SAS were the Tukey, Scheffe, and Waller-Duncan tests. Table XIII contains the results of the three tests. Each test scores the comparison of the three group means with the same result. All three tests indicate that groups 3 and 1 are not significantly different, groups 1 and 2 are not significantly different, but groups 3 and 2 are significantly different.

TABLE XIII

MEANS TESTS OF THE AASE POSTTEST MODEL

Test	Grouping	Mean	N	Group
Waller-Duncan	A	7.7500	8	3
	B A	6.4667	45	1
	B	6.0000	66	2
Tukey	A	7.7500	8	3
	B A	6.4667	45	1
	B	6.0000	66	2
Scheffe	A	7.7500	8	3
	B A	6.4667	45	1
	B	6.0000	66	2

Therefore, the Theory group scored significantly different on the AASE Posttest from the Intermediate group, but did not score significantly different from the Auditing group. Likewise, the Auditing group did not score significantly different from the Theory or Intermediate groups. Since the Theory group scored significantly different on the AASE Posttest than the Intermediate group and the Theory group score was higher, the Theory group scored significantly higher than the Intermediate group on the AASE Posttest.

Summary of the Pretest and Posttest

Analysis of the pretest and posttest indicate that the Theory group scored significantly higher on the Posttest than the Intermediate group, but not significantly different from the Auditing group. The analysis of pretest and posttest knowledge and comprehension questions indicate that none of the groups scored significantly different from one another on the KC Posttest questions. Analysis of the pretest and posttest application, analysis, synthesis, and evaluation questions indicate that the Theory group scored significantly higher on the AASE Posttest questions than the Intermediate group, but not significantly different from the Auditing group.

Results of the Teacher Evaluation Questionnaires

Each semester students at the researcher's institution evaluate their instructors on 12 scaled questions and 3

open-ended comments contained in the Teacher Evaluation Questionnaire in Appendix E. A student volunteer administered the questionnaire and gave the completed forms to the Dean of the College of Business Administration. The instructor received a summary report and the questionnaires in March, 1994. Seven of the eight students in the Theory group completed the questionnaire and the results of the 12 scaled questions are presented in Table XIV. The scale is excellent (4), good (3), average (2), poor (1), and very poor (0).

The results of the Theory group's evaluations are lower than normally experienced by the instructor. The highest means were in instructor preparation, instructor availability, and instructor attitude toward students. The lowest means were in amount of assigned work and the pace of the course. Because of the design of questionnaire, the

TABLE XIV

TEACHER EVALUATION QUESTIONNAIRE RESULTS

	Question	Mean Score
1.	Instructor effectiveness	3.1429
2.	Instructor attitude toward students	3.4286
3.	Instructor preparation	3.5714
4.	Instructor clarity of presentation	3.2857
5.	Instructor manner of delivery	3.0000
6.	Explanation of course requirements	3.2857
7.	Pace of the course	2.8571
8.	Amount of assigned work	2.2857
9.	Relationship of exams to material emphasized in course	3.2857
10.	Grading techniques	3.2857
11.	Instructor availability	3.5000
12.	Would you recommend course to others	3.2857

meaning of the latter two scores is ambiguous at best. Included in Table XV is a comparison of the mean scores for this course, the average of the instructor's past four annual evaluation means, and the average scores for four prior evaluations for courses taught the first time.

TABLE XV

COMPARISON OF TEACHER EVALUATIONS

Question	Current Mean Score	Average of 4 Prior Means	Average of 4 First-Time Means
1	3.14	3.53	3.10
2	3.43	3.73	3.63
3	3.57	3.68	3.40
4	3.26	3.40	3.18
5	3.00	3.48	3.25
6	3.29	3.55	3.40
7	2.86	3.00	2.78
8	2.29	2.90	2.60
9	3.29	3.40	3.18
10	3.29	3.40	3.25
11	3.50	3.33	3.23
12	3.29	3.58	3.35

The instructor usually experiences a lower rating the first time that a course is taught as can be seen by comparing the data in Table XV. The means for this course are very similar to the means of courses during the first semester they are taught.

All of the students responded to the open-ended comments at the request of the instructor. Student responses were:

Comment 1 - What aspects of the teaching or content of the course do you feel were especially good? Four students cited the class discussions and the oral reports. Two

students cited the library research. Individual students also mentioned writing about the topics, cases and problems, accounting history, emphasis on the conceptual framework, and the enthusiasm of the teacher about the subject.

Comment 2 - What changes could be made to improve the teaching or content of the course? All of the students asked to change the format of the assignments from two research articles per week to a balance of one research article and one case problem. Individual students wanted a requirement for the term papers to be handed in before mid-term and more help with preparation for the CPA exam in theory.

Comment 3 - Use the space for additional comments or special questions. Only four students commented in this section of the questionnaire. Two students felt that the course should be a required course for accounting majors. One student wanted the course divided into two courses to be covered more fully. One student simply enjoyed the course.

Results of the Student Interviews

A graduate accounting student asked the students in the Theory group a series of questions found in Appendix E during finals week in December, 1993. The researcher told the group that they would be interviewed but gave them no idea of the type of questions they would be asked. The researcher told them that she would not see or hear their responses until after their semester grades were posted and

asked them to be completely honest in their responses so that any research conclusions would be based on true responses. The graduate assistant tape recorded their answers and the researcher's secretary transcribed them. The students' responses are summarized by question.

Question 1 - Do you believe this course was different from regular accounting courses? If so, could you elaborate? All of the students responded "Yes." Most of the students indicated that the theoretical approach without numbers was the difference from the ordinary accounting courses. Student #4 said, "It was more in depth and you learned more about accounting itself instead of just how to do problems. You learned more about the issue and why you have the problems that you do." Student #8 replied, "Yes, it's very analytical and makes you think a lot."

Question 2 - Did the differences cause you to view the study and practice of accounting from a different perspective? Six students responded "Yes" and two students responded "No" and "Not really." Four students indicated that they learned the "why" instead of just "how." Student #2 replied, "In other classes you didn't care why you did it that, you just did it. But in this class, you learned why you did it and it's a lot easier now that you know where it's coming from." Student #3 responded, "Yes, I think before I just looked at it as accountants as business people. From this class, you look at all the different ones; academics that wrote about accounting and different

[types of] professionals."

Question 3 - Do you believe that you know more about the accounting profession than your peers in your current accounting classes? If so, in what way? Five students responded "Yes", two "Definitely," and one "Don't know." The students cited increased knowledge about the conceptual framework, professional organizations, literature and the library, current value accounting, and how to talk more like a professional. Student #1 said, "It gives you a better understanding of the theories and concepts, where everything goes. Students [peers] know where to put it, but they don't know why it goes there."

Question 4 - How do you compare your level of conceptual knowledge of accounting to your peers in you current accounting classes? One student answered "Equal," two answered "Slightly better," one answered "Better," three answered "A lot better," and one could not judge. Student #3 responded, "I think I have a better foundation, like the conceptual framework. In Intermediate I we went over it, but in this class we really emphasized it and also accounting history. I learned a lot more that my peers don't know about it." Student #4 said, "They don't know anything about the fine work. If you say materiality, they don't know what that is. . . ."

