A MODEL OF RECOMMENDED EDUCATION FOR THE FUTURE GROWTH OF CERTIFIED PUBLIC ACCOUNTANTS

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ABSTRACT

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By

Louis Conrad Jacoby

The education of public accountants on the university and college level has long been the subject of interest for various individuals and groups. With the advent of collegiate business administration programs with majors in accounting the course recommendations for the accounting curricula have been left primarily to committees of the American Accounting Association and the American Institute of Certified Public Accountants. The recommendations of these committees have greatly influenced the form and content of the accounting curricula of this country's colleges and universities. However, most of these recommendations provide the education necessary for the student to gain his first job. Little evidence is available that these committee recommendations are aimed toward the future growth of the accountant as a professional.

Any effective attempt to develop a series of recommendations for the education considered necessary for the

growth of public accountants needs to consider the perceptions of accounting practitioners and accounting educators, the literature from various interest groups and consideration of what curricula is presently offered by educational institutions.

The Objective

The primary objective of this research was to describe an educational program that provides not only an adequate preparation for a person entering public accounting but also prepares him for growth in his profession. Three sub-objectives related to the primary objective are as follows:

1. To inquire into the present curricula of accountancy and to determine what accounting educators and practitioners perceive as the most desirable educational background to achieve the primary objective.
2. To analyze the trends of accounting curricula in the various Michigan colleges and universities over a period of time and to determine what the future trends might be.
3. To compare the perceptions and trends in the first two sub-objectives to the various studies related to accounting education.

The Problem

The problem addressed by this research was the preparation of a series of recommendations of topic areas of study in general education, general business and accounting that would provide for the professional growth of the public accountant.

The Methodology

To develop a model of recommended education for the growth of public accountants several sources of input were utilized. First, a card deck mechanism similar to that used in Horizons for a Profession was utilized to determine the perceptions of accounting educators and practitioners as to the desirability of various courses for the future growth of the public accountant. Second, interviews were conducted with certain of the respondents to the card deck in order to gain an insight into these rankings. Third, literature pertinent to the topic was reviewed for clues as to the direction accounting education should be taking and fourth, college catalogs were reviewed to determine the present typical undergraduate accounting program.

Rankings by various respondents to the card deck were prepared and several statistical tests were utilized to establish whether the respondents were ranking in a similar manner. By combining the results of these rankings, the interviews, the literature and catalog reviews, and a set of evaluative criteria, recommendations were then prepared.

Conclusions

From the analysis of the statistical data and other items of information, certain conclusions were drawn. First, the respondents ranked the general education courses quite high. These results combined with the interviews pointed out that the public accountant needs more than just an accounting major for his future growth. He needs a background from a variety of areas in general education--science, mathematics, economics and behavioral sciences.

Second, general business courses of an advanced level were frequently ranked above the introductory courses. This resulted, according to the interviewees, because the introductory courses frequently were of a survey type and contained little conceptual knowledge.

Third, the typical undergraduate accounting courses were in the lower third of the rankings. The marginal benefit of any additional undergraduate accounting courses as perceived by the respondents was quite low.

Summary

The recommendations were prepared by taking into consideration the results of the card deck responses, the interviews, the literature and catalog reviews, and an evaluative set of criteria. No precise course outline was prepared. Instead, general topics of study were recommended along with certain areas under each of these

topics. These general topics of study and the areas under each of them are as follows:

- General Education
  - Logical and objective thinking
  - Communication ability
  - Cultural-ethical development
  - Economic-social-political development
- General Business
  - Finance
  - Marketing
  - Production
  - Law
  - Business organization and control
- Accounting
  - Basic course areas
  - Alternative course areas

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CHAPTER I

INTRODUCTION TO THE STUDY

Preface

After a brief outline of the objectives of the study an introduction to the background of accounting education on the university and college level as it applies to the beginning public accountant will be presented. The nature of the problem and why this study was undertaken will be indicated. The limitations and assumptions of the study will then be discussed.

Objectives

The primary objective of this study will be to describe an educational program for universities and colleges in Michigan that provides not only an adequate preparation for a person entering public accounting but also prepares him for growth in his profession. It might be assumed that with certain modifications that the recommendations could be utilized in other states. In addition, several sub-objectives of this study are listed below. They are:

1. To inquire into the present curricula of accountancy and to determine what accounting educators and

practitioners consider as the most desirable educational background to achieve the primary objective.

2. To analyze the trends of the accounting curricula in the various Michigan colleges and universities over a period of years and to determine what the future trend might be.

3. To compare the trends in the first two sub-objectives to the various professional and academic studies related to the education of the beginning public accountant.

It is not the purpose of this study to share the responsibility of curriculum building with the respondents of the study; the planning of instructional programs is nominally the function of the faculty of the educational institution. In the case of the professional curricula, where certification requirements must be met, a certain amount of this planning must conform to the rulings of regulatory boards or agencies.

The building of a curriculum may utilize the results of this study which is to describe an undergraduate program that considers not only the preparation of the student for his first employment but also prepares him for growth as a professional.

Background of Accounting Education

Whenever education is discussed two quotations come to mind. One quotation is quite old while the other

is comparatively recent. Aristotle, commenting on the educational principles and practices of his time, said: ". . . the existing practice of education is perplexing; no one knows on what principle it should proceed--should the useful in life, or should virtue, or should higher knowledge, be the aim of our training; all three opinions have been entertained. Again, about the means there is no agreement."[1]

R. J. Canning in a somewhat more recent article in The Accounting Review stated that, "people really develop themselves and about all we can do is to help them define their objectives, appraise their own talents, and provide some of the tools and techniques which will enable them to develop themselves."[2]

Thus, as accounting educators, we can see that the educational problems we face today in training professional accountants are not new ones. Argument over the objectives of education has continued for centuries. And, even today, there is not complete agreement as to the proper method of instruction or the best array of courses. Both Aristotle and Canning recognized this fact. While Aristotle's trilogy embodied the essence of our educational aims, Canning realistically recognized that individuals cannot be turned out from the academic assembly line as finished products.

The views of Canning and Aristotle are brought together in the educational considerations of accounting

study as stated in the 1963 report of the American Accounting Association's Committee on Educational Standards.

> As the accounting function in modern society grows, the role of the accountant inevitably becomes larger and more important. The demand for well-educated accountants is currently high and promises to remain strong in the foreseeable future. In this environment the issues that arise in developing a sound program of education for those who intend to pursue accounting careers are of prime importance. Although accounting involves a basic discipline backed by a considerable body of theory, it is generally agreed that one who prepares for a career in accounting must have a background considerably broader than merely a thorough understanding of accounting concepts and procedures.[3]

Businessmen are daily immersed in an environment composed of social, political and economic forces which must be understood if a business is to survive. And, accountants, side by side with these businessmen, are positioned at the center of these forces. Their survival is equally at stake. On a less personal scale, the management of these forces is vital to the maintenance of political democracy. Only education and understanding will provide the ability to manage. Therefore, the education of a professional accountant must be such that it will allow him not only to understand these various relationships, but to work with and within them.

How is such an education provided? At present, the most common approach to an accounting education is a four-year baccalaureate degree with a major or concentration in accounting. Of course, there are exceptions to this approach. However, the most recent report by the American Institute of Certified Public Accountants (A.I.C.P.A.) on

the individuals taking the examination for the Certified Public Accountant (C.P.A.) certificate indicated that the baccalaureate degree with a concentration or major in accounting is the prevalent mode of professional education.[4] For the professional accountant education is in three areas. First, the broad general knowledge of disciplines that will give him an understanding of the present political, economic and social environment; second, the semi-technical knowledge that will make available to him such tools as mathematics, statistics, communication skills, economics and finance; and third, the technical knowledge of the expert accountant. At the present time it appears to be generally understood that the professional accountant will obtain most of his semi-technical knowledge as well as his background of broad general knowledge at the university. The technical knowledge will also be acquired through university training supplemented by firm training programs.

Will future accounting education continue this same approach? Based on a review of the literature, it seems as if this trend will continue. Williams, reporting on a survey of individuals taking the C.P.A. examination in 1966, pointed out that 95 per cent of those persons were college graduates.[5] Other articles which support a four-year degree as a minimum have appeared in accounting journals. These articles also indicate the desirability of a fifth year to complete the "common body of knowledge."[6,7,8,9]

Statement of the Problem

What is the content level of education for the typical beginning professional accountant in the state of Michigan? How does his education compare with that recommended by the various interested groups of accountants and accounting educators? Does the emphasis in the various schools indicate whether there was, is, or will be a transition in the education for professional accountants? Are we becoming more general in our education and emphasizing the conceptual understanding rather than procedural details? These questions and many similar ones need answers. However, these questions merely point to the real problem, i.e., what direction must we now take in order to improve our education of beginning public accountants for their growth in their profession?

After reviewing the recommendations of the various professional and academic groups that have been studying the problem of what is the recommended education for the beginning public accountant, several conclusions can be drawn.

First, the desired objectives of accounting are to educate the citizen, educate the individual in business and educate the individual in accounting. The career accountant must be a well informed citizen, a well-rounded businessman and a proficient accountant.

Second, as seen by the academician and practitioner, the general education, general business and accounting

course requirements that have been recommended are limited to a four-year program. The optimum contribution to the beginning public accountant that can be made in a collegiate program limited to four years casts some serious doubts as to whether such a program can meet the desired objectives.[10,11,12]

Third, the proposed fifth year programs of study are new and have never been tried. Therefore, to spell out a form for a curriculum may be presumptuous. However, it is fair to conclude that there is a need for raising educational standards for public practice but this may not necessarily be tied to a fifth year of formal study. The evidence for such a need is derived from several educational committee reports and recommendations of the American Accounting Association (A.A.A.) and the A.I.C.P.A. and from the increased certification requirements of the various states.[13,14,15,16,17]

Fourth, for those colleges that presently offer only a four-year degree and do not have a graduate program, what effect will the current recommendations have on their future as suppliers of accounting graduates? They may have to give up any vestiges of accounting education to those schools presently equipped to handle the proposed expansion. Or, they will become suppliers of individuals trained in basic accounting, business and general education areas so that the schools with the larger facilities can polish these individuals with the requisite skills. Or,

they will be suppliers of accounting technicians as contrasted with professionals.

Need for the Study

In most technological areas there has been, and will continue to be, an explosion of knowledge and information which creates problems for the business community and educational institutions. The failure to recognize these changes in our society will prevent the curricula in our colleges and universities from being relevant and the resulting graduates from such institutions will face the possibility of being obsolete. Thus, curricula, faculty, and administrators need to relate to these current technological changes and also to the method by which the individual can adjust to these changes.

Our particular concern is that accounting educators must consider this increasing complexity when planning the curricula for their particular institutions. While those persons currently employed in the public accounting profession have acquired their knowledge and skills in many ways, there is a need to provide certain of these skills and more of this knowledge to beginning public accountants in the academic classroom. An accidental gathering of skills is no substitute for systematic learning.

The basic need for this research is apparent given the following facts and assumptions regarding the education available for public accountants in the institutions that

now grant a baccalaureate degree with a major in accounting.

First, although there have been two studies, Ford and Carnegie, on the quality of business education, there has been only one national study, Horizons for a Profession, on the quality of accounting education.[18,19,20] Doyle Williams presented a statistical summary or profile of accounting education based on a survey of C.P.A. candidates but this was descriptive in nature and not qualitative.[21] On the state level there have been no studies devoted to the exploration of the cognitive domain covering the requisite knowledge most recommended for the professional growth of the beginning public accountant. There have been state studies but these have usually provided a description of the employment patterns, successes, and failures of accounting graduates, and resource profiles of the accounting education in that particular state,[22,23,24,25]

Second, college accounting curricula are frequently prepared with the intent of the graduate's employment immediately upon completion of the program. The initiation of these students into their professional careers is given a very firm start at the undergraduate level. The student's professional growth beyond that point is generally overlooked, yet it is his future that is of primary importance.

Third, given the pressure by interested academic and professional groups to provide a fifth year of education for the public accountant, those colleges without such a

fifth year capability need to provide an education appropriate for their accounting graduates within their present four-year programs. This is not to say that these institutions will not expand in the future, but for some of these institutions the feasibility of such an expansion may be marginal, at best.

Fourth, educators, practitioners, and students need to be kept informed about the knowledge, skills and intellect that are expected of the members of the public accounting profession. This need was eloquently expressed by John Carey when he stated that "the future of the accounting profession will be determined not only by the opportunities which confront it, but by the intellectual capacity, knowledge, and skills of its members."[26] Also, the development of accounting education is not the sole responsibility of the academician. He is joined in this task by the practitioner, the graduates of the various accounting programs and the present students.

Limitations of the Overall Study

When undertaking a study of this type there are certain factors that limit both the input and the output. The major limitations listed below apply to the study as a whole. Other limitations that apply to specific methodological constructs will be found in the chapter on methodology.

First, this study does not attempt to prepare a curriculum solely to meet the state requirements for

certification as established by the Michigan State Board of Accountancy.[27] The educational requirements of the State Board of Accountancy represent a minimum standard of education to be met by those seeking to take the C.P.A. examination and as such these standards are not aimed at future professional growth.

Second, some of the data will be gathered by utilizing the questionnaire/interview technique. The problem of the recipient's interpretation of the question while he formulates a reply and the interpretation by the researcher of this reply is recognized.[29]

Third, this study is limited to exploring the education necessary for growth in the public accounting profession as evidenced in Michigan. This limitation excluded all other types of accountants, e.g., internal auditors, cost accountants and government accountants. Another closely related limitation specifies that the study will concentrate on the beginning staff accountant and not on any particular speciality such as tax, auditing, or management services.

Fourth, a review of the various course offerings of Michigan colleges and universities indicated a necessity of adopting a means of categorizing the courses required for the baccalaureate degree into the five major headings of general education, general business, economics, mathematics, and accounting. These headings will be defined in Chapter III--Methodology. Because of this standardization,

the breakdown into these headings and the breakdowns offered by the college catalogs may not agree.

Fifth, although, confirmation of the data gathering devices by means of personal interviews would provide additional validity, the financial constraints preclude such activity in any great measure. However, a certain amount of interviewing will be done with certain selected individuals who returned the completed data gathering device along with other interested academicians and practitioners.

Sixth, only those colleges and universities offering a major or concentration in accounting leading to a baccalaureate degree will be included in the study. Those colleges offering accounting courses but no major leading to a baccalaureate degree will be of secondary interest. Junior colleges will not be considered. The reason for their exclusion is that they are not educating for growth, but merely to meet the present minimum educational requirements for licensing.

Assumptions

Certain assumptions must be made in regard to this study. The first assumption is that all future public accountants will be required to have a baccalaureate degree with a major in accounting. The trend in requiring the major in accounting has been increasing in the past years and supports this assumption. As of this writing the most recent compilation by the A.I.C.P.A. of the certifying

jurisdictions requiring the degree plus an accounting major showed that 27 out of 53 jurisdictions were to have such an ordinance by mid-1969.[29]

A second assumption pertains to the selection of the accounting respondents on the opinion gathering phase of the study. It is assumed that the individuals in public accounting and accounting education included in the opinion sample can contribute useful opinions relevant to the education of the beginning public accountant.

The third assumption is that practitioners can discriminate among topics suitable for the academic preparation of public accountants and that they are able to rank those topics in order of their importance to the future growth of the beginning public accountant.

Fourth, it is assumed that useful inferences about the future growth of public accountants can be made by determining the specific knowledge needed by the practitioner as perceived by both the educator and the practitioner.

Fifth, the cognitive domain will be the area of concentration. Educational objectives and intended behaviors are frequently divided into domains labeled cognitive, affective, and psychomotor. These terms are briefly defined as follows:

> Cognitive Domain: Includes those objectives which deal with recall or reorganization of knowledge and the development of intellectual abilities and skills.