Question 5 - Do you think that any differences in your conceptual knowledge gained from this class will help you in later accounting classes? If so, how do you think it will

help? All of the students responded "Yes," to the first question. Four students answered the second part with a reference to knowing the "why" about what they were doing. Two students mentioned their understanding of the conceptual framework. One student felt confident that he or she could research any problems and one students did not know how it would help in the future, only that it would. Student #5 said, "Yes, because you've got to know the why before you know the how, before you can do it." Student # 8 replied, "Yes, I believe it will because I can look at a problem and figure out where it's coming from and go back to the framework and figure it out."

Question 6 - Would you recommend this course to others? Why or why not? All eight students responded "Yes" but two students added "with changes". Three cited the reason as better understanding of the theories and concepts, two said it helped with their other accounting classes, two said that students needed to be prepared to do a lot of work, and one said the course needed changes. Student #2 replied,

> Yes, with some changes because it was so time consuming. If you are taking a full load and you work, this class is really, really hard for an elective class because of all the library assignments and the paper. As compared with the other accounting classes, this one is really hard.

Student #7 responded, "Yes I would. I know it helped me to understand and apply the things that we are learning in Intermediate Accounting I and helped me in that class." Student #4 said, "Because you learn more in this class than you do in all of your problems. Because you not only learn

how to do it but why you do it this way; instead of just methodology, you learn concepts."

Question 7 - Where would you include this class in the curriculum? Do you think it should be with Intermediate I, Intermediate II, during the senior year, or at the principles level? Five students responded "with Intermediate I," one responded "with Intermediate II," one wanted it divided into two courses taught with Intermediate I and II, and one wanted it integrated with other courses. Student #1 replied, "In my opinion, it should be broken down into two courses, one with Intermediate I and one with Intermediate II." Student #2 responded, "I think right where it is with Intermediate I. It could almost be a requirement because I think it is going to help a lot in the future. With the work load it should be a requirement, because it is too much for an elective." Student #3 said, ". . . it coincides with Intermediate I." while Student #6 said "Intermediate II. A lot of the stuff we were doing was hard for me to grasp and some of it was over my head."

Question 8 - Did you gain anything from reading the professional journals, such as better background, power reading skills, less fear of reading journals for information, more relevant knowledge, or so on? Five student replied "Yes," one "No", one "A little bit," and one did not understand the journal articles very well. Student #1 replied, "Yes, it helps somewhat in all of these." Student #5 responded, "Most of the journals I didn't even

understand." Student # 6 replied, "They were interesting and I gained more like trivia knowledge from reading them." Student #7 said, "I don't believe I did. To me it was hard to understand and hard to read."

Question 9 - Do you think you have better reading skills now? Two replied "Yes," two "No," one "Guess so," one "Yes, on occasion," one "Yes, for accounting," and one "Maybe, a little." Student #4 responded, "I don't know about that, but I understand more about where accounting has come from and where it is going." Student #6 said, "In accounting, yes, but not over all. I can read an accounting article now and understand what it's saying."

Question 10 - Do you think you would go use the journals more often? Do you think you have more current knowledge because of the journals? Seven of the students responded "yes" to the first part of the question and one responded "I guess so." Two of the seven stated that it was a lot easier after having this course. Seven of the students answered the second part, six affirmatively and one "somewhat." Student #3 responded,

> Yes, I know how to research a lot better as an accountant. I would never have guessed that there was so much information on accounting, like using the CD Rom and different things. That helped a lot. I think it would be useful for the graduate courses because we have to do our thesis for the masters.

To the current knowledge part of the question, Student #4 replied, "Yes, you learn how to reason out things. You can find out more about why they decided to do it that way."

Student #6 replied, "Yes, current value. I know more about that now."

Question 11 - Do you believe you can now use the models to analyze situations to solve problems, such as flow charts, external environment model, or the cultural ecology model? Four students replied "Yes," one "Sometimes," one "Think so," one can but not sure where, and one did not really understand how to use them. Student #4 responded, "Some of that I learned in management and marketing, but it reemphasized it in accounting knowledge." Student #5 replied, "They would help me if I could do them better. We only had one class period of them and I really didn't understand how to do them." Student #6 stated, "I can use it but I just [don't] know where yet."

Question 12 - As a result of this course, are you less fearful and more comfortable with speaking up in a class discussion? Five students replied "Yes," two "No," and one the "Same." Student #3 responded, "Yes, it's a lot easier now. It's basically a discussion course and at first I was terrified. But now it's like, no problem. Everybody is friends and they like to look to each other if we have comments about something." Student #4 replied, "Yes, I felt like I did contribute to a lot of the discussions." Student #6 said, "No, I never had any fear."

Question 13 - How about writing assignments? Term papers? Essay exams? Problems without definitive answers? For writing assignments six students answered affirmatively

and two indicated that it had not been a problem before. Student #3 replied, "I still don't like them but they are easier now." Student #4 stated, "No, I really wasn't fearful of writing assignments."

Six students felt that they were more comfortable with the term papers, one did not, and one answer was unintelligible. Student #2 said, "I still hate term papers but I am less fearful of them. I'm more comfortable with doing one. This is probably the hardest one I've ever had to write." Student #4 stated, "I'm fine with them. I think it's more interesting if we do an accounting term paper because you learn more about the issues." Student #8 responded, "Yes, I don't like to do them but when they're required, I do them."

Three students answered "Yes," about essay exams. One student answered "No," one had never had an essay exam before, one thought "They're great," and one had no answer. Student #2 responded, "No, I'm still fearful of essay exams but that's because I don't like to write essays." Student #6 stated, "I don't have anything to compare it to because I've never had an essay exam before. I guess it helped."

All but one student agreed that the course made them more comfortable with problems without definitive answers. Student #4 replied:

> I tend to like black or white issues so I like it one way or the other. You learn a lot of things in your other classes but here you learn this could change. This may be why it's done this way, but it's not necessarily in agreement with all the framework, so it could change.

Student #3 responded, "Yes, because of the conceptual framework." Student #8 said, "I like those a lot better. I like trying to think and come up with a theory."

Question 14 - Do you perceive any changes in your analytical skills due to this course and if so, how? All eight students responded affirmatively. Student #2 answered, "Yes, before I would just get the numbers and if I couldn't solve it, it was just, oh well. But now I try to figure out the numbers and I feel like I have a better knowledge base." Student #3 responded, "Yes, I think that I am better at analyzing different things because this course emphasizes models, such as conceptual framework and that helped a lot." Student #4 said, "Yes, I can analyze situations that may occur like in your case problems. You could analyze them because of the framework that you know." Student #5 replied, "Yes, because you have to figure out why you're doing it before you can do them." Student #6 said, "Yes, in the steps and how I go about analyzing something." Student #7 stated, "As far as accounting there's a difference, but just because of the things we learned specifically about accounting."

Question 15 - How do you compare how much time you spent on this class versus Intermediate I? Two students responded the same, five students a lot more than Intermediate I, and one student less than Intermediate I. Student #7 responded, "The time was pretty equal. I could have spent a lot more time on this class studying than I

did. There was a lot more research and I spent more time at the library."

Question 16 - How long does it take you to research an article now compared to the beginning of the course? All the students agreed that it took much less time at the end of the course. Student #2 reported that it took one hour at the beginning and 10 minutes at the end. Student #3 responded, "At the beginning it would probably take me an hour or an hour and 15 minutes and at the end it took only about 15 minutes." Student #4 stated that it took one-and-a-half to two hours in the beginning and a "lot less" at the end. Student #6 said that it took one hour in the beginning and a quarter hour at the end. Student #8 stated, "It probably took me 30 to 45 minutes at the first and then towards the end I could go in and get an article in about 15 minutes depending on the line at the copy machine."