> Affective Domain: Includes those objectives which describe changes in interest, attitudes, and values and the development of appreciation and adequate adjustment.
>
> Psychomotor Domain: Includes the objectives which emphasize some muscular or motor skill, some manipulation of material and objects, or some act which requires a neuromuscular coordination.[30]

Due to the problems of calculating the validity, reliability, and objectivity as outlined by Krathwohl, Bloom and Masia, the affective and psychomotor domains will not be considered.[31] However, it must be remembered that education is a function of all three domains and not of cognition alone.

FOOTNOTES--CHAPTER I

[1]Aristotle, Politics (New York: The Modern Library, 1943), p. 185.

[2]R. J. Canning, "Training for an Accounting Career," The Accounting Review, XXXIII (July, 1958), p. 359.

[3]American Accounting Association, "Report of the Committee on Educational Standards," The Accounting Review, XXXIX (April, 1969), p. 156.

[4]Doyle Z. Williams, "A Profile of CPA Candidates," The Accounting Review, XLIV (January, 1969), p. 156.

[5]Ibid.

[6]Edward S. Lynn, ed., "Educational Policies of the A.I.C.P.A.," The Journal of Accountancy, 113 (March, 1963), pp. 87-88.

[7]Doyle Z. Williams, "Reactions to 'Horizons for a Profession'," The Journal of Accountancy, 127 (June, 1969), p. 68.

[8]Special Committee on the Report of the Commission on Standards of Education and Experience for CPAs, "Education and Experience for CPAs," The Journal of Accountancy, 107 (June, 1959), p. 68.

[9]Editorial, "The Objective of Accounting Education," The Journal of Accountancy, 111 (June, 1961), pp. 33-34.

[10]Robert H. Roy and James H. MacNeill, Horizons for a Profession (New York: American Institute for Certified Public Accountants, 1967), pp. 141-167.

[11]Committee on Education and Experience Requirements, Report of the Committee on Education and Experience Requirements for CPAS (New York: American Institute of Certified Public Accountants, 1969), pp. 41-59.

[12]American Accounting Association, "Report of the Committee to Compile a Revised Statement of Educational Policy," The Accounting Review, XLIII (Supplement), pp. 51-124.

[13]Trump and Ball, "Reactions," p. 83.

[14]U. S. Army and the American Institute of Certified Public Accountants, Provisions in CPA Laws and Regulations (New York: The American Institute of Certified Public Accountants, 1968), pp. 67-73.

[15]American Accounting Association, "Report of the Standards Rating Committee," The Accounting Review, XXIX (January, 1954), pp. 39-40.

[16]American Accounting Association, "Report of the Committee on Educational Standards," p. 449.

[17]John L. Carey, The Rise of the Accounting Profession to Responsibility and Authority 1937-1969 (New York: The American Institute of Certified Public Accountants, 1970), pp. 259-285.

[18]Roy and MacNeill, Horizons for a Profession.

[19]Robert A. Gordon and James E. Howell, Higher Education for Business (New York: Columbia University Press, 1959).

[20]Frank C. Pierson and others, The Education of American Businessmen (New York: McGraw-Hill Publishing Company, 1959).

[21]Doyle Z. Williams, A Statistical Survey of Accounting Education, 1967-68 (New York: American Institute of Certified Public Accountants, 1969).

[22]Donald E. Keller, A Research Study of Some Aspects of Accounting Education (San Francisco: California Certified Public Accountants Foundation for Education and Research, 1968).

[23]Harry Simons, Education for Accountancy (Los Angeles: University of California, Los Angeles, Bureau of Business and Economic Research, 1960).

[24]Felix P. Kollaritsch, Opinions, Scholastic Rankings and Professional Progress of Accounting Graduates (Columbus, Ohio: The Ohio State University, College of Administrative Science, Department of Accounting, 1968).

[25]Committee on Relations with Colleges and Universities, A Profile of Accounting Education in Kentucky (Louisville, Kentucky: Kentucky Society of Certified Public Accountants, 1967).

[26]John L. Carey, The CPA Plans for the Future (New York: American Institute of Certified Public Accountants, 1965), p. 258.

[27]1970 Register, State of Michigan, Department of Licensing and Regulations, Board of Accountancy (Lansing, Michigan: Department of Licensing and Regulation, 1970), pp. vi-vii.

[28]Bernard S. Phillips, Social Research; Strategy and Tactics (New York: The MacMillan Company, 1966), p. 117.

[29]Provisions in CPA Laws and Regulations, pp. 67-73.

[30]David B. Krathwohl, Benjamin S. Bloom and Bertram B. Masia, Taxonomy of Educational Objectives, The Classification of Educational Goals, Handbook II: Affective Domain (New York: David McKay Company, Inc., 1964), pp. 6-7.

[31]Ibid., pp. 85-91.

CHAPTER II

LITERATURE REVIEW

Introduction

A review of the evolution of the various professions would provide a great deal of evidence showing the similarity of the evolution of the professions' educational programs. Initially, individuals meeting their social needs acquired a self-taught knowledge. Through continued exposure to the various needs and problems of society, bodies of knowledge grew and were transmitted to others thus resulting in a tradesman-journeyman relationship.

Slowly these bodies of knowledge were accumulated and over many years this knowledge was reviewed and improved. Experience gave way to the classroom technique as the means of imparting knowledge. Professional schools developed due to the increased amount of knowledge. Originally these professional schools were strongly oriented toward the practical and less toward the liberal-cultural-general aspects of education. However, these professional schools have, over time, evolved into the more research oriented or investigative type of institution. Less

practical experience and more emphasis on the reasoning processes of induction and deduction to solve problems has become the rule rather than the exception. Along with this evolution knowledge has increased. To combat this knowledge explosion, curricula are being continually updated and reviewed and the fundamentals of theory and principles are emphasized.

Accounting knowledge and collegiate accounting education has followed a similar pattern of development. Section One will review the development of schools of business and the associated departments of accounting while Section Two will deal with the various national and state studies of accounting education. These studies are classified into: (a) studies concerning the quality of accounting education, and (b) studies of a descriptive nature about accounting education. The third section of the chapter will review the recommendations made by the various educational committees of the A.I.C.P.A. and the A.A.A.

Section One: Development of Accounting Education

The earliest attempt to found a school of commerce on the college level was in 1851 at the University of Louisiana. However, this attempt was abandoned in 1857. A few years later, in 1870, the University of Illinois established a School of Commerce but it too was discontinued in 1880. The Board of Trustees of the University of Illinois

felt that the school was preparing clerks not future business leaders and such a misallocation of resources for this school was wasteful.[1]

The University of Pennsylvania may lay official claim to being the first American collegiate school of business. In 1881, Mr. Joseph Wharton donated $100,000 to the University. With the grant was a memorandum to the Board of Trustees of that institution outlining a "Project for a School of Finance and Economy to Form a New Department of the University."[2] Wharton's desire was that the education in "Finance and Economy" should be of genuine collegiate or university grade. He stipulated that the school should "form an integral part of the university," and after outlining his thoughts on what should be taught in the way of business courses, he stated that "other branches of an ordinary good education must be acquired by the students."[3] Thus, Wharton recognized that collegiate education for business should prepare men not only for their field of endeavor but also for being of service to society and the state.

The efforts of the American Association of Public Accountants (A.A.P.A.) to establish a college of accounting in the State of New York in the early 1890's was quite energetic but it failed in less than a year. A second attempt by the A.A.P.A. to establish a degree granting college within the jurisdiction of the Regents of the University of New York succeeded for two years, but it too

failed. The reasons for failure were too few students, too little support from the business community, and a lack of communication of the school's objectives and purposes to the Regents.[4]

However, by 1907, there were eleven colleges and universities that had patterned themselves after the Wharton School.[5] In the six years from 1910 to 1916 the number of these schools increased from 52 to 116.[6] Many of these institutions were offering courses which were aimed at the individual who was interested in public accounting. By the 1920's most of the major universities and colleges not only had accounting courses in their curricula but were offering degrees in business with a major in accounting.

In the early 1900's the standards for admission to practice as a public accountant in the form of education and experience were quite varied. The states were in complete control of licensing and testing with the result that requirements for entrance into the profession varied widely. Gradually, the state boards of accounting recognized the need for not only utilizing a standardized test for the certification of accountants but also the importance of establishing some sort of minimum educational requirements for these candidates. The state of New York was the pioneer in establishing a college education as a prerequisite for the examination. On January 1, 1938, New York's education requirement stated that the candidate must be a

graduate of an approved course of study at the college level and that the content of this course was to be 50 per cent liberal arts subjects and 50 per cent professional subjects with a minimum of 24 semester hours in accounting, 8 semester hours in commercial law, 8 semester hours in finance and 6 semester hours in economics.[7] Slowly, other states proposed legislation requiring a baccalaureate degree with a major in accounting from an acceptable institution. It should be kept in mind that these regulations were generally minimal and were not necessarily related to the future growth of the professional accountant.

Doyle Williams, in a 1969 report, indicated that 95 per cent of those taking the C.P.A. examination in November, 1966 had a college study.[8] A separate report prepared jointly by the A.I.C.P.A. and the U. S. Army Audit Agency stated that by mid-1969 27 out of 53 jurisdictions will have the baccalaureate degree with a major in accounting as the minimum requirement for public accounting education.[9] Recent policy recommendations of the Council of the A.I.C.P.A. stated that a five-year program of college study should be the standard of education for the C.P.A.[10]

With the continuing emphasis on collegiate education as a requisite for professional accounting practice, the importance of understanding quite clearly the nature of accounting education and its environment becomes apparent. The problem is that data available for

constructing either a national or a state profile of accounting education has been very limited. To facilitate a review of the pertinent literature, a distinction has been made between the national and state studies of accounting education and committee or association recommendations about various aspects of accounting education. The second section of this chapter reviews the national and state studies of accounting education on the collegiate level.

Section Two: National and State Studies

A. Studies of a Qualitative Nature

There have been three studies of a qualitative nature within the last two decades that have had influences on accounting curricula. The first two of these qualitative studies were published in 1959 under the separate auspices of the Ford Foundation and the Carnegie Corporation.[11,12] Both these studies had as their major emphasis the study of general business education with comments about major areas of concentration within the domain of general business. The principal results of both the Ford and Carnegie reports were that a more liberal form of business education should be considered with more emphasis on the general or liberal areas, less emphasis on general business courses, and a minimal major or technical area.

Certain benefits have accrued to business education in general, and accounting education in particular, as a result of the publication of these two reports. For example, there has been an ever increasing integration of accounting education with various other disciplines. Introductory accounting courses emphasize a user orientation as contrasted to the older methods that emphasized procedural details. The generation of data by accountants for decision making has gained a prominent role in the education of accountants. Quantitative techniques are becoming more common and are introduced early in the education of future accountants. The use of economic analysis provides the accountant with more tools for use in his decision making and in his advisory capacities. Thus, although accounting educators may have frowned on the recommendations of a more general education, the trend has been to reduce the emphasis on procedural detail and incorporate the concepts, where applicable, of disciplines outside the business-accounting world.

Immediately after the publication of the Ford and Carnegie reports a committee under the auspices of the A.A.A. was formed to review these reports. This committee emphasized that it might be impossible to think of one set of proportions in which general education, business education, and accounting could be combined for the ideal education. Schools vary in their student bodies and the communities they serve. Thus, to strive to make one school

a copy of another school would ignore the circumstances of their existence.[13]

The third qualitative study was Horizons for a Profession by Roy and MacNeill.[14] This study was published in 1967 and focused primarily on the educational needs for the beginning C.P.A. A common body of knowledge was presented that the authors felt appropriate for a beginning public accountant. The principal impact of Horizons on accounting education lies in three areas. First, increasing the emphasis on conceptual learning; second, increasing the applications of quantitative techniques and the computer; and third, pointing the way for formal accounting education to include graduate study.

After the publication of Horizons a series of symposiums were held in which leading accounting educators and practitioners discussed the implications of this study. The primary objectives of these symposiums were to analyze the recommendations of Horizons, evaluate the relevance of the findings and consider the appropriate means of implementing these recommendations.[15]

The participants of these symposiums generally approved of the findings of Horizons and believed that Horizons would best serve as an effective motivator for the improvement of the educational preparation for accountants. However, in endorsing the conceptual elements, the participants agreed that further thought should be undertaken to determine the "respective roles of colleges and

universities and the profession in sharing the responsibility for the initial education and training of professional accountants."[16]

B. Studies of a Descriptive Nature

Descriptive or empirical studies have focused primarily upon the quantitative aspects of accounting education. Over the past two decades five of these descriptive studies have been published. These studies by Simons, Kollaritsch, Williams, Keller and the Kentucky Society of C.P.A.s will be reviewed in this section. To date these studies represent the sum total of the descriptive or empirical studies available on the subject of accounting education.

Harry Simons' study, published in 1960, detailed the results of a survey of 1,237 graduates from the School of Business Administration, University of California, Los Angeles.[17] These graduates were accounting majors who had received the baccalaureate degree over the years 1946-1957. A variety of questions were asked about their interest in accounting, their opinion of their college training, their present occupations, their aspiration realizations and many other related topics. The results were compiled and, based upon these compilations, the School of Business Administration at U.C.L.A. had a description of its graduates and their successes and failures. To the school involved the results were highly

significant but applicability of the results outside of this school on a national, or even a state level, is somewhat conjectural.

In 1968, Felix Kollaritsch reported on a study of 1,220 individuals who had graduated from the Accounting Department of the College of Administrative Science of the Ohio State University between the years 1920 and 1967.[18] The results of the study gave a variety of information about the respondent's social, academic, and economic backgrounds; their employment patterns and mobility; salaries and their successes and failures. Like Simons' study, Kollaritsch concentrated on the post-graduate careers of his respondents who were all from one school. Also, like Simons, there is a limited use for these statistics outside of the school involved.

Doyle Z. Williams, under the sponsorship of the A.I.C.P.A. surveyed and compiled certain statistics relative to the accounting education for the years 1967-1968.[19] Schools in 28 states participated in a survey questionnaire developed by the Institute that provided data for the preparation of a profile on accounting education. The national profile that was developed described the institutions offering some type of an accounting program, the accounting faculty, their financial support, and the undergraduate and graduate programs of the participating institutions. Williams' study, although exhibiting a broader base upon which to sample, essentially did no more

than report the status quo. However, certain of the findings did lend support to findings evidenced in Horizons.

California was the base for a second study on accounting educators. Keller prepared a profile of certain aspects of accounting education which was published in 1968. The purposes of his study were: (a) to provide a profile of the resources available to instruct accounting majors; (b) to determine where these accounting majors were going; and (c) to compare the education of these accounting majors with that reported in other studies.[20] The primary source of data was a series of questionnaires sent to accounting practitioners, academicians, chairmen of accounting departments, recently recruited accountants, and college placement officers. The results enabled Keller to establish a rather complete profile of the quantitative aspects of accounting education in the State of California.

Finally, in 1967, the Committee on Relations with Colleges and Universities of the Kentucky Society of C.P.A.s published A Profile of Accounting Education in Kentucky.[21] This study surveyed all of the colleges and universities in the state as to their accounting offerings, accounting curricula and the backgrounds of the accounting educators. The results are a factual listing of the schools that teach accounting, the courses offered and the individual faculty members' vita.

Thus, it can be seen that the studies that have been done at the state level have been primarily descriptive

in nature. This is not to say that the information collected and reported in these studies is not important. However, studies of a qualitative nature might give the potential user of this information a better base for planning changes in accounting curricula.

Section Three: Committee Recommendations

The following section will deal with the general development of educational recommendations by both the professional and the academic accounting groups. The precise formulations of policy dealing with courses in the areas of general education, general business, economics, quantitative, accounting and electives are dealt with in detail in Chapter V--Curricula Review. It is the purpose of this section to deal with the general contributions of each of the many committees involved to date in accounting education.

A. Development of Educational Recommendations by the A.I.C.P.A.

Committee action has been a typical procedure used by groups to study problems in which the committee's has had an interest. Accounting groups do not differ in this respect. In 1907, at the annual meeting of the A.A.P.A., the forerunner of the A.I.A. and the A.I.C.P.A., Dean Joseph F. Johnson of New York University, School of Commerce, Accountants and Finance, read a paper on accounting education. Dean Johnson stated that "I do not

believe the profession will receive the recognition from the public which is its due until we recognize the fact that a very broad and liberal education, a thorough education, is necessary for professional practice."[22]

As a result of the emphasis on education and the growing number of institutions offering accounting courses, the A.A.P.A. established a committee on education to keep a close watch over the institutions that taught accounting, the courses being taught, Association members' thoughts on accounting education, and other pertinent matters. For several years the committee acted as an information agency for the association and for the colleges teaching accounting. In 1917, a suggestion was made that, in addition to its previous tasks, the committee on education should formulate a curriculum to be followed by the schools teaching accounting. However, when such a curriculum was submitted by the Association to the colleges in 1924, it received little support from the academic community.[23]

A new committee was formed in 1929 to differentiate, classify and weigh the importance of the type of knowledge and the techniques of application necessary to meet the requirements of practice. This was the forerunner, by 41 years, of the common body of knowledge embodied in Horizons for a Profession. The idea was for the committee to establish courses based on all the facts that would be suitable for the preparation of the students. Yet, when

the results of the committee's work were circulated for opinion purposes, there was little favorable response and as a result this project was abandoned.[24] Several years later, in 1934, the education committee of the A.I.A. formulated a five-point proposition on education for accountants for adoption by the Institute. Essentially the five points were: first, college or university training for public accountants; second, the education should include liberal and systematic studies; third, the Institute should not formulate detailed curricula; fourth, accept only individuals of high ability into training; and fifth, formal education should be given greater emphasis over experience alone. However, no positive action was taken by the Institute.[25]

The 1935 Yearbook of the A.I.A. detailed policy recommendations that essentially would strengthen the educational training for public accounting practice.[26] Specific recommendations were made in 1936, and later approved, that outlined a four-year, 120 semester hour requirement equally divided between the cultural-liberal subjects and the professional subjects. The professional subjects would entail 38 semester hours in accounting, 8 semester hours in law, 8 semester hours in finance and 6 semester hours in economics.[27] In addition, the committee recommended that ultimately a five-year course of study be implemented--three years of professional work and two years in the liberal arts.[28] This was the first

mention of a five-year course of study. This five-year plan surfaced again 33 years later as part of the A.I.C.P.A.'s Committee on Education and Experience Requirements recommendation for institute policy.

During the late 1930's and the early 1940's there developed a rather serious objection on the part of the academic community to the A.I.A.'s recommendation about curricula detail. Meeting in 1941, the academic community (represented by the A.A.A.) and the practitioners (represented by the A.I.A.'s Committee on Education) decided it would be very difficult to establish uniform curricula standards. Later, the two groups met again and laid the groundwork for a more permanent cooperation. As a result of these meetings, the accounting academicians were to be responsible for curriculum and teaching methods; the A.I.A. was to be responsible for staff training programs, study conferences and internship programs.[29]

The early 1950's found the Institute studying education and experience requirements with the result that in 1956 its Commission on Education and Experience published a report which outlined the characteristics of the profession. The Commission made broad suggestions related to education but in essence followed the A.A.A. Standards Rating Committee report of 1954.[30]

A special committee was formed by the Institute in 1956 to consider the Commission's report and to determine which of the recommendations should be adopted as Institute

policy. This special committee diligently reviewed all the literature to date, interviewed various interested persons in accounting practice and academia, and in 1959 published their recommendations. Their recommendations in the area of undergraduate education paralleled those of the Commission.[31]

Early in the 1960's the A.I.C.P.A. commissioned a study to define the common body of knowledge needed for beginning C.P.A.s. The resulting study by Professors Roy and MacNeill became the first real conceptual analysis of academic preparation for public accounting careers.[32] Horizons for a Profession was widely circulated and later reviewed and debated in several symposiums held throughout the country. As a result of Horizons and the symposiums, the Institute appointed a Committee on Education and Experience in 1966 to formulate Institute policy pertaining to the requirements which would become the standards for admission to the public accounting profession. The Committee on Education and Experience recommended the adoption of Horizons as the basis of education for those entering the accounting profession. The Committee also recommended that an equivalent of five years of college study be substituted for the present education and experience requirements.[33] The report was adopted by the Institute and the recommendations given the status of "policy." In the same manner that Horizons was debated

and discussed in symposiums throughout the country, the Committee's recommendations were likewise considered.

Of the many issues discussed in these symposiums, four appeared most frequently in their summary reports:

1. The need for a five program of college study recommended by the Committee.
2. Alternative routes by which the five years of college study could be completed.
3. Problems of implementing the five year program.
4. Faculty development required to implement the program of study outlined in the Committee report.[34]

Other general observations made in relation to the Committee report were on:

1. The C.P.A. certificate as evidence of basic competence in accounting.
2. That Horizons is authoritative in delineating the common body of knowledge for C.P.A.s.
3. That at least five years of college study are needed for the common body of knowledge and this education could eliminate the experience requirement.
4. That student internships are desirable and should be encouraged.
5. The accounting educational programs should be flexible and adaptive and this is best achieved by entrusting their specific content to the academic community.[35]

B. Development of the Educational Recommendations of The American Accounting Association

The American Accounting Association has always had a basic interest in the education of individuals in

accounting. The A.A.A. has tried over the years to raise the quality of collegiate education and reduce the educational disparities that have existed in the hundreds of colleges and universities in the United States that offer instruction in the area of accounting. However, it has only been since the late 1940's that a concerted effort through extensive committee work has produced reports attempting to outline standards of education for persons interested in accounting as a career.

In 1949, the Committee on Standards Rating was formed to deal with the academic problems of accounting education. The Committee devoted itself to studying several specific and pressing needs. First, the ultimate objectives of the education of the accountant were outlined. These objectives were: (1) education for the citizen; (2) education in business; and (3) education in accounting.[36] Second the committee outlined standards that it felt to be necessary for education in accounting. These standards were for staff, students, undergraduate and graduate curricula, and two-year programs. These proposed standards, or norms, were not rigid but were established for general conformance and were flexible enough to permit reasonable deviations.

For the purposes of this research, only the standards involving the undergraduate program in accounting will be reviewed in the following paragraphs. Keeping in mind the three objectives of accounting education, the Standards

Rating Committee outlined a program that was divided into 50 per cent liberal, cultural, or general non-business studies; 25 per cent in general business; and 25 per cent in accounting. Accounting studies would include introductory, intermediate, advanced, cost, auditing, and tax courses as requirements.[36] The liberal area would provide the broad training for citizenship, an understanding of the society in which the student lives, and an appreciation of human knowledge and activity. The business area would provide training for the broader aspects of business while the accounting offerings were to give the student a basic knowledge in the field of accounting.

A special task committee in the area of education was formed by the A.A.A. to study accounting instruction. The Committee on Standards of Accounting Instruction, the successor to the Standards Rating Committee, was to determine what studies were a part of the undergraduate accounting curriculum and make any recommendations they deemed necessary. The committee first gathered data about the present accounting curricula in several colleges and found that the results formed a "typical" curriculum which followed very closely the outline presented by the Standards Rating Committee.[38]

The Committee on Standards examined in detail the courses, their content, and the sequence of their offering and then made several recommendations. First, no more than 25 per cent of a student's undergraduate program should

be in a major field. Instead of increasing the number of undergraduate hours to provide for more accounting course work, provision should be made for such additional work to be taken on the graduate level. Second, at least 24 semester hours of qualitative work is needed for an adequate major and the maximum should be no more than 30 semester hours. Third, the first course in principles is the keystone to the entire sequence. The principles course should come early in the academic career of the undergraduate and be followed by the intermediate and advanced level sequences. Specialized courses in accounting have a definite place; however, it is questionable whether such courses should appear as a part of the undergraduate program as a diversity of courses could mean a decline in the quality of instruction. Fourth, constant review of course content should be maintained to insure that there is no duplication of work and that each course is genuinely worthwhile.[39]

In order to determine the changes in curricula that had taken place over the five-year period 1954-1959, the Committee on the Scope of the Four Year Accounting Major was instituted to study these changes and make any recommendations it deemed necessary.[40] The Scope Committee, through the use of questionnaires, found that the undergraduate hours were approximately 50, 25, and 25 per cent in the liberal, general business, and accounting areas, respectively. They found a slight reduction in

required accounting and a slight increase in the number of required courses in business and liberal arts. In addition, the Scope Committee reaffirmed the semester hour percentage as outlined by the 1954 Standards Rating Committee but expanded the accounting and business objectives to permit the accounting major to (1) develop an inquiring mind; (2) obtain a thorough understanding of accounting concepts and principles; (3) acquire an appreciation of the role of accounting in business; (4) become familiar with the environment in which business operates; and (5) have a knowledge of the functional areas of business.[41]

In 1962, the Courses and Curricula Committee: Accounting Courses for Accounting Majors, was charged with developing criteria for selecting content.[42] The committee suggested goals for an accounting curriculum rather than specific recommendations for achieving these goals. Certain objectives to be achieved by a university accounting curriculum development were then outlined. The outline was divided into three basic elements:

1. Thorough development of the purposes, classified as to managerial purposes, legal purposes, and/or social purposes which accounting serves.

2. Descriptions of accounting practices, classified in the same manner in which accounting purposes are classified.

3. Appraisal of each area of accounting practice in terms of the extent to which it fulfills its stated purpose.[43]

This committee, unlike preceding committees on accounting education did not provide any percentages of semester hour distribution but instead dealt with the development of curricula to meet the future demands of the profession, expanded college enrollments and increased interest in academic standards.

The Committee on Educational Standards was asked in 1962 "to develop standards of education suitable for persons to perform the accounting function in modern society."[44] It was thought that disparities in the quality of accounting education should be narrowed among the institutions of higher learning. Therefore, the purpose of the committee's study was to formulate some guidelines pointing to educational standards that should prevail in any institution of higher learning involving a major in accounting. The Committee reviewed the findings of the 1954 Standards Rating Committee and retained the parts of the 1954 report which were considered still valid. The standards the 1962 Committee proposed were similar to the 1954 Committee except that general business studies were allocated 25 to 30 per cent of the hours and the liberal studies remained at 50 per cent of the total hours.

The development of the general education and general business knowledge included in an accounting major's college curriculum was the task of the Committee on Courses and Curricula--General.[45] This committee analyzed the qualities needed for success in an accounting career and

the proper role of college education in the development of these qualities. Based on this analysis, the Curricula Committee outlined five categories of knowledge that should be included in the college curriculum. These five categories in liberal arts and general business are as follows:

Liberal Arts and General Business Knowledge (75-80%)

1. Development of basic skills in logical and objective thinking (philosophy, or logic, mathematics, statistics, and natural science).

2. Development of communicative abilities (composition and logic, both written and oral).

3. Cultural-ethical-physical development (art, music, religion, history, philosophy, ethics, geography, and physical education).

4. Understanding the socio-economic-political framework of business in a free enterprise system (behavioral sciences--psychology, social psychology and sociology; political science, economics, and law).

5. Understanding the organization, functions, and problems of business--a basis for objective analysis of business situations and professional reaction (production, marketing, finance and business organization, and control).[46]

In developing this curriculum, the Committee sensed the need for a certain degree of integration of subject matter from the various fields of knowledge. The student should be required to bring knowledge from various fields to liberal and general business to bear upon solutions to business problems.

The realization of the work of all the committees that worked on the problems of accounting education from

the late 1940's to the 1960's appeared in a supplement to the 1968 Accounting Review.[47] The purpose of this supplement was to update all previous committee efforts on accounting educatin by the A.A.A. With regard to the sections of this supplement pertinent to this research, all of the suggestions and recommendations by previous committees were reviewed and reconsidered in the light of current thinking. Certain modifications were made, but in general there was a reaffirmation of the work of the previous committees.

Summary

This review of the pertinent literature in accounting education has illustrated several points. First, there has been a continuing concern about the education of accountants by both practitioners and academicians. The practitioners were originally concerned about the supply of adequately trained individuals in the skills of accounting and attempted to prescribe curricula to the academicians. Gradually the responsibility for curriculum selection was left to academicians by the practitioners. However, the practitioners still maintained an active interest in the academic realm.

Second, the academic aspects of accounting education are not just a statement of credits to be earned or courses to be taken. The academician, in combination with the practitioner, wishes to provide an education that would allow certain opportunities for growth of the individual.

To this end, thoughtful consideration has been given to the best means of creating these capacities through undergraduate education.

Third, certain descriptive and empirical studies have been prepared on accounting education. These studies have pointed out that most schools are following or are trying to follow the various committee recommendations. However, these studies have generally been retrospective in the scope of their coverage.

FOOTNOTES--CHAPTER II

[1]James D. Edwards, History of Public Accounting in the United States (East Lansing, Michigan: Bureau of Business and Economic Research, School of Business, Michigan State University, 1960), p. 60.

[2]Richard Emory Johnson, The Wharton School: Its Fifty Years, 1881-1931 (Philadelphia: The University of Pennsylvania Press, 1931), p. 7.

[3]Ibid., p. 9.

[4]Carey, The Rise of the Accounting Profession from Technician . . ., p. 42.

[5]Ibid., p. 97.

[6]Edwards, History of Public Accounting, p. 135.

[7]Ibid., p. 179.

[8]Williams, "A Profile of C.P.A. Candidates," p. 156.

[9]U. S. Army Audit Agency and the American Institute of Certified Public Accountants, Provisions in C.P.A. Laws and Regulations, pp. 5-39.

[10]Report of the Committee on Education and Experience Requirements for CPAs (New York: American Institute of Certified Public Accountants, 1969), p. 12.

[11]Gordon and Howell, Higher Education for Business.

[12]Pierson and others, The Education of American Businessmen.

[13]American Accounting Association, "Report of Committee on Ford and Carnegie Reports," The Accounting Review, XXXVI (April, 1961), pp. 193-4.

[14]Roy and MacNeill, Horizons for a Profession.

[15]Williams, "Reactions to 'Horizons for a Profession'."

[16]Ibid., p. 83.

[17]Simons, Education for Accountancy.

[18]Kollaritsch, Opinions, Scholastic Rankings and Professional . . .

[19]Williams, A Statistical Survey of Accounting Education, 1967-1968.

[20]Keller, A Research Study of Some Aspects of Accounting Education.

[21]Committee on Relations with Colleges and Universities, A Profile of Accounting Education in Kentucky.

[22]Carey, The Rise of the Accounting Profession, 1896-1936, p. 97.

[23]Ibid., p. 264-65.

[24]Ibid., p. 266.

[25]American Institute of Accountants Yearbook--1934 (New York: American Institute of Accountants, 1934), p. 256.

[26]American Institute of Accountants Yearbook--1935 (New York: American Institute of Accountants, 1935), p. 285.

[27]American Institute of Accountants Yearbook--1936 (New York: American Institute of Accountants, 1936), p. 441.

[28]Ibid., p. 442.

[29]Carey, The Rise of the Accounting Profession to Responsibility and Authority: 1937-1969, pp. 124-25.

[30]Standards of Education and Experience for CPAs (Ann Arbor, Michigan: Bureau of Business Research, 1956), p. 128.

[31]Special Committee on the Report of the Commission on Standards of Education and Experience for CPAs, "Education and Experience for CPAs," p. 69.

[32]Roy and MacNeill, Horizons for a Profession.

[33]Report of the Committee on Education and Experience Requirements for CPAs, pp. 6-7.

[34]W. Thomas Porter, Jr., Higher Education and the Accounting Profession, A Summary Report on The Haskins & Sells 75th Anniversary Symposiums Fall and Winter 1970-71 (New York: Haskins & Sells, 1971), pp. 11-16.

[35]Ibid., pp. 16-24.

[36]American Accounting Association, "Report on the Standard Ratings Committee," p. 39.

[37]Ibid., p. 43.