Question 17 - If you could design homework assignments for others, how would you change what we have done this semester? All of the students concurred that they should research one article per week and prepare one case per week instead of researching two articles per week. Student #3 responded:

> Probably I wouldn't have an article due every class period. I'd change it and have an article due every week. Also, talking about a case study or some type of problem to discuss in class. I like the way she did it with the groups and discussing a problem and what we would do and how we would handle it.

Student #4 replied, "I would have more cases to apply the

framework to, more current issues, more questions of what if this happens. Then you go back and say, well does it match this, is it wrong?"

Question 18 - Would you include a term paper? Six students responded yes, one probably and one did not really answer the question. Student #2 responded:

> I don't know, I hated the term paper. I want to say no but I think it helped but it was so hard to get 10 pages out of the topic I had. Mine was mainly definitions and it was hard to get 10 pages. I would say yes, but not as many pages required or a better choice of topics.

Student #5 replied, "I probably would, but I didn't like it." Student #6 said, "Yes, I think everyone struggled to get the term paper the length that she wanted it. I think the term paper was too long for the level that we are at now." Student #7 stated, "I think I could have done better on the term paper if I had turned in a rough draft and had that analyzed and looked at so we knew specifically what to keep for the final draft of the term paper. I wasn't sure what was at stake."

Question 19 - What about accounting cases? All eight students responded "Yes." Student #2 replied, "Yes, those helped a lot." Student #5 stated, "Yes, I like the discussion on those."

Question 20 - How about two articles per week? All eight students agreed on one article per week.

Question 21 - Would you choose a take home-final or an in-class essay exam? Seven students chose the take-home final and one chose the in-class essay exam. Student #4

responded, "I like the take home, you have more time to think about it." Student #8 commented, "I would prefer an in-class essay exam. That's just my personal preference. I would rather do stuff in class. I don't like doing it out of class."

Question 22 - Is there anything else that you would like to add about this course? Three students said "No." Student #1 replied, "The only thing that I would add is that some of the references she wanted for articles, it was hard to know what to look under to find that particular type of article. That was the biggest problem that I had." Student #2 responded:

> I didn't like it at first because it didn't seem like I was getting anything out of it. I almost dropped the course, but now I feel like it really did help me but it takes the whole course, to the very end, before you realize that you really did learn something.

Student #4 stated, "I just really enjoyed it, the discussions, and I enjoyed her because she got excited about the topics." Student # 6 said,

> For me, almost all the way through the class it was too unstructured. I wasn't sure exactly what was expected of me or what I was supposed to do. There was no cut and dry answer for anything that we did, so it kind of got unstructured because I wasn't sure how to put the class together. Other than that, I thought it was pretty good.

Student # 8 replied, "Just that I really appreciated it. I really thought about dropping it in the second week when I found out about the term paper but I'm glad I stuck with it and I really enjoyed it a lot."

Summary of Student Interviews

The students concurred in most of their answers to the interview questions. They believed that the course was different because of its theoretical nature. Most felt that the course gave them a different perspective on the accounting profession. Most felt that they had an edge on their peers in knowledge and analytical skills. Their edge in knowledge was their ability to use the Conceptual Framework of Accounting and the library to do research in accounting topics. Many felt that they learned the "why" of accounting concepts and practices and they would benefit in their future classes.

All of the students would recommend the class to others but some would warn other of the difficult nature of the class and the excessive time requirements. Most felt that the placement was correct with Intermediate Accounting I.

The students found that reading the professional journals was beneficial and some felt that it improved their reading skills. All agreed that they would use the journal in the future. Most of the students felt they benefitted from learning to use models, especially the conceptual framework.

The majority of the students became more comfortable with class discussion and writing skills. They believe that their analytical skills improved and they can look beyond getting right numbers into the why of the situation.

Most of the students spent more time on this class than

their other accounting classes. A lot of this time was spent in the library in the early part of the semester.

Everyone wanted to change the course to only one library assignment per week and one application activity (cases) from their intermediate texts. All would leave in the term paper, although many did not really like doing the paper because they perceived it to be too long. (The requirement was 10 pages.) All but one liked the take-home final, which consisted of a short paper.

Most of the students enjoyed the course on one level or another. One student was stuck in a dualistic stage and was bothered by the unstructured problems posed in class discussions. Several students wished for assignments with more explicit instructions that removed their need to search for information or use their imagination. Several students enjoyed the class debates over issues with no solutions.

CHAPTER V

CONCLUSIONS

Introduction

This study has examined the effect of early theory instruction on undergraduate accounting students' cognitive development and whether the treatment students would score higher on a constructed examination to test higher level cognitive skills in accounting theory than students in two control groups without such instruction. This chapter presents the findings and conclusions of the study about the pretest-posttest, the students' perceptions of the course, a critique of the research methods, the instructor's perceptions of student development, implications for future research, and implications for application.

Findings and Conclusions - Pretest and Posttest

Students in the Theory group scored significantly higher on the posttest than the Intermediate group but not significantly higher than the Auditing group. The results indicate that early teaching of theory gives the Intermediate student a conceptual advantage over their peers. Although the Theory group scored better in absolute terms than the Auditing group, the results were not

significantly different. Can one infer from these results, however, that the seniors have gained no more conceptual advantage from two semesters of additional work than the Theory group accomplished in one semester?

When the test instrument was divided into two groups (questions testing knowledge and comprehension and questions testing application, analysis, synthesis, and evaluation) the results were different. Students in the Theory group scored higher on the posttest for knowledge and comprehension questions than both the Intermediate and Auditing groups, but not significantly higher. The instructional method in the Introduction to Accounting Literature and Theory course did not emphasize knowledge acquisition so this result is expected.

In contrast, the instructional method of the Theory course did emphasize the application, analysis, synthesis and evaluation skills in accounting theory. On the questions that measure these skills, the Theory group scored significantly higher than the Intermediate group but not significantly higher than the Auditing group. The Theory group scores were absolutely higher than the Auditing group, however. Again, this emphasizes that an early course in accounting theory with instructional methods that focus on higher cognitive skills can give students an advantage over their peers.

To answer the basic research question, students who completed an Introductory Accounting Theory course as first

semester juniors were more successful in a constructed test requiring higher cognitive skills than junior students who complete only the traditional material included in the first Intermediate Accounting course. Students who completed an Introductory Accounting Theory course as first semester juniors were not more successful in a constructed test requiring higher cognitive skills than senior students who completed the first Auditing course and both semesters of traditional Intermediate Accounting.

Findings and Conclusions - Teacher Evaluation Questionnaires and Student Interviews

The Theory group evaluated the teacher's performance at about the same rating level as the teacher normally receives in a new course indicating that the instructor's performance was not unusual. Students felt that the class discussions, the library research, writing, and emphasis on the conceptual framework were the best parts of the course. The students also wanted to reduce the amount of library assignments to one per week and include a case study for the other assignment.

The students' comments on the Teacher Evaluation Questionnaires were consistent with their comments in the interviews. Students found the course different, challenging, somewhat frustrating, and enjoyable enough to recommend to others. Frustrations arose from the time necessary in the beginning of the course to complete their library assignments and the difficulty of the course. As

the learning curve progressed, the time required to research their articles declined. At least one student was amazed at the quantity of accounting literature available in the library and the level of technical sophistication of the library.

Students became more comfortable with class discussions and writing every class period. Several students indicated that they did not like writing, essay tests, and term papers and yet indicated that they would leave all of those elements in the course. All but one indicated that they liked the take-home final which amounted to a short paper. They recognized a change in their analytical skills and indicated a desire to know the "why" of accounting practice that their peers seldom questioned.

Critique and Analysis of Research Methods

The design of the test instrument may have been biased by the researcher being the developer and instructor of the course. The researcher tried to avoid this bias in two ways. First, 44 percent of the questions were taken from the test bank of the textbook that is used by 73 percent of American schools for Intermediate Accounting. Second, the test instrument design preceded the instructor and student performances during the course, and therefore was not biased by such performances.

Individual questions in the test instrument were discriminating questions; the questions required precise

knowledge, application, analysis, synthesis, or evaluation to select the correct response. With such a difficult test, the likelihood of scoring well without sufficient skills declines.

The problem with such a difficult test is that students may have given up at some point in the examination. Easy questions were interspersed in the test to give students the encouragement to continue. Indeed, the most correctly answered questions on the pretest (in order from the highest) were questions number 22, 25, 21, 4, 9, 13, 10, 1, and 11. The most correctly answered questions on the posttest (in order from the highest) were 21, 22, 25, 9, 4, 1, 13, 11, and 3. This implies that the students did not give up and in fact persisted to the end of the test.

The size of the treatment group and the disparity between the respective sizes of the three groups were not ideal for the statistical tests performed on the data even though all of the statistical tests allowed for such diversity in sample sizes by using the general linear model (GLM). The generalizability of the results suffers because the small size of the Theory group and causes doubt as to the replicability of the experiment except in such situations that closely approximate the research conditions. Those research conditions include such factors as the instructor, the type of university, the size of the university, and the average size of classroom population.

Qualitative data collection in the Teacher Evaluation

Questionnaire was unbiased because its design, method of implementation, and control over the instruments were controlled by the university and the students. Students could have biased the results, but there was no reward structure to induce such behavior since the results were kept from the researcher until after the marking period. The reliability and internal consistency of the instrument cannot be verified by the researcher. The instrument has been used consistently by the university for at least the past seven years.

An accounting graduate assistant, who was not connected with the Theory students or the course, conducted the student interviews. The researcher did prepare the questions but instructed the graduate student to allow the students to speak freely and depart from the question format at will. The students had no reason to bias their answers because there was no reward structure for such behavior.

The researcher believes that this study, despite lack of generalizability, can contribute to the body of research concerning changing the instructional methodology for accounting.

Instructor's Impressions of Student Performance

The semester began with a group of average students who were unwilling to participate in class discussions and totally unsure of what the semester would bring. They knew the course was different, but were overwhelmed by the amount

of reading they were asked to do. The students found it very unsettling to be asked to read articles and not be required to memorize their contents. They assumed that if they did not have to regurgitate the reading material on an exam, they were not learning anything. The students also seemed afraid to express an opinion in writing or in class discussions in the beginning. It was as if they had never before been asked their opinion in an accounting classroom.

As the semester progressed, the students were still reluctant to express opinions in their microthemes. They began to form opinions in class discussions and debate with one another or with the instructor. The class debates began to get livelier as the course progressed. Several issues intrigued the students, especially current value accounting, going concern, and the social implications of accounting decisions. Although several students wanted concrete answers to everything, the best class periods were spent exploring all the sides to an issue without an answer.

During the semester the instructor began to recognize each student's development in terms of Perry's model. Several students were still in the dualistic stage, but most were in the relativism stage sometime retreating into multiplicity and dualism. For some students it was difficult to be relativistic and study accounting because they assumed that accounting was very "black and white." Some students chose accounting for that very reason. One student commented in the interview, "I got into accounting

for the bookkeeping part and it's not like that at all." The bookkeeping (at lower levels) is very structured and within systems can be very rigid so it is very safe for dualistic students.

What was most interesting, and to some degree upsetting, was that students were afraid to use their imaginations. It appeared that their imaginations had not been encouraged or had been stifled, at least in their accounting classes. After the classes on theory development and paradigms, they began to feel freer to think for themselves. Some of the students became adventuresome and creative in their thinking after that point. That is when the great debates began to happen.

The students grew in at least five areas. First, they gained an enriched understanding of the accounting profession. By learning the history of accounting development and reading the professional journals, students gained an historical perspective into the discipline and improved their accounting vocabularies. The professional level of the class discussions improved because we analyzed real-world situations as accountants, related the situations to the historical development of accounting and current practice trends, and discussed the possibilities for future development. This helped students to gain a better understanding of the changing role of accountants in a rapidly-changing global business arena. When asked in the interviews, all but one student perceived that they knew

more about their profession. Even the student who responded negatively, indicated that the profession was different than he or she originally thought. These changes indicated a developing inculturation into the profession that I do not find often with students in the traditional courses.

Second, writing became less of a chore and more of a proficiency. The number of grammar corrections to their microthemes and students' complaints about the length of time required to write the microthemes decreased substantially during the semester. They demonstrated more willingness and ability to analyze and evaluate others' work in their microthemes by the end of the semester. Some even enjoyed the process of preparing a term paper in accounting.

Third, they began to have spontaneous philosophical debates in class discussions, frequently citing the conceptual framework and using the framework to argue both sides of an issue. In these debates, they would use correctly the theory contained in the conceptual framework in unfamiliar situations. This indicated a freedom in intellectual thought and use of higher cognitive skills.

Fourth, they became aware of thorny accounting issues and began to form their own opinions and be less fearful of unanswered questions. For example, we discussed issues such as the liability for frequent flier miles in the airline industry, current value accounting, and determinations of going concern that they do not find in their textbooks. The debates over how to follow accounting theory and maintain

the integrity of the financial statements, without causing undue social burdens on various stakeholders, made students aware of the complexity of the situations and the difficulty the FASB has in achieving consensus answers to these current accounting dilemmas. This led most of the students to view accounting as a dynamic profession that changes to meet the challenges of a changing society.

Fifth, they began to analyze accounting situations with competent skills. The skill level varied by student, but many found "Why?" was a question they liked to ask and were not afraid to answer. By the end of the semester, they could also leave a discussion with no resolution, and not feel disappointment that "the definitive answer" did not exist. They demanded fewer answers from the instructor and one student in particular enjoyed trying to find offbeat solutions to problems. These students became more willing to think creatively within the conceptual framework instead of looking for rules in their textbooks, because they knew that the answers to these problems did not exist yet.

Implications for Future Research

Considering the results of the students' posttest scores, student interviews, and the perceptions of the instructor, it is apparent that this teaching methodology holds promise to increase the students' higher cognitive skills in their chosen field. Future research can confirm the results of this study in several ways. First, future

research should use larger samples of students so that the size of the treatment group and the control groups are approximately the same. Second, if the course is a required course instead of elective, the selection bias will diminish. Three, a longitudinal study to track the treatment students into each semester and post-graduation, would provide further data to assess the effect of the treatment on the students' cognitive development. Fourth, with several replications, including different instructors possibly in different institutions, the results might achieve generalizability.