[38]American Accounting Association, "Report of the Task Committee on the Standards of Accounting Instruction," The Accounting Review, XXXI (January, 1956), p. 36.

[39]Ibid., p. 41.

[40]American Accounting Association, "Report of the Committee on the Scope of the Four Year Accounting Major," The Accounting Review, XXXV (April, 1960), p. 203.

[41]Ibid., p. 204.

[42]American Accounting Association, "Report of the Committee on Courses and Curricula: Accounting Courses for Accounting Majors," The Accounting Review, XXXVIII (July, 1963), p. 601.

[43]Ibid., p. 603.

[44]American Accounting Association, "Report of the Committee on Educational Standards," p. 447.

[45]American Accounting Association, "Report of the Committee on Courses and Curricula--General," The Accounting Review, XXXIX (July, 1964), p. 721.

[46]Ibid., p. 724.

[47]American Accounting Association, "Report of the Committee to Compile a Revised Statement of Educational Policy," The Accounting Review, XLIII (Supplement), pp. 51-124.

CHAPTER III

METHODOLOGY

Introduction

Data gathering for this research utilized four techniques--an opinion survey, interviews, a catalog study, and reviews of the related literature. Figure 3.1 outlines the overall methodology of the dissertation while Figure 3.2 is a schematic diagram of the data collection and analysis portion thereof. Essentially, the data collection and analysis phase consisted of asking two questions related to the objectives of the research; preparing, testing and mailing the opinion gathering devices aimed at answering these questions; computing the results from the returned data; testing some hypotheses related to the two questions; and relating these questions to the literature, the catalog study and the interviews. Each of these data collection and analysis steps required some delineation and will be discussed in detail in the latter part of this chapter.

Opinion Survey: Question One

What are the opinions of accounting educators in the various colleges and universities in Michigan offering

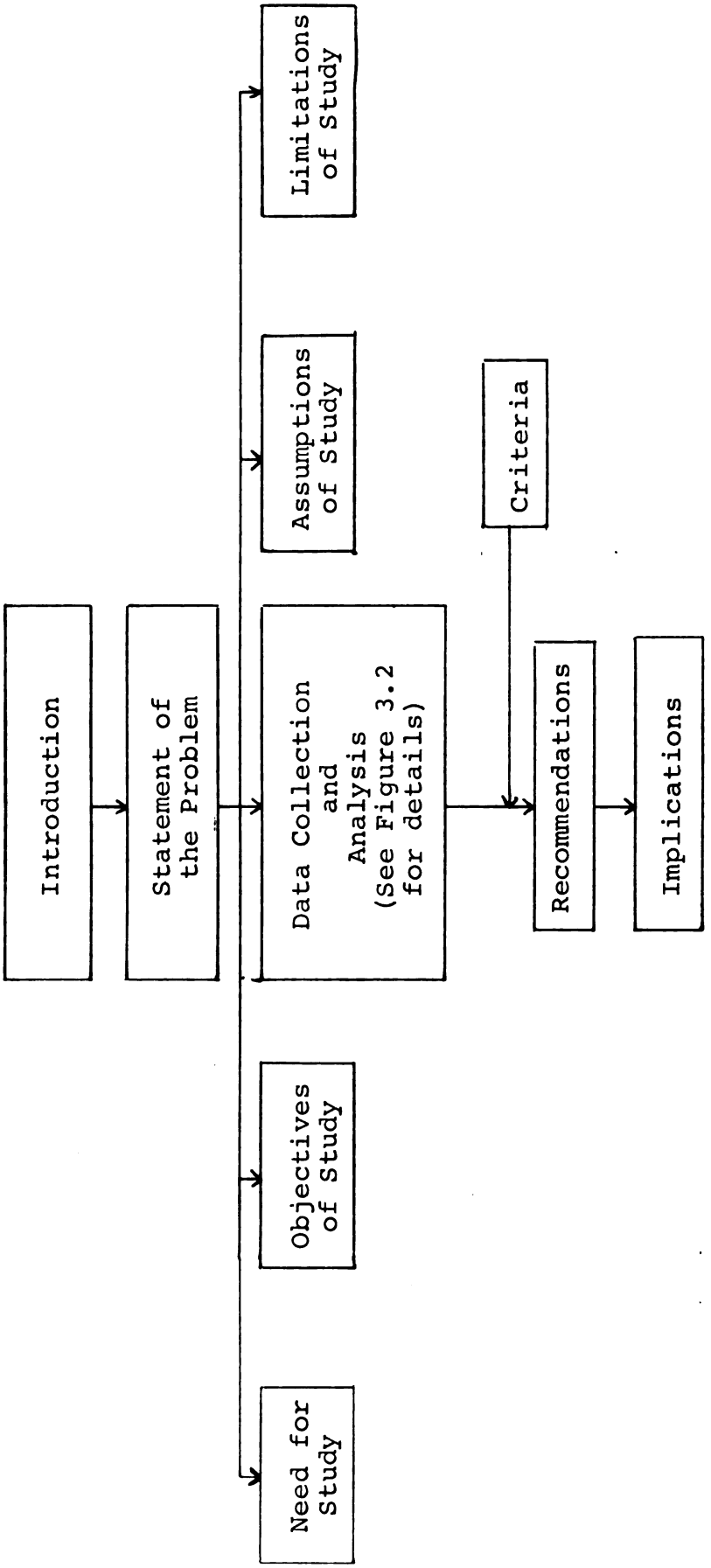

Figure 3.1.--Overall Methodology of the Study.

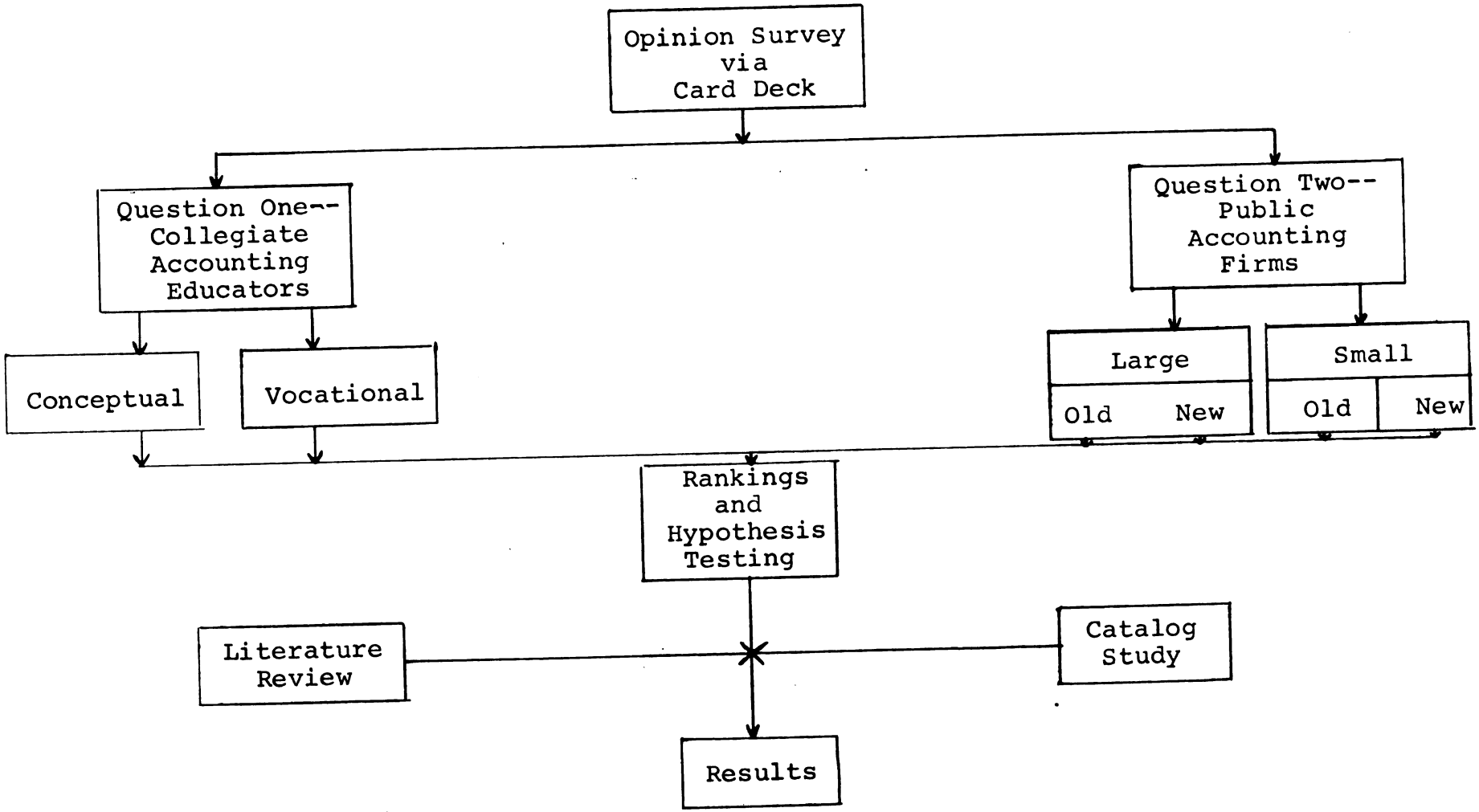

Figure 3.2.--Data Collection and Analysis.

a baccalaureate degree with a major in accounting, concerning the most appropriate education for the professional growth of persons entering public accounting? The hypothesis to be tested was that there is no difference between the topic emphasis recommendations for the professional growth of beginning public accountants made by accounting educators from conceptually oriented and those recommendations made by educators from vocationally oriented colleges in the state of Michigan. The alternative hypothesis was that there is a difference in the topic emphasis recommendations.

A. Methodology for Question One.

A sample of educators was taken from the accounting faculties of the various colleges and universities that have offered an accounting major as part of a baccalaureate program since 1958. In 1971, there were sixteen schools that fitted this criterian.[1,2] The names of the members of the full-time accounting faculty of these sixteen schools were gathered from current catalogs and from the three major textbook publishers which service these schools.

To gather the opinions of these accounting educators, a card deck mechanism similar to that used in Horizons for a Profession was constructed.[3,4] The card deck mechanism consisted of preparing a deck of I.B.M. cards that contained an instruction card, a data card and a series of course topic cards. Each topic card had a

course title and a brief description of that course printed on that card. Appendix A provides an illustration of a data card, an instruction card and a course topic card. Originally, 55 topics were proposed with the course titles and descriptions selected from a review of college catalogs and the topics utilized in Horizons.[5] These titles and descriptions were reviewed by a panel of individuals composed of accounting academicians from several schools and accounting practitioners and fellow doctoral candidates who had either teaching experience or public accounting experience. The panel was asked to review the card deck for the aptness of the topics and their related descriptions in relation to the objectives of this research, phrasing of the descriptions, redundancy of the topics and/or descriptions and any other pertinent factors. The panel's comments were analyzed and the card deck was reduced to 47 topics and the descriptions rewritten where necessary. The descriptions for each topic were made as brief and yet as explicit as possible so that the respondents would not spend an excessive amount of time reading the descriptions and subsequently losing interest in ranking the topics. Table 3.1 gives an alphabetical listing of the topics finally selected.

The primary advantage of using the card deck versus a questionnaire is that such a technique allows the extremes to be considered by ranking all of the courses from most to least important in the respondent's opinion. A second

TABLE 3.1.--Course Topics in Alphabetical Order.

1.	Accounting pracice and procedure (intermediate)
2.	Accounting practice and procedure (advanced)
3.	Accounting theory
4.	Algebra
5.	Auditing practice
6.	Auditing principles
7.	Business and industrial management--introductory
8.	Business and industrial management--advanced
9.	Business law
10.	Business mathematics
11.	Calculus
12.	Corporation finance--introductory
13.	Corporation finance--advanced
14.	Cost accounting--introductory
15.	Cost accounting--advanced
16.	Data processing--introductory
17.	Data processing--advanced
18.	Differential equations
19.	Economics--introductory
20.	Economics--advanced
21.	English literature
22.	Finite math for business
23.	Geometry, trigonometry
24.	Humanities--introductory
25.	Humanities--advanced
26.	International economics
27.	Law
28.	Managerial accounting
29.	Managerial economics
30.	Marketing--introductory
31.	Marketing--advanced
32.	Money and banking--introductory
33.	Money and banking--advanced
34.	Natural science--introductory
35.	Natural science--advanced
36.	Operations research
37.	Personnel and labor relations
38.	Philosophy, logic
39.	Production--introductory
40.	Production--advanced
41.	Statistics--introductory
42.	Statistics--advanced
43.	Social science
44.	Tax--introductory
45.	Tax--advanced
46.	Work study
47.	Written and oral english

advantage is that the topic-description mechanism overcomes much of the problem of the recipient's interpretation of the question and the researcher's interpretation of the recipient's answer.

The results from the sample of accounting academicians from the sixteen schools were analyzed in the manner suggested by the first hypothesis. The schools were divided into conceptually and vocationally oriented accounting departments. To determine such a distinction between the departments an adaptation of a reputational ranking form was utilized.[6,7] Selected members from the sixteen departments of accounting were asked to classify the departments of accounting of the sixteen schools, exclusive of their own department, as either conceptually oriented, vocationally oriented or no opinion. Two members who had at least five years experience in that particular school were chosen from each department. It was assumed that within this five-year time span the member would have had contact with other schools of accounting in the state and would have formed an opinion as to the "type" of school this might be. The terms "conceptually" and "vocationally" oriented were defined for the respondents in the following manner:

> Conceptually oriented department: A conceptually oriented department is primarily concerned with the development of the student so he can deal with concepts not necessarily related to concrete situations. The department is secondarily concerned with the teaching of principles and methods of recording financial transactions.

> Vocationally oriented department: A vocationally oriented department is primarily concerned with teaching the principles, methods and related skills of the profession and secondarily with the conceptual relationships.

With the results of the reputational ranking a division of the schools into conceptually and vocationally oriented was made to provide the basis for testing the related hypothesis. From the total population of full-time accounting faculty a random sample was drawn equally from the vocationally and conceptually oriented schools. There were twenty randomly drawn from each type of school giving a total sample size of forty. The method of selecting the sample size will be discussed under the methodology for question two.

Each of the card decks was put in a random order and mailed to the prospective respondent along with a covering letter and a stamped, return envelope. Each prospective respondent was asked to (1) complete the data card, (2) read the instruction card, (3) arrange the cards in the order of importance to the professional growth of the beginning public accountant with the most important card on top, and (4) place the cards in the return envelope and mail to the researcher.

B. Limitations for Question One

The principal limitation of the methodology for Question One is in the selection of the course titles. Although an attempt was made to be as inclusive and as

representative as possible, it is recognized that not every possible course was included and as a result certain respondents might have felt that there was not enough selection in a given area.

A second limitation is in the method of selecting vocationally and conceptually oriented schools. Such a ranking technique leaves much to be desired in the way of sophistication yet, it is the only means available to make the needed distinction.

Opinion Survey: Question Two

What are the opinions of practicing public accountants in the state of Michigan concerning the most appropriate education for the professional growth of persons entering public accounting? The hypothesis to be tested is that there is no difference in the topic emphasis recommendations for the professional growth of beginning public accountants by public accountants in large and small firms in the state of Michigan. The alternative hypothesis is that there is a difference in topic emphasis recommendations for the professional growth of beginning public accountants in large and small firms in the state of Michigan.

Four secondary hypotheses were tested using the data from the practicing public accountant section:

H_o^1: There is no difference in topic emphasis recommendations for beginning public accountants by old Certified Public Accountants (C.P.A.s) in large and small firms.

H_o^2: There is no difference in topic emphasis recommendations for beginning public accountants by new C.P.A.s in large and small firms.

H_o^3: There is no difference in topic emphasis recommendations for beginning public accountants by old and new C.P.A.s in large firms.

H_o^4: There is no difference in topic emphasis recommendations for beginning public accountants by old and new C.P.A.s in small firms.