Implications for Application

Application of the instructional methodology advocated in this study is not without problems. First, it requires adding an additional course to the curriculum that demands a small classroom environment and an instructor with understanding of the work of Bloom and Perry who is willing to depart from traditional accounting teaching methods. A class size of 25 or less is ideal for this methodology. A department chairperson or lead instructor must carefully coordinate the instructors' methodology to achieve any uniformity in results.

Second, the timing of the course is important. The researcher and students concur that placement at the Intermediate Accounting I level is preferable. However, the drop rate in Intermediate I is very high. For the semester

of this study, the drop rate for Intermediate I was approximately 43% compared to a 16% drop rate in Auditing, but the Auditing drops normally take the course at a later date instead of dropping from the program. The high drop rate in Intermediate I represents students who realize they have chosen the wrong major. The drop rate in Intermediate II is about the same or less than Auditing.

This course would require a substantial commitment of faculty effort to include all students in the accounting program. In this institution, it would require about five sections of 25 students if taught concurrently with Intermediate I. This leaves the question open as to whether the early intervention accomplishes enough to warrant the faculty effort at the Intermediate I level. If, however, the course were taught concurrently with Intermediate Accounting II, it would only require three sections. By Intermediate II, most students commit to the major. Using the work of Perry, the students will be more capable of the relativistic thinking by the Intermediate II stage, and possibly more committed to the major. The timing difference is only one semester and still accomplishes the goals of higher cognitive skills before the students enter their senior year courses that require such skills.

Third, the students obviously enjoyed the case studies and experienced success at applying higher cognitive skills in these exercises. It is apparent that the course should be changed to include at least one or two case studies each

week and reduce the number of library assignments accordingly. The course structure can remain the same by requiring half the class to obtain and present articles for each class and the other half to prepare and present cases for class discussion. This brings current literature and case solutions into every class. The students then switch roles each period so that they each prepare one article and one case per week.

Finally, the growth of students' cognitive skills was undeniable to the instructor. For example, one student in the Theory group scored the largest gain of any student in any group. This student scored 3 (1 on KC questions and 2 on AASE questions) on the pretest and 17 (6 on KC questions and 11 on AASE questions) on the posttest. This student approached the instructor sometime after mid-term and related,

> Now I see why I am doing everything in Intermediate I. The rest of my Intermediate class is clueless. I didn't understand why you were making us do all this stuff, but I've figured it out now. I don't mind this class anymore because I can figure out why I am doing what I'm doing. It is worth the extra work.

This student is a traditional student with a 3.18 GPA, far from a superior student in this institution. He may become a superior accounting student.

Accounting department chairpersons should consider the use of some or all of the teaching methodology used in this study to improve accounting education by improving the students' higher cognitive skills in their major field.

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APPENDICES

APPENDIX A

Summary of Bloom's Taxonomy of Educational Objectives

1.00 Knowledge - information retrieval of methods, processes, patterns, structure or setting.

1.10 Knowledge of Specifics - isolated bits or elements of information upon which more complex forms of knowledge are built.

1.11 Knowledge of Terminology - referents for verbal and non-verbal symbols including definitions of technical terms and familiarity with many words and their general meaning.

1.12 Knowledge of Specific Facts - very precise knowledge of specific dates, persons, places, or events or approximate knowledge of cultures, times and magnitude of phenomena.

1.20 Knowledge of Ways and Means of Dealing with Specifics - awareness of the ways of studying, organizing, evaluating and criticizing within a field.

1.21 Knowledge of Conventions - familiarity with accepted ways of treating and presenting phenomena and ideas including forms and

conventions of major types of works and proper patterns of speech and writing.

1.22 Knowledge of Trends and Sequences - recognizing continuity and trends with respect to temporal aspects of processes, directions and movements of phenomena.

1.23 Knowledge of Classifications and Categories - recognizing elements, classes, and divisions for a field, purpose, or problem such as a type of literature.

1.24 Knowledge of Criteria - familiarity with criteria to judge facts, principles, or opinions.

1.25 Knowledge of Methodology - knowledge of the methods of research and inquiry but not the ability to use the method.

1.30 Knowledge of the Universals and Abstractions in a Field - knowledge of the theories and generalizations of a field at the highest level of abstraction and complexity.

1.31 Knowledge of Principles and Generalizations - knowledge of the abstractions of a field that are valuable to explain, predict or determine appropriate action or direction of effort.

1.32 Knowledge of Theories and Structures - knowledge of the body of principles and their relationship with other principles in order

to obtain a clear, systematic view of the field or problem.

2.00 Comprehension - understanding a communication in order to make use of the communication without being able to relate it to other information or seeing its fullest implications.

2.10 Translation - the ability to accurately transfer the intended meaning of a communication from one language or form to another.

2.20 Interpretation - the ability to summarize or explain a communication by reordering, rearranging or providing a new view of the ideas.

2.30 Extrapolation - the ability to make inferences from the conclusions of work and predict the continuation of trends consistent with the original data.

3.00 Application - the ability to use abstractions of ideas, procedures or theories in specific or concrete situations.

4.00 Analysis - the ability to disaggregate a communication into its component parts in such a way that the relationship of the parts to each other and to the whole are explicit. The analysis serves to clarify the communication, its organizational structure, its operation, basis and arrangement.

4.10 Analysis of Elements - the ability to identify the elements of the communication.

4.20 Analyses of Relationships - the ability to comprehend the interrelationships of the elements and verify the consistency of hypotheses with the assumptions and information provided.

4.30 Analysis of Organizational Principles - the ability to recognize the implicit and explicit organization and structure which hold a communication together.

5.00 Synthesis - the ability to combine or arrange elements or parts to form a whole that may constitute a new pattern or structure.

5.10 Production of a Unique Communication - the ability to develop a new communication to express ideas, or convey feelings and experiences to others.

5.20 Production of a Plan or Proposed Set of Operations - the ability to plan or propose plans to satisfy the requirements of a task.

5.30 Derivation of a Set of Abstract Relations - the ability to develop a set of abstract relations or hypotheses to explain or classify data based upon the analysis of the elements involved, and to modify such hypotheses when appropriate based on new data.

6.00 Evaluation - the ability to make qualitative and quantitative judgments about the satisfaction of criteria, to apply standards of appraisal, or make value judgements about methods or materials for given

purposes.

6.10 Judgments in Terms of Internal Evidence - the ability to evaluate the accuracy of a communication from evidence concerning its logic, consistency or other internal criteria.

6.20 Judgments in Terms of External Evidence - the ability to judge a communication in terms of selected criteria such as comparing major theories or judging based on external standards of excellence.

APPENDIX B

Introduction to Accounting Literature and Theory
Course Syllabus

Introduction to Accounting Literature and Theory
Accounting 4913
Katherene P. Terrell

Course Purpose

Accounting is a complex field that encompasses many different types of practice for the professional. No matter what a student's career plans and outcomes are, a certain body of professional literature and academic theories pervades what we call "accounting". To become a professional who is capable of making informed and rational decisions, one must know where to seek knowledge. Furthermore, a professional understands the conceptual framework of accounting in order to be able to analyze and evaluate situations where the literature and rules do not provide the answers, and to formulate defendable positions.

The Introduction to Accounting Literature and Theory course is designed to give the novice accounting student the opportunity to explore the history of the accounting profession, the development of accounting theories and conceptual framework, and the application of accounting theory to practice within the context of historical and current accounting literature. The knowledge and abilities acquired in this course should help students to analyze the material to be learned in the remainder of the accounting curriculum and to understand how each course fits within the conceptual framework.