Table 3.2 shows the secondary hypotheses in a four-category classification.

TABLE 3.2.--Four-Way Classification of Practitioners by Age and Firm Size.

	Age of Practitioner	
Firm Size	CPA--Old Large Firm	CPA--New Large Firm
	CPA--Old Small Firm	CPA--New Small Firm

A. Methodology for Question Two

Individuals who fit into the category "practicing public accountant registered by the state of Michigan" were selected from a master list containing the names, addresses and certificate numbers of such persons, both in and out of the state, who hold a Michigan C.P.A. certificate.

This master list was the 1970 Register of the Board of Accountancy of the State of Michigan.[8]

From this total population of registered C.P.A.s, four subpopulations were derived. These four subpopulations corresponded to the four way classification illustrated by Table 2.2. To determine the firms to be included in the large firm population a list of those firms registered to practice in Michigan for the year 1970 was prepared. This list was circulated to accounting faculty members and public accountants who were asked to select the ten largest firms practicing in the state. From the responses a clear cut distinction was made between large and small firms. Appendix B lists the ten largest firms and Appendix C lists those firms in the small category.

The age of the respondent was determined by their certificate number. To be classified as an "old" C.P.A., the year 1955 was chosen as the cut-off date. The reason for selecting 1955 as the cut off date was that this period of fifteen years was deemed a sufficient amount of time for opinions on accounting education to solidify. Those whose certificate numbers were issued prior to December 31, 1955, were placed in the "old" category. Those whose certificate numbers were issued after January 1, 1956, were placed in the "new" C.P.A. category.

By knowing the firm size and the age of the C.P.A.s the four subpopulations were determined. Care was taken to

insure that each person who was eligible was included in one of these four subpopulations. Table 3.3 illustrates the classification cells and the populations (in parenthesis) of each cell.

TABLE 3.3.--Four-Way Classification of Practitioners by Age and Firm Size and the Total Population of Each Cell.

	Age of Practitioner	
Firm Size	CPA--Old Large Firm (202)	CPA--New Large Firm (1,441)
	CPA--Old Small Firm (312)	CPA--New Small Firm (546)

To determine the sample size for both the accounting and the educator respondents, several consultations were held with members of the Office of Research Consultation at Michigan State University. The principal constraint that limited the overall sample size was economic. The cost of this research, printing the card decks, mailing, etc., were borne by the researcher and this limited the total number of decks to 200. Forty individuals were assigned to each cell for the accounting respondents for a total of 160 and the

remaining forty were assigned to the educators. A fixed number per cell was chosen for two primary reasons. First, it reduced the weight exerted by the C.P.A.--New, Large Firm cell which contained about 58 per cent of the total C.P.A. population. Second, equal sized samples are required in certain of the statistical tests used in the analysis.

Each member of the four subgroups was sent a card deck in exactly the same manner and on the same date as the sample group of educators. There were 200 card decks mailed. Forty were sent to the sample members of the academic group and 160 were sent to the practitioner sample group. The card decks were mailed using first class postage and included a covering letter and a first class return envelope. All of these decks were mailed from East Lansing, Michigan on June 21, 1971. Two and one-half weeks later a follow-up letter was mailed to the sample group members requesting those recipients who had not responded to do so and thanking those who has responded. A copy of the original letter and the second request letter are shown in Appendix C and D. The cutoff date for inclusion in the study was July 31, 1971. Prior to this date a third attempt was made to contact either by telephone or by letter those who had not responded to determine if there would be any additional returns after July 31, 1971. This third attempt did little to stimulate any non-respondents to return their card deck. Table 3.4 illustrates the

responses by each sample group and the reason for some of the non-usable responses. As noted in Table 3.4, there was an overall return rate of 65 per cent. Due to retirements, the usable return rate was 63.5 per cent.

B. Limitations for Question Two

The first limitation that is recognized is in the sample size. As stated before, due to the economic considerations involved only a sample of 160 was taken. The second limitation relates to the card deck that was sent to the practitioners. Since this was the identical card deck that was sent to the academicians, the same limitations about course titles apply that were detailed for Question One.

Analysis of Opinion Survey

A. Classification of Respondent

The responses to Questions One and Two were analyzed together since the same statistical techniques were used for both groups of respondents. The data card is the principal source for determining which category of respondent arranged the deck and returned it plus other pertinent items of information. Prior to the mailing of the cards, each topic was assigned a number corresponding to the topic title. This number was keypunched into each card so that topic identification by the computer could be accomplished. The topics and their corresponding identification numbers

TABLE 3.4.--Responses of the Sample Groups.

Respondent Classifications	Educ. Concep.		Educ. Vocat.		CPA Large,Old		CPA Large,Old		CPA Small,Old		CPA Small,Old	
Number and Percentage	n	%	n	%	n	%	n	%	n	%	n	%
Sample Size	20	100%	20	100%	40	100%	40	100%	40	100%	40	100%
Usable Returns	12	60	12	60	28	70	24	60	24	60	27	67½
Reasons for nonuability												
Non-deliverable	1	5	1	5	1	2½	1	2½	1	2½	-	-
Retired	-	-	-	-	2	5	1	2½	1	2½	-	-
Not Returned	7	35	7	35	9	22½	14	35	14	35	13	32½

Overall return rate - 65% of sample.

Usable return rate - 63½% of sample.

are shown in Table 3.1. Each of the returned card decks was given an identifying number and the returned cards were numbered and keypunched sequentially so that the order of respondent ranking was not lost. The rankings and additional information were keypunched into new data cards. The additional information is as follows:

1. C.P.A.: Old or New
2. C.P.A.: Large or Small
3. C.P.A.: Duties--Audit, Taxation, Management Services, Other.
4. C.P.A.: Administrative Level--Partner, Manager, Senior, Junior, Other.
5. C.P.A.: Education--Associate in Arts, Bachelors, Masters, LLB, Doctorate.
6. C.P.A.: Years of Experience.
7. Educator: Vocational or Conceptual
8. Educator: Years of Experience in Teaching
9. Educator: C.P.A.--yes or no
10. Educator: Education--Associate in Arts, Bachelors, Masters, LLB, Doctorate.
11. Educator: Primary Accounting Courses Taught--Auditing Theory, Introductory, Intermediate, Advanced, Taxation, Cost, Managerial, Other.
12. Educator: Time teaching graduate courses (per cent of the classroom hours). Time teaching undergraduate courses (per cent of the classroom hours).

Although all of this information was not used in this study, it is available and classified for future use.

There are four major categories of respondent which were used to test the primary hypotheses. These categories are:

1. Accounting Educator--Conceptual.
2. Accounting Educator--Vocational.
3. Public Accountant--Large firm, all respondents.
4. Public Accountant--Small firm, all respondents.

The latter two categories of public accountants are broken down into four subcategories corresponding to the classifications illustrated in Tables 3.2 and 3.3. These four sub-classifications were used to test the four secondary hypotheses and are as follows:

1. Public Accountant, Large Firm--New.
2. Public Accountant, Large Firm--Old.
3. Public Accountant, Small Firm--New.
4. Public Accountant, Small Firm--Old.

In addition, the educators added another dimension and when they were included for comparison with the accountants there were twenty-one combinations of respondents that were examined.

B. Analysis of the Data--Introduction

The analysis of the data will be discussed in three sections. Section One will discuss a composite ranking of all respondents and the statistical tests used to measure the association between the different categories of respondents. Section Two will discuss the comparative rankings by the category of respondent and subject class--general education, general business, accounting, quantitative and economics. In addition, certain statistical

tests were employed to establish the association of topics with the respondents. Section Three will discuss tests of the two major hypotheses stated on pages 46 and 54.

C. Analysis of the Data--Section One

Section One of the analysis was a composite rank of the responses of all respondents. Initially the respondents were compiled by subject, rank, i.e., the number of respondents ranking a given subject first, the number ranking it second, etc. were tallied. For each subject three measures were calculated: the median (that rank above which and below which an equal number of respondents ranked that subject); the 25th percentile (the rank above which 75 per cent of the respondents ranked the subject) and the 75th percentile (the rank below which 75 per cent of the respondents ranked the subject). The subjects were ranked in median order and in case of a tie the one with the smallest inter-quartile range were ranked ahead of the other. The rank spread is the difference between the interquartile ranges and is shown in the right hand column of Figure 3.3. This figure is an illustrative format for this ranking technique.

Certain nonparametric statistical tests were performed on this data. The reasosons for selecting the nonparametric statistical tests are discussed in the following paragraphs.

A common problem for statistical inference is to determine in terms of probability, whether observed

Median Order Ranking	Subject Title	Interquartile Range 25%	50%	75%	Spread
4	Auditing Principles	5	10	17	13

Figure 3.3.--An Illustration of Ranking by All Respondents in Descending Order of Importance.

differences between two samples signify that the populations sampled are themselves really different. Whenever two groups of scores are collected by random methods it is likely that the scores differ to some extent. Differences occur simply because of operations of chance. How then can it be determined whether the observed differences are merely due to chance or not? The procedures of statistical inference enable the researcher to determine, in terms of probability, whether the observed difference is within the range which could easily occur by chance or whether it is so large that it signifies that the two samples came from two different populations.

The first techniques of modern statistical inference which appeared were those that made many assumptions about the nature of the populations from which the scores were drawn. These population characteristics are "parameters" thus giving rise to the techniques called

parametric statistics. For example, a technique of inference may be based on the assumption that the scores were drawn from a normally distributed population. Or, the techniques of inference may be based on the assumption that both sets of scores were drawn from populations having the same variance.

More recently techniques of inference have developed which do not make numerous or stringent assumptions about parameters. These newer, nonparametric, techniques result in conclusions which require fewer qualifications. By using these techniques one may say that "regardless of the shape of the population(s) we may conclude that . . ." Non parametric tests were utilized in this research.

The advantages of using nonparametric statistical tests are summarized as follows:

1. Probability statements obtaining from most nonparametric statistical tests are exact probabilities, regardless of the shape of the population distribution from which the random sample was drawn.

2. If samples are small as n = 6 are used, there is no alternative to using a nonparametric statistical test unless the nature of the population distribution is exactly known.

3. There are suitable nonparametric statistical tests for treating samples made up of observations from several different populations. None of the parametric

tests can handle such data without making certain unrealistic assumptions.

4. Nonparametric tests are available to treat data which are inherently in ranks as well as data whose numerical scores seem to have the strength of ranks. That is, the researcher may only be able to say of his subjects that one has more or less of the characteristic than another, without being able to say how much more or less.

5. Non parametric methods are available to treat data which are simply classificatory, i.e., are measured in a nominal scale.[9]

The Spearman rank correlation coefficient (rho or r_s) will be used to test the measure of association between the different categories of respondent, i.e., large and small firms, old and new C.P.A.s, vocational and conceptual educators, etc. The actual calculations will utilize the Computer Institute for Social Science Research (C.I.S.S.R.) routines at the Michigan State University.[10] The C.I.S.S.R. routines are patterned after the formulations presented in Nonparametric Statistics for the Behavioral Sciences by Sidney Siegel.[11] The formulation for the Spearman rank correlation coefficient is as follows:

$$r_s = 1 - \frac{6 \sum_{i=1}^{N} d_i^2}{N^3 - N}$$

where d_i = the difference between the two rankings

N = the number of subjects.

Occasionally, two or more subjects will receive the same score on the same variable. When tied scores occur, each of them is assigned the average of the ranks which would have been assigned had no ties occurred. If the proportion of ties is not large, their effect on r_s is negligible and the above formula may still be used for computation purposes.[11] However, if the proportion of ties is significantly large, then a correction factor must be incorporated in the calculation of r_s. This formulation is as follows:

$$r_s = \frac{\sum_{i=1}^{N} x_i^2 + \sum_{i=1}^{N} y_i^2 - \sum_{i=1}^{N} d_i^2}{2 \sqrt{\sum x_i^2 \sum y_i^2}}$$

where $$\sum_{i=1}^{N} x_i^2 = \frac{N^3 - N - \sum T_x}{12}$$

$$\sum_{i=1}^{N} y_i^2 = \frac{N^3 - N - \sum T_y}{12}$$

$\sum T_y$ or $\sum T_x$ indicates the sum of the values of T (ties) for the x and y groups of observations;

N = the number of subjects;

d_i = the difference between the two rankings.[13]

where there is a significant number of ties the effect is to inflate the r_s. The C.I.S.S.R. program uses the above formulation so that the effect of ties is automatically calculated.[14]

If the subjects whose rankings were used in computing r_s were randomly drawn from some population, those scores may be used to determine whether the two variables are associated in the population. In other words, the null hypotheses that these variables are not associated in the population and that the observed value of r_s differs only from zero by chance, may be tested.

In this research N is larger than ten. Therefore, the null hypothesis may be tested by using the following formulation:

$$t = r_s \frac{N - 2}{I - r_s^2}$$

where N - the number of subjects

r_s = Spearman rank correlation coefficient

t = Student's t.

Thus, for N large, the value defined by this formula is distributed as a Student's t with degrees of freedom (df) equal to N - 2, i.e., df = N - 2.[15] The associated probability under the null hypothesis of any value as extreme as an observed value of r_s may be determined by computing the t associated with that value from the above

formula and then referring to the appropriate table of values of t found in most standard statistical texts.

D. Analysis of the Data--Section Two

Section Two was the comparative rankings by category of respondent. The eight categories of respondent, as outlined on page 54 were compared by topic class. There are five topic classes: general education, general business, quantitative, economics and accounting. The subjects under each of the topic classes are listed in Table 3.5 and the format of the respondent categories and the associated rankings is shown in Figure 3.4. By using the device illustrated by Figure 3.4 it will be possible to visualize the correlation, or lack of correlation, that exists through the various categories of respondent.

To be more precise in establishing the association of topics with respondents, the Kendall coefficient of concordance (W) will be used.[16,17] When there are k sets of rankings, the association among them may be established by using the Kendall coefficient of concordance. To compute the value of W the following formula is used:

$$W = \frac{s}{1/12\ k^2\ (N^3 - N)}$$

where s = the sum of squares of the observed deviations from the mean of R_j, that is, $S = \left(R_j - \frac{\sum R_j}{N}\right)^2$ where R_j is the

TABLE 3.5.--Topic Headings and Related Subjects.

General Education

- English literature
- Humanities--introductory
- Humanities--advanced
- Natural science--introductory
- Natural science--advanced
- Philosophy, logic
- Social science
- Written and oral english

General Business

- Business and industrial management--introductory
- Business and industrial management--advanced
- Business law
- Corporation finance--introductory
- Corporation finance--advanced
- Data processing--introductory
- Data processing--advanced
- Law
- Marketing--introductory
- Marketing--advanced
- Operations research
- Personnel and labor relations
- Production--introductory
- Production--advanced

Economics

- Economics--introductory
- Economics--advanced
- International economics
- Managerial economics
- Money and banking--introductory
- Money and banking--advanced

Mathematics

- Algebra
- Business mathematics
- Calculus, differential and integral
- Differential mathematics for business
- Finite mathematics for business
- Geometry, trigonometry
- Statistics and probability introductory
- Statistics and probability advanced

Accounting

- Accounting practice and procedures--introductory
- Accounting practice and procedures--advanced
- Accounting theory, principles and postulates
- Auditing practice and procedure
- Auditing principles, standards ethics
- Cost accounting--introductory
- Cost accounting--advanced
- Taxation--introductory
- Taxation--advanced
- Managerial accounting
- Work study

Subject	All Resp.		Practitioners						Educators	
	Rank	Spread	Large	Small	Large New	Small New	Large Old	Small Old	Conc.	Voc.
Gen. Educ.										
Eng. Lit.										
Gen. Bus.										
EDP										
Econ.										
Prin.										
Mathematics										
Algebra										
Accounting										
Aud. Prin.	4	13	3	4	4	4	5	4	9	4

Note: The interpretation of this chart would be that all the respondents ranked Auditing Principles fourth and that the Spread refers to the interquartile range illustrated in Figure 3.3. In the case of this illustration the spread between the twenty-fifth and seventy-fifth percentiles was from five to seventeen or a spread of thirteen.