Course Objectives

This course is designed to:

1. demonstrate the use of the library to obtain accounting literature and distinguish the qualitative authority of different literature sources;
2. trace the development of the accounting profession from the middle ages to the present;
3. trace the development of the conceptual framework of accounting from the 1960s to the completion of

the framework in the 1980s;
4. explain the elements of the conceptual framework and their relationships to current accounting practice through current accounting literature;
5. analyze current accounting practices in terms of the conceptual framework;
6. relate the concepts of going concern and internal control to the conceptual framework;
7. describe the promulgation process for accounting and auditing standards.

Student Objectives

Upon completion of the course successful students should be able to:

1. locate accounting literature in the library and evaluate the authoritative quality of the source;
2. describe the history of accounting from the middle ages to the present;
3. evaluate the different theories of accounting that lead to the Conceptual Framework of accounting;
4. explain the major concepts of the conceptual framework in terms of how they apply to current practice and reasons for current controversies;
5. formulate justifications of accounting practice based on synthesis and interpretation of accounting concepts and theories;
6. explain the concepts of going concern and internal control within the Conceptual Framework;
7. recreate the process of accounting principle and auditing standards promulgation.

Required Texts

American Accounting Association, **Statement on Accounting Theory and Theory Acceptance**. Sarasota, FL: American Accounting Association, 1977.

Financial Accounting Standard Board, **Statement of Financial Accounting Concepts**. Homewood, IL: Irwin, 1992.

McDonald, Daniel L., **Comparative Accounting Theory**. Reading, MA: Addison-Wesley Publishing Company, 1972. (out of print)

Recommended Text

May, Claire, **Effective Writing: A handbook for accountants**. Englewood Cliffs, NJ: Prentice Hall, 1992.

Assignments and Grading

Students are responsible for four activities:
1. reading assignments and class discussions;

2. library research of articles, writing summaries of articles and sharing with class;
3. in class mid-term and take home final exam;
4. term paper preparation and presentation to class.

Attendance in such a small class is imperative. Attendance will be monitored by collection of homework. Late homework will not be accepted. If you are ill or have to be out of town for your job, see to it that I receive the assignment by 5:00 pm of the day of class. No exceptions!

Grades will be assigned based on total points for the course.

Mid-term examination	150 points
Final examination	150 points
Unannounced quizzes	100 points
Term paper and presentation	150 points
Microthemes (15 @ 10 points each)	150 points
Class participation	100 points
Total Points	800

Letter grades will be assigned as follows: 720-800 points A; 640-719 points B; 560-649 points C; 480-559 points D; below 480 points F.

The mid-term examination will be an essay exam taken in class without notes or books. The final exam will be a take-home project.

The term papers will be due throughout the course beginning around the first of October. Students must select an accounting principle and trace it back to the underlying theories. The papers will be presented as they relate to the theme of one class period. Term papers will be a minimum of 10 pages of double spaced text (typewritten). References should use the APA style. Each student will hand in a proposal that outlines their term paper for approval by September 28, 1993.

Microthemes will be **handwritten** and limited to one page. The microtheme will be a summary of the article you find for each class period assigned. You will hand in a photocopy of the article (complete with full reference) attached to your microtheme. At the next class period, I will provide the class with a bibliography of all of the articles turned in to me so that you can build a good bibliography of references. Unless the instructions specify otherwise, the microtheme should be in two parts: 1) a succinct summary of the article and 2) what you found most interesting about the article. The writing may be in pen or erasable pen.

Academic Honesty

This class deals with the **profession** of accounting as well as accounting theory. Accountants are charged with upholding the public trust. It is understood that the highest degree of professionalism will exist in this class. Failure to adhere to the university's academic honesty policy will result in failure in the course. All work should be your own with all sources given written recognition for the use of words or ideas.

Class Schedule and Assignments

August

24 Introductions to the class, discussion of course syllabus and overview of the course.

26 Trip to the library to locate accounting literature and obtain first article.

Readings for August 31: from readings packet: Hendriksen & van Breda; Pacioli Revisited; Brief; Mednick & Previts; Lowe; Bishop & Tonkar; Meinert; and Langenderfer.

Assignment for August 31: Photocopy one article on the history of accounting and write a microtheme. Construct a time line for the history of accounting.

31 History of the Accounting Profession

Readings for September 2: from readings packet: Abramson; Ried, et al.; Edwards & Miranti; and Zeff.

Assignment for September 2: Photocopy one article about the everyday life of an accountant in the past, present or future, or the opportunities (or lack of opportunities) for minorities in accounting. Write a microtheme about what you think it means to be an accountant.

September

2 The Culture of the Accountant

Readings for September 7: MacDonald, Chapters 1 & 2

Assignment for September 7: Photocopy one article (or information from a book reference) about theories and their formation. Write a one page microtheme about how humans use theories or why humans develop theories.

7 Theory formation and approaches to accounting; nature and goals of accounting.

Readings for September 9: MacDonald, Chapters 3 & 4
Assignment for September 9: Photocopy one article about the goals of accounting. Write a one page microtheme that compares this article to what MacDonald writes about goals.

9 Development and validation of theories; normative view of accounting.

Readings for September 14: MacDonald, Chapters 5 & 6.
Assignment for September 14: Photocopy one article on one of the Accounting theorists discussed in chapters 5 and 6 and write a microtheme about how this person influenced the development of accounting theory.

14 Theories **of** and **for** accounting.

Readings for September 16: MacDonald, Chapter 7
Assignment for September 16: Look up one intermediate accounting text book from 1960-1970. Photocopy one chapter. Write a one page microtheme on the major differences between the content of the old chapter and a similar chapter in a current textbook.

16 Comparisons of Theories and summary of MacDonald.

Readings for September 21: Statement of Accounting Theory and Theory Acceptance, Chapters 1, 2 & appendix.
Assignment for September 21: Photocopy an article about one of the accounting theorists discussed is these chapters. Write a one page theme about the theorist and what makes his/her theory unique.

21 Alternative theory approaches and their historical development. Final instructions for term paper proposals.

Readings for September 23: Statement of Accounting Theory and Theory Acceptance, Chapter 3
Assignment for September 23: Draw a chart that traces the lineage of the different schools of accounting thought.

Term paper proposals are due on September 28.

23 Alternative Theory Approaches.

Readings for September 28: Statement of Accounting Theory and Theory Acceptance, Chapters 4 & 5.
Assignment for September 28: Photocopy an article that criticizes the SATTA or a proposed theory. Write a one page theme and state your opinion as to whether the criticism is valid or not. Support your opinion.

Term paper proposals are due on September 28.

28 Difficulties in achieving consensus.

Readings for September 30: SFAC #1, paragraphs 1-31.
Assignment for September 30: Photocopy an article that discusses historical cost or the interests of users of the financial statements. Write a one page microtheme.

30 Financial reporting and historical cost.

Readings for October 5: SFAC #1, paragraphs 32-63.
Assignment for October 5: Photocopy one article that discusses financial statement disclosures or objectives of financial reporting. Write a one page microtheme.

October
5 Objectives of financial reporting.

Readings for October 7: SFAC #2, Paragraphs 1-35.

Assignment for October 7: Photocopy one article that discusses the information value of accounting communications or accountants as information specialists. Write a one page microtheme.