Figure 3.4.--An Illustration of Ranking by Major Classes of Respondent.

sum of the ranks in each column or a k times N table

k = number of sets of rankings, e.g., the number of judges

N = number of objects to be ranked

$1/12\ k^2\ (N^3 - N)$ = maximum possible sum of the squared deviations.[18]

When tied observations happen, the observations are assigned the average of the ranks they would have been assigned had no ties happened. Tied ranks have the effect of depressing the value of W. With only a few tied observations, the effect is negligible but if the proportion of ties is large, then a correction factor must be included in the formula for computing W.

The formula adjusted for ties of a significant number would be:

$$W = \frac{S}{1/12\ k^2\ (N^3 - N) - k\sum_T T}$$

where $\sum_T T$ directs one to sum the values of T for all the k rankings of $T = \frac{\sum (t^3 - t)}{12}$.[19]

Due to the distinct possibility of ties, the calculations of W were made using the above formulation in the C.I.S.S.R. routines.

A high or significant value of W may be interpreted as meaning that the observers are applying essentially the same standard in ranking the N objects. However, a high or significant value does not mean that the orderings are accurate. It is possible that a variety of observers can agree in ordering subjects because they all employ the wrong criterion.

The significance of any observed value of W is tested by determining the probability associated with the occurrance under the null hypothesis of a value as large as the s with which it is associated. When N is larger than 7, the expression given by the following formula is approximately distributed as chi square (χ^2) with degrees of freedom (df) equal to N - 1.

$$\chi^2 = \frac{s}{1/12\ k\ N(N + 1)}$$

where k, N and s are defined in the same manner as the variables of the Kendall coefficient of concordance.[20] In other words, the probability associated with the occurrance under the null hypothesis of any value as large as an observed W may be determined by finding chi square with the preceding formula and then determining the probability associated with so large a value of chi square by referring to a table of critical values of chi square. If the value of chi square equals or exceeds that shown in the table of values for a particular level of significance and a

particular value of degrees of freedom equal to N - 1, then the null hypothesis that the k rankings are unrelated may be rejected at that level of significance.

The findings of Sections One and Two will not be completely comparable to the results found in Horizons. A precise comparison cannot be made for four reasons. First, 47 topic titles were used in this research whereas 52 topic titles were used in Horizons. Second, the descriptions accompanying the titles of this research do not correspond to those used in Horizons. Third, the sample for this research did not include government accountants, executives, or practitioner specialists. Fourth, the objectives of Horizons and the objectives for this research are not the same. However, where possible, use will be made of the results from Horizons educator and C.P.A. categories to note any similarities or differences.

E. Analysis of the Data--Section Three

The third part of the analysis tested the four major hypotheses. These hypotheses and the related alternative hypotheses can be stated as follows:

H_0^1: There is no difference in the subject emphasis recommendations by public accountants in large firms and small firms in Michigan.

H_1^1: Large firm respondents rank subjects in a different manner than small firm respondents.

H_0^2: There is no difference in the subject emphasis recommendations by age groups of public accountants in Michigan.

H_1^2: Older accountants rank subjects in a different manner than younger respondents.

H_0^3: There is no difference in the subject emphasis recommendations by accounting educators from conceptually oriented and vocationally oriented colleges and universities in Michigan.

H_1^3: Conceptually oriented educators rank subjects in a different manner than vocationally oriented educators.

H_0^4: There is no difference in the subject emphasis recommendations by accounting educators and public accountants in Michigan.

H_1^4: Accounting respondents rank subjects in a different manner than accounting educators.

The statistic chosen to test this data was the Kolmogorov-Smirnov two sample test.[21] This is a test of whether two independent samples have been drawn from the same population (or from populations with the same distribution). The test is concerned with the agreement between two cumulative frequency distributions. If the two samples have been in fact drawn from the same population distributions, then the cumulative distributions of the two samples may be expected to be fairly close to each other. If these two sample distributions are "too far apart" at any point, this suggests that the samples came from different populations.[22] Therefore, a large deviation between the two sample cumulative distributions is evidence for rejecting the hypothesis of "no difference,"

i.e., the null hypotheses. As in previous sections, the appropriate C.I.S.S.R. routine was used.[23]

To apply the Kolmogorov-Smirnov two sample test, a cumulative frequency distribution is prepared for each sample of observations using the same intervals for both distributions. For each interval, then, one step function is subtracted from the other thus focusing on the largest of these observed deviations. For the two sample test the test may be stated as:

$$D = \text{maximum} \left[S_{n_1}(X) - S_{n_2}(X) \right]$$

for the one tailed test, and

$$D = \text{maximum} \left| S_{n_1}(X) - S_{n_2}(X) \right|$$

for the two-tailed test.[24]

The terms of these formulations are defined as follows:

$S_{n_1}(X)$ = the observed cumulative step function of one of the samples, that is, $S_{n_1}(X) = K/n_1$ where K = the number of scores equal to or less than X.

$S_{n_2}(X)$ = the observed cumulative step function of the other sample, that is, $S_{n_2}(X) = K/n_2$.

D = the difference between these two step functions.

The one-tailed test is used to decide whether or not the values of the population from which one of the

samples was drawn are systematically larger than the values of the population from which the other sample was drawn. The two-tailed test is sensitive to any kind of difference in the distribution from which the two samples were drawn. With the one-tailed test, the maximum value of D in the predicted direction is calculated and that for a two-tailed test the maximum absolute value of D is calculated.[25]

Since the data for this research necessitated using the small sample technique, the following paragraph outlines the techniques that were followed. When $n_1 = n_2$, and when both n_1 and n_2 are 40 or less, the null hypothesis may be tested by using Table L in Siegel.[26] The body of this table gives various values of K_D, which is defined as the numerator of the largest difference between the two cumulative distributions for various N values. By knowing $n_1 = n_2$ which is equal to N, and calculating K_D, the researcher is able to accept or reject the null hypothesis at a given level of significance.

A companion program in the C.I.S.S.R. routines for the Kolmogorov-Smirnov test can be utilized to print plottings of the cumulative distributions for each of the major groups being tested.[27] These plottings will provide a visual means of comparing the rankings by each of the eight groups for each of the 47 topics. The observed distribution is plotted along with 10 per cent, 5 per cent, and 1 per cent confidence limits. These plottings will

allow not only a direct visual comparison among groups related by size and age but it will also allow a cross comparison among groups. For instance, the cumulative frequencies of the large-old practitioners can be compared to the conceptually oriented school or the large-new practitioner can be compared to the small-old practitioner.

Catalog Study and Literature Review

To determine the changes in curricula of the schools involved in the study, a review of the pertinent sections of college catalogs was undertaken. The curricula changes were classified into five areas corresponding to the major topic headings shown in Table 3.5.

There are 91 institutions of higher learning in the state of Michigan.[28,29] Of this number, 16 have offered either a major or concentration in accounting as part of a baccalaureate degree since 1958. Appendix F lists these institutions. These 16 institutions were reviewed for curricula changes over the academic years 1958-59, 1964-65 and 1970-71. These three time periods were chosen as the representative periods over which changes in curricula composition would have taken place due to both internal and external forces in the academic area. It was assumed that the external forces could be the various studies and reports by interested groups, regulatory agencies of the government, and research by groups outside of the business-accounting realm. Internal

forces, perhaps more than the external forces influence curricula change. These internal forces may be changes in faculty composition or departmental administration.

To obtain the data from the catalogs of the 16 institutions, letters were sent to the registrars of the respective institutions requesting a copy of their catalog for each of the three academic years in the study. Where a catalog was not available for distribution, the pertinent sections were reproduced and mailed to the researcher. For each school the data were assembled on a worksheet similar to that illustrated by Figure 3.5. In each of the cells the maximum credits applicable to that cell were calculated. The accounting cell also listed the courses that were available to the accounting major. From these worksheets calculations were made showing the changes, if any, for each of the schools in the study over the three time periods. From this data a typical or average curricula was calculated for each of these three time periods. The 1970-1971 typical curricula then served as the basis for comparison with other studies and committee reports. The studies and committee reports utilized for these comparisons were as follows:

1. Ford and Carnegie Reports
2. American Accounting Association
    a. Standards Rating Committee
    b. Committee on Scope of Four Year Accounting Major (Recommendations and Findings)

Year	General Education	General Business	Accounting	Quantitative	Economics	Free Electives	Total Semester Hours

Figure 3.5.--Worksheet for College Catalog Review.

c. Task Committee on Standards of Accounting Institutions
d. Committee to Compile a Revised Statement of Educational Policy
e. Committee on Courses and Curricula: Accounting Courses for Accounting Majors

3. American Institute of Certified Public Accountants

a. Commission on Standards of Education and Experience
b. Horizons for a Profession
c. Report of the Committee on Education and Experience Requirements for CPAs (The Beamer Report)

4. American Association of Collegiate Schools of Business

There are certain limitations to the Section Four analysis. First, not all the topics listed in the college catalogs are taught. Some topics appear in the catalog because of faculty resistence to course reductions in their particular area of specialization. Second, catalog titles and descriptions offer a rather wide range of coverage for the individual instructor and the instructor is frequently left to decide the extent of such coverage. Thus, teacher emphasis can never be cataloged. Third, a common mold that all institutions will fit completely does not exist. Therefore, any comparability is reduced. However, in the absence of data to the contrary, some comparability may be assumed.

Preparation of the Recommendations

Provisions of education for the beginning public accountant that would maximize his future growth as a

professional would rely upon the data collection and analysis sections. These recommendations would be based on the data collection and analysis sections and a set of evaluative criteria. The purpose of the criteria was to give the researcher an authoritative base upon which to build the recommendations. These criteria were derived from the Report of the 1964-67 American Accounting Accociation Committee to Compile a Revised Statement of Educational Policy and the Horizons for a Profession.[30,31] These two sources were chosen because they represent the most up-to-date, complete studies available and are representative of both groups concerned with the problems of accounting education--the academician and the practitioner. This frame of reference is outlined in detail in Chapter VI--Recommendations.

Specifically, to derive the recommendations the following steps were taken. First, the data from the "Analysis of Opinion Survey" section of this chapter were reviewed. Analysis of the Data--Section One provided the overall opinion rankings of the practitioners and the academicians along with the related statistical tests. Analysis of the Data--Section Two analyzed the data by type of respondent and topic area. Statistical tests were also performed on this data to test the related hypotheses. Analysis of the Data--Section Three tested the major hypotheses that there were no differences in topic emphasis

recommendations by either accountants or educator respondents.

Second, the determination of where we are now in our education for accountants required analysis of the college catalogs from the 16 institutions involved in this research. The catalog survey enabled a "typical" accounting program to be devised and also gave a basis of comparison with other studies.

Third, the literature on accounting education makes it possible to estimate where we should be in our education for the growth of professional accountants.

These three steps generated the raw material from which the recommendations were made. An additional input, however, was a set of evaluative criteria. As stated before, the criteria provided an authoritative base upon which the recommendations were built. It is not intended to imply that the criteria are the ultimate measure and that the recommendations were prepared solely on the basis of the criteria. This would ignore the results of the research completely. Rather, the criteria acted as a reference point for the preparation of the recommendations.

FOOTNOTES--CHAPTER III

[1]Education Directory: Part 3--Higher Education (Washington, D.C.: U.S. Government Printing Office, 1969-70), pp. 189-203.

[2]Max Russell, Editorial Director, The College Blue Book 1969-70: 13th Edition (New York: C.C.M. Information Corporation, 1969), pp. 2-3.

[3]Roy and MacNeill, Horizons for a Profession, p. 173.

[4]Correspondence with the American Institute of Certified Public Accountants.

[5]Roy and MacNeill, Horizons for a Profession, p. 173.

[6]John K. Hemphill, "Leader Behavior Associated with the Administrative Reputation of College Departments," Journal of Educational Psychology, 46 (November, 1955), p. 389.

[7]Ralph M. Stogdill and Alvin E. Coons (eds.), Leader Behavior, Its Description and Measurement: Research Monograph #88 (Columbus, Ohio: The Ohio State University, Bureau of Business Research, 1957).

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[9]Sidney Siegel, Nonparametric Statistics for Behavioral Sciences (New York: McGraw-Hill Book Company, Inc., 1956), pp. 32-33.

[10]Computer Institute for Social Science Research, Technical Report No. 47: Rank Correlation Coefficients (East Lansing, Michigan: The Michigan State University, 1967), pp. 2-3.

[11]Siegel, Nonparametric Statistics . . ., pp. 202-213.

[12]Ibid., p. 206.

[13]Ibid., pp. 207-210.

[14]Computer Institute, Technical Report No. 47, pp. 4-5.

[15]Siegel, Nonparametric Statistics . . ., pp. 210-213.

[16]Ibid., pp. 229-239.

[17]Computer Institute, Technical Report No. 47, pp. 4-5..

[18]Siegel, Nonparametric Statistics . . ., p. 221.

[19]Ibid., pp. 233-235.

[20]Ibid., pp. 236-237.

[21]Ibid., p. 127.

[22]Ibid., p. 128.

[23]Computer Institute for Social Science Research, Technical Report No. 44, Nonparametric Measures of Randomness and Goodness of Fit: Kolmogorov-Smirnov and Runs Tests (East Lansing, Michigan: The Michigan State University, 1967), pp. 6-9.

[24]Siegel, Nonparametric Statistics . . ., p. 128.

[25]Ibid., pp. 128-129.

[26]Ibid., p. 278.

[27]Computer Institute for Social Science Research, Technical Report No. 44.2: Printed Plots of Cumulative Distributions and Kolmogorov Confidence Intervals (East Lansing, Michigan: The Michigan State University, 1967), pp. 1-3.

[28]Education Directory: Part 3, pp. 189-203.

[29]Russell, The College Blue Book 1969-70, pp. 2-3.

[30]American Accounting Association, "Report of the Committee to Compile a Revised Statement of Educational Policy," pp. 76-87.

[31]Roy and MacNeil, Horizons for a Profession, pp. 191-267.

CHAPTER IV

RESULTS AND ANALYSIS OF OPINION SURVEY

Introduction

This chapter will detail the data gathered by the card ranking device from 127 respondents from the accounting profession and accounting academicians and the results of several statistical tests that were performed. The tests examined the rankings between various groups of respondents and among the respondents within the groups. In addition, the results of a certain amount of personal interviewing with some of these respondents will be reported and certain inferences will be drawn based on these interviews and the statistical tests.

Compilation of the Results

As outlined in Chapter III--Methodology, 200 card decks were sent to a sample group of accounting practitioners and accounting educators. One hundred thirty-six responded by returning the card decks of which 127 decks were usable and were analyzed by various statistical tests. Initially the results were compiled by rank, i.e., the number of respondents ranking a given subject first,

the number ranking it second, etc. For each subject, three points were calculated: the 25th percentile, the median, and the 75th percentile. The median is that rank above which and below which an equal number of respondents ranked that subject. The 25th percentile is the rank above which 75 per cent of the respondents ranked that subject and the 75th percentile is the rank below which 75 per cent of the respondents ranked the subject.

After determining the medians and interquartile ranges, the subjects were ranked in order of median values. On several occasions subjects had the same median value. When this occurred the subjects were ranked according to the spread of the interquartile range, i.e., that median value with the smaller interquartile range was ranked above an identical median value with a larger interquartile range. This range is shown as the righthand column in Table 4.1. As an illustration, the subject Introductory Statistics will demonstrate the method of interpreting the information found in Table 4.1. Of the 127 respondents, 63 placed the subject at or below the sixteenth rank; the other 63 placed it at or above the sixteenth rank. Therefore, sixteen is the median. One quarter of the 127 ranked the subject higher than eleventh; one quarter ranked it to a position below twenty-first. Therefore, the central half placed it womewhere between eleventh and twenty-first place, an interquartile range extending through the eleven ranks between these points.