7 Value of Accounting Information in decision making.

Readings for October 12: SFAC #2, Paragraphs 36-97.
Assignment for October 12: Photocopy one article that discusses quality of information, relevance or reliability. Write a one page microtheme about how you believe the public would view accounting professionals without the professional requirement discussed in your article.

12 Hierarchy of accounting qualities, relevance and reliability.

Readings for October 21: SFAC #2, Paragraphs 98-122.
Assignment for October 21: Photocopy one article that discusses neutrality, comparability or consistency. Write a one page microtheme about why this concept is important to an accounting professional.

14 Mid-term examination.

19 Fall break

21 Neutrality, comparability, and consistency.

Readings for October 26: SFAC #2, Paragraphs 123-170.
Assignment for October 26: Photocopy one article that discusses materiality and its measurement and/or decision process. Write a one or two page microtheme that deals with how professional judgment plays a role in materiality.

26 Materiality

Readings for October 28: SFAC #5, Paragraphs 1-29.
Assignment for October 28: Photocopy one article about the purposes, uses, scope or limitations of financial statements. Write a one page microtheme about what one type of user needs from the financial statements.

28 Purposes and uses of financial statements

Readings for November 2: SFAC #5, Paragraphs 30-57.
Assignment for November 2: Photocopy one article on comprehensive earnings. Write a one page microtheme.

November
2 Statements of income, cash flow and equity; comprehensive earnings.

Readings for November 4: SFAC #5, Paragraphs 58-108.
Assignment for November 4: Photocopy one article on matching, measurement or income recognition. Write a one page microtheme about your article that contrasts the subject of your article with recognition on a cash basis.

4 Recognition criteria; measurement; criteria application; matching.

Readings for November 9: SFAC #6, Paragraphs 1-133.
Assignment for November 9: Photocopy one article on one of the elements defined in paragraphs 24-133. Write a one page microtheme and note information that you cannot find in your intermediate book about this element.

9 Elements of the financial statements.

Readings for November 11: SFAC #6, Paragraphs 134-163.
Assignment for November 11: Photocopy one article about the matching principle. Write a one page microtheme.

11 Accrual accounting and related concepts.

Readings for November 16: SFAC #6, Paragraphs 164-211.
Assignment for November 16: Photocopy one article about any issue listed in these paragraphs and write a one page microtheme.

16 Net Assets

Readings for November 18: SFAC #6, Paragraphs 212-220, 232-255.
Assignment for November 18: Photocopy one article about accounting entities or periods. Write a one page microtheme.

18 Equity and comprehensive income; deferrals.

Readings for November 23: SAS # 59
Assignment for November 23: Photocopy one article about the problem of going concern. Write a one page microtheme that illustrates an actual situation.

23 Going concern

25 Thanksgiving break

Readings for November 30: SAS # 55
Assignment for November 30: Photocopy one article about the assessment of internal control, the importance of internal control, or illustrating problems of poor internal control. Write a one page microtheme.

30 Internal control

Readings for December 2: From the readings packet: Cooper & Robinson; Davidson & Anderson; and Davidson.

Sprouse, Robert T. (1988, December). Developing a conceptual framework for financial reporting. Accounting Horizons. pp. 121-127.

Assignment for December 2: Photocopy one other article on the accounting and auditing standards promulgation. Develop a chart of the standard setting bodies in the United States that defines the relationships between the various bodies and other accounting or governmental organizations. List the steps in the promulgation process for FASB.

December

2 The process of standards promulgation.

Assignment for December 7, 1993: Photocopy one article on a current issue that is being debated in the accounting literature or is before the emerging issues committee. Write a two page microtheme about how you believe the issue will be resolved and why that resolution will be reached.

7 The process of standards promulgation.

9 Conclusions. Explanation of final examination.

16 **Final examination due by 5:00 p.m.**

APPENDIX C

TEST INSTRUMENT

Name_____ SS #_____

Select the **BEST** answer from the alternatives given.

1. Which of the following is an implication of the going concern assumption?
   A. The historical cost principle is credible.
   B. Depreciation and amortization policies are justifiable and appropriate.
   C. The current-noncurrent classification of assets and liabilities is justifiable and significant.
   D. All of the above.
   E. None of the above.

2. Valuing assets at their liquidation values rather than their cost is inconsistent with the
   A. periodicity assumption.
   B. historical cost principle.
   C. going concern assumption.
   D. historical cost principle and going concern assumption.
   E. all of the above.

3. Revenue should be recognized
   A. at the end of production.
   B. at the time of cash collection.
   C. when realized or realizable.
   D. when realized or realizable and earned.
   E. none of the above.

4. Which of the following, in the most precise sense, means the process of converting noncash resources and rights into cash or claims to cash?
   A. Recognition.
   B. Measurement.
   C. Realization.
   D. Allocation.

5. The Homesite Corporation sells houses to the public and finances the sales internally. Homesite's CPA has indicated a need for a provision for losses on the balance sheet as a reduction in the asset value. This is an application of
   A. industry practice.
   B. matching principle.
   C. conservatism.
   D. revenue recognition principle.
   E. none of the above.

6. Application of the full disclosure principle
   A. is theoretically desirable but not practical because the costs of complete disclosure exceed the benefits.
   B. is violated when important financial information is buried in the footnotes to the financial statements.
   C. is demonstrated by the use of supplementary information presenting the effects of changing prices.
   D. requires that the financial statements be consistent and comparable.

7. The most important criterion for judging the support value of a reference when researching an accounting dilemma is
   A. authoritativeness.
   B. quantity of sources.
   C. recentness.
   D. all of the above.
   E. none of the above.

8. What accounting concept justifies the usage of accruals and deferrals?
   A. Going concern assumption.
   B. Materiality constraint.
   C. Consistency characteristic.
   D. Monetary unit assumption.
   E. A and C.

9. Charging off the cost of a stapler with an estimated useful life of 20 years as an expense of the period when purchased is an example of the application of the
   A. consistency characteristic.
   B. matching principle.
   C. materiality constraint.
   D. historical cost principle.

10. Preparation of consolidated financial statements is an example of the
    A. economic entity assumption.
    B. relevance characteristic.
    C. comparability characteristic.
    D. neutrality characteristic.
    E. none of the above.

11. Materiality is
    A. situationally specific.
    B. relative to size and importance.
    C. defined by mathematical relationships.
    D. B and C only.
    E. A and B only.

12. Decision makers vary widely in the types of decisions they make, the methods of decision-making they employ, the information they already possess or can obtain from other sources, and their ability to process information. Consequently, for information to be useful there must be a linkage between these users and the decisions they make. This link is
    A. relevance.
    B. reliability.
    C. understandability.
    D. materiality.
    E. none of the above.

13. The overriding criterion by which accounting information can be judged is that of
    A. usefulness for decision making.
    B. freedom from bias.
    C. timeliness.
    D. comparability.
    E. none of the above.

14. Accounting information is considered to be relevant when it:
    A. can be depended on to represent the economic conditions and events that it is intended to represent.
    B. is capable of making a difference in a decision.
    C. is understandable by reasonable informed users of accounting information.
    D. is verifiable and neutral.
    E. A and B.

15. Financial information does not demonstrate consistency when
    A. firms in the same industry use different accounting methods to account for the same type of transaction.
    B. a company changes its estimate of the salvage value of a fixed asset.
    C. a company fails to adjust its financial statements for changes in the value of the measuring unit.
    D. none of the above.
    E. B and C.

16. Trade-offs between the characteristics that make information useful may be necessary or beneficial. Issuance of interim financial statements is an example of a trade-off between
    A. relevance and reliability.
    B. reliability and periodicity.
    C. timeliness and materiality.
    D. understandability and timeliness.
    E. none of the above.

17. The FASB operates on two basic premises when establishing standards: 1) responsiveness to the needs of the entire economic community, and (2) due process. Which of the following is NOT an example of either of these premises?
    A. Assessing the impact on the balance sheets of the major U. S. corporations of full disclosure of unrecorded liabilities for post-retirement health benefits.
    B. Assessing the impact on U. S. medicare/medicaid claims of full disclosure of unrecorded liabilities for post-retirement health benefits.
    C. Assessing the impact on the balance sheet of U. S. Aeronautics, Inc. of full disclosure of unrecorded liabilities for post-retirement health benefits.
    D. Establishing a 15 year phase-in period for inclusion of the post-retirement health benefits liability on balance sheets.
    E. All of the above are examples.

18. Which of the following statements is true?
    A. Accounting information is valuable when it is consistent and comparable, understandable by the users, material, and has a benefit that exceeds its cost.
    B. Accounting information is valuable when it is relevant and reliable, understandable by the users, material, and has a benefit that exceeds its cost.
    C. Accounting information is valuable when it is relevant and reliable, understandable, material, and has a benefit that exceeds its cost.
    D. All of the above are true.
    E. All of the above are false.

19. If FASB approves the transmission of disaggregated accounting information (information in its raw state, such as transactions) to users, which of the following issues should be considered most important?
    A. Understandability of the users, timeliness and comparability.
    B. Understandability of the users, timeliness and materiality.
    C. Materiality, consistency and comparability.
    D. Understandability of the users, decision usefulness and the characteristics of the users.
    E. None of the above.

20. ABC Corporation buys a majority interest in XYZ Corporation at the beginning of 1993. When ABC prepares its annual report with 5 years of information, it will prepare consolidated statements for 1993. In considering how to present the prior four years, what are the primary theoretical implications must ABC evaluate?
    A. Comparability, consistency, and relevance characteristics.
    B. Comparability and consistency characteristics and the economic entity assumption.
    C. Comparability characteristic, economic entity and going concern assumptions.
    D. None of the above.

21. Which of the following **best** illustrates the accounting concept of conservatism?
    A. Use of the allowance method to recognize bad debt losses from credit sales.
    B. Use of the lower of cost or market approach in valuing inventories.
    C. Use of the straight-line depreciation method.
    D. Utilization of a policy of deliberate understatement of asset values in order to present a conservative net income figure.

22. A soundly developed conceptual framework of concepts and objectives should
    A. increase financial statement users' understanding of and confidence in financial reporting.
    B. enhance comparability among companies' financial statements.
    C. allow new and emerging practical problems to be quickly soluble.
    D. all of the above.

23. A given item of accounting information is relevant and reliable, useful for decision-making, easily understood by users, has more benefit than cost but is immaterial in amount. Failure to disclose this item
    A. has serious implications as to the efficacy of the financial statements.
    B. renders the financial statements useless.
    C. makes no difference in the reliability of the financial statements.
    D. makes no difference in the reliability of the financial statements but requires disclosure.

24. The conceptual framework
    A. provides a framework in which fruitful debate can occur about accounting standards.
    B. provides the basis from which all future standards will be derived without lengthy debate.
    C. greatly simplifies the future work of the FASB in determining standards.
    D. none of the above.
    E. all of the above.

25. A systems approach to accounting theory is
    A. unnecessary because accounting theory creates accounting systems.
    B. valuable because accounting practice occurs in a dynamic environment.
    C. ignored by FASB because the FASB must consider essential truths in proclaiming accounting theory.
    D. none of the above.

Questions 1, 3, 6, 8, 12, 13, 14, 15, 16, 21, and 22 were taken from Kieso & Weygandt (1992).

Knowledge and Comprehension questions:

2, 3, 4, 7, 10, 13, 14, 22, 25

Application, Analysis, Synthesis, Evaluation questions:

1, 5, 6, 8, 9, 11, 12, 15, 16, 17, 18, 19, 20, 21, 23, 24, 25

APPENDIX D

TEACHER EVALUATION QUESTIONNAIRE

Answer each question with the following scale:

A = Excellent
B = Good
C = Average
D = Poor
E = Very Poor

1. Instructor's effectiveness in teaching the subject matter was:
2. Instructor's attitude toward students in the class was:
3. Instructor's preparation for class was:
4. Instructor's clarity of presentation was:
5. Instructor's manner of delivery was:
6. Explanation of course requirements was:
7. The pace of the course was:
8. Amount of assigned work was:
9. Relationship of examinations to material emphasized in the course was:
10. Grading techniques (tests, papers, projects, etc.) were:
11. Instructor's availability during office hours:
12. Regarding the course, would you recommend this instructor to the other students as:

Please use this side for written comments.

1. What aspects of the teaching or content of the course do you feel were especially good?

2. What changes could be made to improve the teaching or content of the course?

3. Use the space for any additional comments or special questions.

APPENDIX E

INTERVIEW QUESTIONS

1. Do you believe this course was different from regular accounting courses? If so, could you elaborate.
2. Did the differences cause you to view the study and practice of accounting from a different perspective?
3. Do you believe that you know more about the accounting profession than your peers in your current accounting classes? If so, in what way?
4. How do you compare your level of conceptual knowledge of accounting to your peers in your current accounting classes?
5. Do you think that any differences in your conceptual knowledge gained from this class will help you in later accounting classes? If so, how will it help?
6. Would you recommend this course to others? Why or why not?
7. Where would you include this class in the curriculum? Do you think it should be with Intermediate I, Intermediate II, senior year, or with principles?
8. Did you gain anything from reading the professional journals, such as a better background, power reading skills, less fear of reading journals for information,

more relevant knowledge, or so on?

9. Do you think you have better reading skills now?
10. Do you think you would go use the journals more often? Do you think you have more current knowledge than your peers because of the journal articles?
11. Do you believe you can now use the models (flow charts, external environment model, or the cultural ecology model) to analyze situations to solve problems?
12. As a result of this course, are you less fearful, more comfortable with speaking up in a class discussion?
13. How about writing assignments? Term papers? Essay exams? Problems without definitive answers?
14. Do you perceive any changes in your analytical skills due to this course and if so, how?
15. How do you compare how much time you spent on this class versus Intermediate I?
16. How long does it take you to research an article now compared to the beginning of the course?
17. If you could design homework assignments for others, how would you change what we have done this semester?
18. Would you include a term paper?
19. What about accounting cases?
20. How about two articles per week?
21. Would you choose a take home final or an in-class essay exam?
22. Is there anything else that you would like to add about this course?

VITA 2

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Candidate for the Degree of

Doctor of Education

Thesis: THE EFFECT OF EARLY ACCOUNTING THEORY INSTRUCTION ON UNDERGRADUATE ACCOUNTING STUDENTS' COGNITIVE DEVELOPMENT

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Personal Data: Born in Oklahoma City, Oklahoma on October 5, 1948, the daughter of John W. Peoples, Jr. and Katherene Davis Harwood Peoples.

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