TABLE 4.1.--Composite Rankings of All Respondents in Decreasing Order of Importance.

Median Rank	Subjects	Percentiles			Inter-quartile*
		25th	Median	75th	
1	Written and oral english	1	1	7	7
2	Natural science--introductory	2	4	8	7
3	Money and banking--advanced	2	4	9	8
4	Money and banking--introductory	4	9	16	13
5	Taxation--introductory	6	10	16	11
6	Work Study	6	11	17	12
7	Marketing--advanced	7	11	19	13
8	Statistics--advanced	5	11	18	14
9	Production--advanced	8	12	18	11
10	Personnel and labor relations	4	12	22	19
11	Social Science	5	13	21	17
12	Taxation--advanced	7	13	22	16
13	Production--introductory	10	14	19	10
14	Managerial economics	6	14	22	17
15	Statistics--introductory	11	16	21	11
16	Philosophy, logic	5	18	31	27
17	Marketing--introductory	7	19	31	25
18	Natural science--advanced	15	20	25	11
19	International economics	14	20	26	13

TABLE 4.1.--continued.

Median Rank	Subjects	Percentiles			Inter-quartile*
		25th	Median	75th	
20	Humanities--advanced	7	21	32	26
21	Operations research	14	21	28	15
22	Law	16	22	30	15
23	Managerial accounting	15	22	30	16
24	Humanities--introductory	8	23	36	28
25	English literature	14	24	30	17
26	Economics--introductory	18	25	31	14
27	Data processing--introductory	20	26	33	14
28	Geometry, trigonometry	17	28	34	18
29	Finite mathematics for business	22	29	34	13
30	Economics--advanced	22	30	34	13
31	Data processing--advanced	24	30	34	11
32	Cost accounting--advanced	16	31	43	28
33	Corporation finance--advanced	27	34	40	14
34	Corporation finance--introductory	26	34	41	16
35	Differential equations for business	26	35	44	19
36	Cost accounting--introductory	30	36	40	11
37	Calculus	32	37	43	12
38	Business management--advanced	31	38	43	13

TABLE 4.1.--continued.

Median Rank	Subjects	Percentiles			Inter-quartile*
		25th	Median	75th	
39	Business management--introductory	34	40	44	11
40	Business mathematics	41	41	45	15
41	Business law	35	41	46	12
42	Auditing principles	3	43	47	11
43	Accounting practice and procedure--intermediate	38	44	47	10
44	Auditing practice	39	44	47	9
45	Algebra	33	44	49	17
46	Accounting theory	34	45	51	18
47	Accounting practice and procedure--advanced	39	47	50	12

*This column shows the number of consecutive ranks included in the interquartile range.

Table 4.2 shows a comparison by respondent class and topic area. This table is broken down into the five topic areas--General Education, General Business, Economics, Mathematics and Accounting and ten respondent areas--vocational and conceptual educators, large, small, old and new public accountants plus various combinations of these accountants. The subjects are listed in alphabetical order under each topic heading along with the median ranking by each of the respondents. In addition, the overall median ranking from Table 4.1 is shown for comparison purposes.

Before going into the findings in detail it would be good to briefly review the primary objective of this study. As stated on page one of Chapter I, the primary objective will be to describe an educational program that prepares a person entering public accounting for growth in his profession. The primary objective is not to look at what is an adequate preparation to enter the profession, but rather once he is in the profession to determine what education a person should have had so he can grow as a professional. This review of the primary objective of the study was reintroduced as the findings might be considered at odds with those of Horizons. However, it must be kept in mind that Horizons was prepared to specify the common body of knowledge necessary for those entering the profession as C.P.A.s. This study attempts to go beyond that point of entrance into the profession to look at the C.P.A.'s future growth as a professional.

TABLE 4.2.--Comparative Rankings of Major Classes of Respondents.

Topic and Related Subjects	Respondent Classes										
		Educators		Practitioners							
	All	Voc.	Conc.	Large	Small	Old	New	Old Large	Old Small	New Large	New Small
General Education											
English Literature	25	36	32	21	26	22	25	18	26	21	16
Humanities--introductory	24	35	33	22	21	26	14	24	25	14	14
Humanities--advanced	20	23	17	23	17	15	24	25	5	24	24
Natural science--introductory	2	32	1	1	7	2	2	2	7	1	13
Natural science--advanced	18	29	9	14	18	13	17	11	17	19	18
Philosophy, logic	16	11	18	20	13	24	3	27	20	4	7
Social science	11	3	26	9	11	9	11	7	14	15	4
Written and oral english	1	1	4	2	1	1	5	3	2	20	1
General Business											
Business and industrial management--introductory	39	43	15	34	41	40	38	39	39	23	41
Business and industrial management--advanced	38	44	21	36	39	37	39	34	36	36	39
Business Law	41	37	35	40	40	39	41	38	41	40	40

TABLE 4.2.--continued.

Topic and Related Subjects	Respondent Classes										
		Educators		Practitioners							
	All	Voc.	Conc.	Large	Small	Old	New	Old Large	Old Small	New Large	New Small
Corporation finance--introductory	34	39	10	35	34	36	32	35	35	34	31
Corporation finance--advanced	33	17	38	39	30	31	40	31	29	41	33
Data processing--introductory	27	31	23	26	29	28	28	26	33	32	25
Data processing--advanced	31	7	29	30	37	35	31	32	40	27	35
Law	22	20	6	11	31	21	27	6	30	10	34
Marketing--introductory	17	15	45	17	22	20	16	23	21	12	20
Operations research	21	24	22	24	16	19	21	21	12	29	19
Personnel & labor relations	10	13	24	5	8	17	1	16	16	2	3
Production--introductory	13	14	5	18	6	11	13	13	10	17	8
Production--advanced	9	12	11	13	10	6	19	1	15	31	6
Economics											
Economics--introductory	26	27	31	33	23	29	20	28	23	22	21
Economics--advanced	30	34	41	32	27	34	22	40	28	11	28
Money and banking--introductory	4	10	3	12	2	8	4	9	6	13	2

TABLE 4.2.--continued.

Topic and Related Subjects	Respondent Classes										
		Educators		Practitioners							
	All	Voc.	Conc.	Large	Small	Old	New	Old Large	Old Small	New Large	New Small
Money and banking--advanced	3	5	8	3	5	5	8	12	3	6	12
International economics	19	22	28	15	15	14	12	15	19	18	11
Managerial economics	14	6	12	26	20	18	15	19	11	7	22
Mathematics											
Algebra	45	40	43	45	43	45	44	46	43	44	42
Business mathematics	40	33	34	41	38	42	35	44	37	33	36
Calculus, differential & integral	37	38	46	29	36	38	30	36	38	16	37
Differential mathematics for business	35	28	44	38	28	30	36	30	27	39	29
Finite mathematics for business	29	30	47	27	25	25	29	29	22	28	30
Geometry, trigonometry	28	25	25	28	33	27	37	14	31	38	32
Statistics and probability--introductory	15	21	19	6	12	10	7	22	13	5	17
Statistics and probability--advanced	8	8	16	10	19	16	10	20	9	3	16

TABLE 4.2.--continued.

Topic and Related Subjects	Respondent Classes										
		Educators		Practitioners							
	All	Voc.	Conc.	Large	Small	Old	New	Old Large	Old Small	New Large	New Small
Accounting											
Accounting practice and procedure--introductory	43	20	37	44	45	43	45	42	45	45	45
Accounting practice and procedure--advanced	47	45	42	46	47	46	47	45	46	47	47
Accounting theory	46	47	30	47	46	47	46	47	47	46	46
Auditing practice and procedure	44	46	20	43	44	44	42	43	44	42	43
Auditing principles, standards, ethics	42	42	27	42	42	41	43	41	42	43	44
Cost accounting--introductory	36	41	13	37	32	33	33	33	34	37	27
Cost accounting--advanced	32	16	39	31	35	32	34	28	32	35	38
Taxation--introductory	5	4	14	7	3	7	6	8	4	9	5
Taxation--advanced	12	9	24	4	14	12	9	5	18	8	9
Managerial accounting	23	19	20	25	24	23	26	17	24	26	23
Work study	6	2	2	19	4	3	23	10	1	30	10

Findings from Tables 4.1 and 4.2

The most outstanding result was the consistently high ranking of Written and Oral English by almost all respondents. It was in the first place position in almost all groups. This degree of concurrence was not achieved by any other subject. When observing the rankings it is important to look not only at the ranking but also at the interquartile range. One cannot meaningfully interpret the results by looking at the average rank of a subject without also considering whether the respondents agreed on the general level of its rank.

The most meaningful comparison would be to take the topic headings and the related courses and look at these as classified by the respondent categories. This is illustrated in Table 4.2 and the references in the next sections will be to this table.

General Education

The overall ranking of the eight subjects in the General Education area shows a wide range in the ranks from first to twenty-fifth. Certain differences exist between the educators and the practitioners. In particular, the vocationally oriented educators seem to differ rather radically from the overall median rankings in six out of the eight subjects whereas the conceptually oriented educators differ from the overall median ranking in only four out of eight subjects. It might be noted that all of the

general education subjects are ranked in roughly the upper half of the total list of subjects.

The most surprising result is the overall second place ranking of Naturay Science--Introductory. The data was rechecked for any possible errors. Since no errors were found it can only be surmised that sciences play an important part of the development of the thinking abilities of public accountants. Later in the chapter, some of the interview results tend to substantiate this ranking of natural science.

General Business

The subjects found in the general business area also exhibit a wide range of rankings from seventh to forty-first. The majority of the ranks with three exceptions would fit in the middle third of the overall rankings. It is also noted that the closeness of rankings between the introductory and advanced courses of Business and Industrial Management, Corporation Finance and Data Processing might be at odds with normal thinking. In four instances the advanced courses ranked above the introductory courses. This is possible as the directions given to the respondents did not prohibit such a ranking from being considered. Also, when the card decks were assembled, no advanced and introductory cards for a given subject were placed next to each other. A first approximation from such results would indicate that for the future growth of public accountants the respondents felt certain advanced courses

in business would be of benefit to them. When the rankings by class of respondent are observed it is noted that the vocationally oriented educator again differs rather markedly with his conceptually oriented colleagues and also with the rankings by most public accountants.

Economics

This area contained only six courses, which were widely separated in the rankings from third to thirtieth position. It is difficult to say why Money and Banking--Introductory and Advanced should rank in such a high position except that when these results are compared to the offerings of the colleges, these two courses are not in the usual requirements for an undergraduate major. Also, banking has become one of the controversial areas for accountants in the past few years and as a result, the practitioners ranked this subject relatively high. Perhaps this interest in banking and the lack of any course work in the typical undergraduate program might be considered as reasons for the high rank preference.

Mathematics

Typically, the more sophisticated mathematics courses were ranked in the bottom third of the total course list. The inclusion of statistics in the upper third of courses, with the advanced course ranked above the introductory, illustrates the growing importance statistics is to the future of public accounting. The educators were in

general agreement on the rankings with themselves, but differed significantly on several subjects with the public accountants.

Accounting

Of the eleven subjects reported in this category, seven were in the bottom third of the rankings. Only Taxation--Introductory and Advanced and Work Study were in the upper third of the rankings with Management Accounting approximately in the middle. A question might be raised as to why the accounting courses were ranked so low. Again, the purpose is to look at the future growth of the accountant and as such, the accounting respondents viewed the accounting subjects as skills already learned and for their growth would look to other areas. However, a question arises as to the reversal of this thinking when the tax courses, which were ranked fifth (Introductory) and twelfth (Advanced) are reviewed. It is difficult to say precisely why this happened. Of the 103 respondents in the accounting area, 26 were tax specialists as reported by their data cards. Therefore, it cannot be inferred that these specialists could overly influence the rankings. It might be assumed that due to the increased emphasis on taxation at all levels that, for the future, this is an area in which more emphasis is needed. The audit practice and principles subjects might intuitively be assumed to be of importance. However, the rankings did not bear out such an assumption. Work study ranks high possibly because of

its ability to give a student some insight into the applications of his knowledge and perhaps even to serve as an initial weeding out device by the employing firms. Educators agreed that work study was important by ranking it second. However, the public accountants ranked work study from first to thirtieth.

Summary

The opinions of 127 educators and public accountants have been reflected in their responses to the subject cards. The specific detailed order of their rankings as individuals or as a group is subordinate to the over-all picture. These respondents have given top priority to Written and Oral English. Communications is a skill that is needed by all individuals concerned with report preparation, client or group presentations and briefings. Also, the ability to read and comprehend a variety of technical journals and reports requires an ability to understand and assimilate written materials.

The absence of technical accounting subjects in the top level of rankings reflects the fact that the basic skills have been assumed to be understood and it is in other areas of learning that the respondents feel the beginning C.P.A. needs development for growth as a professional. The presence of general education courses and certain economics courses in the top half of the rankings point to the fact that knowledge in behavioral, scientific, and certain mathematical areas is deemed important. In

particular, Natural Science received a second place ranking. The respondents evidently perceived that the training received in scientific methods is applicable to the development of problem solving in the business world. The C.P.A. is going to deal with people and as such he needs knowledge in the areas of human relations, philosophy, ethics and the economic environment in which he is living.

It is not surprising that the general low level of the ranking of mathematics exists. This is probably due to an overall dislike of mathematics by the various respondents. However, in this time of expanding use of computers and the related fields of analysis and application of quantitative techniques it would seem that more recognition of mathematics would be expected. Only statistics, introductory and advanced were in the upper third of the ranking scale. And, advanced statistics was ranked higher than the introductory course. This ranking points to the recognition of all respondents regardless of classification of the importance of this singular tool area.

Statistical Test Results

The following pages will detail the results of the Spearman rank correlation coefficient and Kendall coefficient of concordance. The Spearman test will show the agreement between respondent categories. For instance, it will demonstrate the similarity (or non-similarity) of

large-small accountants or vocational-conceptual educators and their respective rankings of the course topics. The Kendall test will show the agreement among the respondents in each respondent category. As an illustration, it will show how the large accountants agree (or disagree) with themselves. By using both the Spearman and the Kendall you can get a sense of agreement between respondent categories and among the respondents within the categories.

Spearman Rank Correlation Coefficient

The first statistical test to be applied on the data was the Spearman rank correlation coefficient. This coefficient, rho, measures the association in rankings between the different categories of respondent with the actual calculations being made by the Computer Institute for Social Science Research (C.I.S.S.R.) routines. There were six basic categories of respondent--vocational and conceptual educators, large, small, old and new accountants. By combining these six basic categories 21 combinations of respondents were calculated.

Table 4.3 shows the combinations of these respondents and their rho values. In addition to the rho values, the critical values for each of these combinations was calculated. The critical values were calculated using the Student's t test and a significance level of .0005. The Student's t test was used because N, the number of subjects, was larger than ten. Thus, the probability under the null hypothesis of any value as extreme as an observed value of

TABLE 4.3.--Respondent Classification and Associated Rho Values with Significance Tests

Respondent Class	Rho Value (Correlation)	t value*
Large-Small	.89	13.0938
Large-Old	.93	16.2431
Large-New	.92	15.7469
Large-Vocational	.71	6.7633
Large-Conceptual	.64	5.5873
Small-Old	.96	22.9994
Small-New	.92	15.7469
Small-Vocational	.79	8.6436
Small-Conceptual	.62	5.3008
Old-New	.85	10.8240
Old-Vocational	.74	7.3803
Old-Conceptual	.68	6.2213
New-Vocational	.67	6.0643
New-Conceptual	.58	4.7761
Vocational-Conceptual	.46	3.4752
All Respondents-Large	.94	18.4822
All Respondents-Small	.96	22.9994
All Respondents-Old	.97	26.7659
All Respondents-New	.92	15.7469
All Respondents-Vocational	.79	8.6436
All Respondents-Conceptual	.71	6.7633

*All calculated on a one-tailed basis with degrees of freedom equal to 47 and the level of significance at .0005.

any rho was determined by computing the t value and then determining the significance of that value by referring to the appropriate table in any standard statistics test. For this research, Table B--A Table of Critical Values of t--in the Appendix of Siegel's Nonparametric Statistics for the Behavioral Sciences was used.[1]

The highest level of significance which was available for comparison purposes was .0005. At this level all of the combinations were significant. Thus, if you were to state the null hypothesis, i.e., there are no differences in ranking for the combinations of respondents illustrated in Table 4.3., the null hypothesis would be accepted for each of these combinations. The interpretation of accepting the null hypothesis is that there are no significant differences in the rankings by the 21 classes of respondents. The alternative hypothesis, i.e., that there are differences in rankings by the respondents, then cannot be accepted based on these results. The only combination that even came close to rejecting the null hypothesis was the Vocational-Conceptual grouping.

By using the Spearman test it is easier to see how the various groups agree (or disagree) on the rankings of courses. Putting the overall ranks in this perspective enables comparisons to be made easier than by observing the rankings portrayed in Tables 4.1 and 4.2. Certain comments could be made concerning the values of rho and the associated pairs of respondents. As might be expected

the large-old and large-new respondents have similar values of rho and in the same manner so do the small-old and small-new. Similarly, large-old and small-new exhibit exactly the same rho values. When ages are compared there is not as high a rho value as with the previous comparisons. Also, when sizes are compared, the rho value is lower than that of ages. However, as stated before these are all significant at the .0005 level and the null hypothesis was accepted. In other words there are no differences in ranking by the various respondent classes indicated in Table 4.3.

The lowest rho value achieved was the comparison of rankings between vocational and conceptual educators. This is just barely significant. When the educators are compared with the public accountant respondents it can be seen that the conceptually oriented educators differ rather significantly from the accountants. The rhos are also consistently lower when the same comparison is made with the vocationally oriented educators.

In summary, the Spearman rank correlation coefficient test that was applied to the card deck data demonstrated that all respondent groups, when compared in various combinations, did not rank the subjects in a significantly different manner. The highest correlations were found when the accounting respondents were compared with each other whereas the lower correlations were found when the educators were compared to each other and with the accountants.

Kendall Coefficient of Concordance

The second statistical test to be employed on the data was the Kendall coefficient of concordance. This test is a measure of relationships among the rankings by the respondents in each respondent category. It indicates how the respondents within each category agree (or disagree) with each other. In other words, it is a measure among the respondents in a given category and not a measure between categories of respondent. As pointed out in Chapter III--Methodology, the Kendall coefficient (W) is a measure of relation among several rankings of N subjects. A Kendall coefficient of concordance was calculated for each of three groups. The first group was all respondents and all subjects. This gave an overall measure of the relations among the rankings by the various respondents. Group two utilized all respondents and the five topic areas (general education, general business, economics, mathematics and accounting) to measure the coefficients. The third group was classified by type of respondent and the five topic areas. The results were tabulated and are as follows.

When all respondents and all subjects were compared the W was fairly high. For this first group the W equaled .883. Using the chi square test for significance these results were significant at the .001 level. The interpretation of this statistic for the first group is that there is a fairly high agreement among all respondents on

all subjects. This supports the overall median ranking exhibited in Table 4.1.

For the second and third groups the results are tabulated in Tables 4.4 and 4.5, respectively.

Each of the coefficients were tested for significance at the .001 level using a chi square test and each was found to be significant. Thus, it may be concluded, with considerable assurance, that the agreement among the various respondents in each category is higher than it would be by chance. The very high probability under the null hypothesis associated with the observed values of W enables an acceptance of the general null hypothesis that there is no difference in subject rankings by various judges within the respondent groups. There is little support for the alternative hypothesis. In other words, the large firm accountants do not disagree significantly on the markings of subjects under the various topic headings.

Another significant point that should be emphasized is that these scores, particularly those reported in Table 4.5, indicate agreement within the respondent category. Therefore, by using the W, it can be stated that the respondents agreed among themselves on the rankings. The Spearman rank correlation coefficient showed only the agreement between respondent categories on the rankings. Thus, by using these two statistical tests we have the agreement between respondent classes and agreement among the

TABLE 4.4.--Coefficients of Concordance--All Respondents and the Five Topic Areas.

Topic Areas	Coefficient of Concordance	Level of Significance
General Education	.894	Sign. at .001
General Business	.871	Sign. at .001
Economics	.868	Sign. at .001
Mathematics	.878	Sign. at .001
Accounting	.912	Sign. at .001

respondents within each class or category. To illustrate what this means, consider the rho for vocational and conceptual educators. From Table 4.3 it can be seen that this value was .46 and was just barely significant at the .0005 level. When the two respondents are compared by the Kendall coefficient of concordance, it is noted that both the vocational and conceptual educators do not differ when their inter rankings are compared. In other words, the respondent vocational educators agree among themselves and the respondent conceptual educators agree among themselves. They do not agree as strongly as other respondent classes when they are compared as a group with each other and this is shown by their respective rho values in Table 4.3.

In summary, the Kendall coefficient of concordance as applied to the data demonstrated that in general all respondent classes exhibit internal agreement. All public

TABLE 4.5.--Coefficients of Concordance of Individual Responses and the Five Topic Areas.*

Topic Respondent	General Education	General Business	Economics	Mathematics	Accounting
Large					
k = 52	.787	.809	.731	.756	.841
Small					
k = 51	.789	.821	.797	.795	.833
Old					
k = 52	.784	.792	.795	.801	.843
New					
k = 51	.776	.768	.794	.774	.830
Vocational					
k = 12	.633	.621	.741	.663	.768
Conceptual					
k = 12	.764	.742	.787	.774	.797

*The significance level was tested by using the Chi Square and the level of significance was set at .001. At this level of significance all the values shown in this chart are significant.

accountant respondents consistently had higher coefficients than did the accounting educators. This indicates that the accountants, within their respective categories, are more consistent in their rankings than are either of the two categories of accounting educators. However, the conceptually oriented educator had more internal consistency than did his vocationally oriented colleague. When the Kendall results are combined with the Spearman results, there is a picture of the rankings between the categories of respondent and among the respondents in each category.

Kolmogorov-Smirnov Test

The purpose of the Kolmogorov-Smirnov (K-S) test is to determine whether there is any agreement between two sets of sample values. If two samples have in fact been drawn from the same population distribution, then the cumulative distribution of both samples may be expected to be fairly close to each other. If the two sample cumulative distributions are "too far apart" at any given point, this suggests that the samples come from different populations. Thus, a large enough deviation from the two sample cumulative distributions is evidence for rejecting the null hypothesis.

This third set of statistical techniques was used to test the four major hypotheses. These four hypotheses are as follows:

H_o^1: There is no difference in the subject emphasis recommendations by public accountants in large and small firms in Michigan.

H_o^2: There is no difference in the subject emphasis recommendations by age groups of public accountants in Michigan.

H_o^3: There is no difference in the subject emphasis recommendations by accounting educators from conceptually oriented and vocationally oriented colleges and universities in Michigan.

H_o^4: There is no difference in the subject emphasis recommendations by public accountants and accounting educators in Michigan.

The Kolmogorov-Smirnov two-sample test is a test of whether two independent samples have been drawn from the same population. This test is concerned with the agreement between two sets of sample values. Since the sample size was less than forty in each group, the small sample technique was used in the K-S test. This use of the small sample test means that n_1 (the number of respondents in one category) must equal n_2 (the number of respondents in the second category). For the accounting respondents $n_1 = n_2 = N = 24$, i.e., there will be 24 accountants in each of the 4 categories--large, small, old and new. The educator respondents will have 12 in each of their categories--vocational and conceptual. Thus, for the educators, $n_1 = n_2 = N = 12$. When all educators are compared to all accountants N will equal 24. Since the small sample test is being used, Table L--Table of Critical Values of K_D in the Kolmogorov-Smirnov Two-Sample Test--in Siegel's

Nonparametric Statistics will be utilized.[2] The body of the table gives various values of K_D, which is defined as the numerator of the largest difference between the two cumulative distributions of respondent rankings. Table 4.6 illustrates the results of the K-S test as applied to the rankings of the respondents of the 47 subjects. Since the test must be run on a course subject by course subject basis, each subject is shown along with its significance at the .01 level. The null hypotheses will be rejected if the value of K_D for the largest deviation in the predicted direction is so large that the probability associated with its occurrance under H_o is equal to or less than .01. The predicted direction is indicated by the alternative hypotheses which are stated as follows:

H_1^1: Large firm respondents rank subjects in a different manner than do small firm respondents.

H_1^2: Older accounting respondents rank subjects in a different manner than do younger respondents.

H_1^3: Conceptually oriented educators rank subjects in a different manner than do vocationally oriented educator.

H_1^4: Accounting respondents rank subjects in a different manner than do accounting educator respondents.

Since the alternative hypotheses predict the direction of the differences, the region of rejection is one-tailed. For the practitioner group where N = 24, if $K_D \geq 11$, the null hypotheses can be rejected at the .01 level. By the same token, for the educators where N = 12, if $K_D \geq 8$, the

null hypothesis will also be rejected at the .01 level. When accounting respondents and educators are combined, N = 24, and if $K_D \geq 11$, the null hypothesis will be rejected at the .01 level.

From Table 4.6 several relationships can be seen. First, when size was considered, 40 out of 47 subjects were statistically significant at the .01 level. This can be interpreted as meaning that for 40 subjects there was no difference in ranking between the large and small accounting firm respondents, i.e., acceptance of the null hypothesis. And, for the other seven subjects, the null hypothesis was rejected. Also, it can be stated that the alternative hypothesis, that large firms rank the subjects in a different manner than small firms, was rejected on 40 subjects and accepted on 7 subjects. Second, when age was considered, 39 out of 47 subjects were ranked in a similar manner. The interpretation is that there was no significant difference in rankings between old and new accounting respondents. In other words, the null hypothesis that there were no differences in rankings by old and new accounting respondents was accepted for 39 subjects and rejected for 8 subjects. The alternative hypothesis, that old accountants rank subjects differently than new accountants was rejected for 39 subjects and accepted for 8 subjects.

The third set of relationships is concerned with the educator respondents. The educators did not show the

TABLE 4.6.--Kolmogorov-Smirnov Test Between Age, Size, and Type of Educator.*

Subjects (Alphabetical Order)	Respondents							
	Old-New N = 24		Large-Small N = 24		Con.-Voc. N = 12		Acct.-Ed. N = 24	
	K_D	Sig.	K_D	Sig.	K_D	Sig.	K_D	Sig.
1. Accounting practice and procedure--intermediate	8	y	5	y	7	y	8	y
2. Accounting practice and procedure--advanced	8	y	6	y	3	y	7	y
3. Accounting theory	6	y	6	y	9	n	9	y
4. Algebra	6	y	8	y	3	y	7	y
5. Auditing practice	5	y	6	y	6	y	6	y
6. Auditing principles	8	y	7	y	11	n	8	y
7. Business and industrial management--introductory	5	y	8	y	9	n	9	y
8. Business and industrial management--advanced	8	y	4	y	11	n	7	y
9. Business law	8	y	6	y	2	y	6	y
10. Business mathematics	7	y	4	y	7	y	6	y
11. Calculus	8	y	9	y	7	y	9	y
12. Corporation finance--introductory	5	y	4	y	6	y	6	y
13. Corporation finance--advanced	9	y	10	y	7	y	8	y
14. Cost accounting--introductory	8	y	6	y	6	y	7	y
15. Cost accounting--advanced	7	y	5	y	9	n	8	y

TABLE 4.6.--continued.

Subjects (Alphabetical Order)	Respondents							
	Old-New N = 24		Large-Small N = 24		Con.-Voc. N = 12		Acct.-Ed. N = 24	
	K_D	Sig.	K_D	Sig.	K_D	Sig.	K_D	Sig.
16. Data processing--introductory	7	y	4	y	7	y	6	y
17. Data processing--advanced	5	y	8	y	11	n	9	y
18. Differential equations	12	n	11	n	16	n	12	n
19. Economics--introductory	9	y	11	n	5	y	7	y
20. Economics--advanced	8	y	6	y	7	y	7	y
21. English literature	3	y	6	y	4	y	5	y
22. Finite math for business	4	y	3	y	11	n	9	y
23. Geometry, trigonometry	11	n	6	y	4	y	7	y
24. Humanities--introductory	12	y	8	y	5	y	9	y
25. Humanities--advanced	9	y	7	y	6	y	8	y
26. International economics	8	y	9	y	6	y	8	y
27. Law	7	y	11	n	10	n	11	n
28. Managerial accounting	9	y	5	y	5	y	6	y
29. Managerial economics	4	y	5	y	6	y	5	y
30. Marketing--introductory	5	y	6	y	5	y	5	y
31. Marketing--advanced	12	n	4	y	7	y	8	y
32. Money and banking--introductory	5	y	11	n	7	y	9	y

TABLE 4.6.--continued.

Subjects (Alphabetical Order)	Respondents							
	Old-New N = 24		Large-Small N = 24		Con.-Voc. N = 12		Acct.-Ed. N = 24	
	K_D	Sig.	K_D	Sig.	K_D	Sig.	K_D	Sig.
34. Natural science--introductory	8	y	7	y	7	y	7	y
35. Natural science--advanced	6	y	7	y	9	n	8	y
36. Operations research	5	y	9	y	4	y	7	y
37. Personnel and labor relations	12	n	5	y	11	n	11	n
38. Philosophy, logic	11	n	8	y	7	y	8	y
39. Production--introductory	6	y	11	n	9	n	10	y
40. Production--advanced	11	n	5	y	4	y	8	y
41. Statistics--introductory	5	y	7	y	5	y	6	y
42. Statistics--advanced	7	y	10	y	8	n	8	y
43. Social science	5	y	4	y	7	y	6	y
44. Tax--introductory	5	y	5	y	10	n	7	y
45. Tax--advanced	4	y	11	n	6	y	8	y
46. Work study	12	n	15	n	4	y	9	y
47. Written and oral english	4	y	3	y	3	y	3	y

*One-tailed test, significance level, = .01.

y = significant; n = not significant.

high overall acceptance level evidenced by the public accountants. Only 32 out of 47 subjects were ranked in a similar manner. Thus, analysis of accounting educator's responses indicated that there were no significant differences in 32 subjects, i.e., acceptance of the null hypothesis, and there were significant differences in 15 subject areas, i.e., rejection of the null hypothesis. The alternative hypothesis, that conceptually oriented educators rank in a different manner than vocationally oriented educators, was rejected for 32 subject areas and accepted for 15 subjects areas.

Fourth, when all educators are compared to all public accounting respondents only three rejections of the null hypothesis were found. Thus, the null hypothesis was accepted for 44 of the subjects and rejected for three subjects. The alternative hypothesis that all educators rank in a different manner than all public accountants was rejected on 44 subjects and accepted for three subjects.

When the courses are examined, certain similarities can be found. The subject Differential Equations for Business was consistently rejected by all four groups. Law and Production--Introductory were rejected by the large-small accountants, the educators, and all accountants and all educators while Personnel and Labor Relations was rejected by the old-new accountants, the educators, and all accountants and all educators. In the same manner, Work

Study was rejected by the accounting respondents but accepted by the educators.

The inferences that can be drawn from using the K-S test are principally that the public accounting respondents--large and small, old and new--tended to rank the subjects with more agreement among themselves than did the vocationally-conceptually oriented educators. This does not say that either the public accountants or the educators are correct. The K-S test does not test for correctness. None of the hypotheses tested indicate any correctness of the rankings. The hypotheses that were tested merely looked at whether one group of respondents ranked the subjects in a manner similar to that of another group. It could well be that the criteria used by the respondents for ranking was not the criteria suggested by the researcher in the covering letter and in the instructions given with the ranking device. However, it might be concluded that since the evidence of the various statistical tests points toward a rather high similarity of rankings between and among groups, that these groups did use a similar criteria for ranking.

Interview Findings

To check to see if these groups did use the same criteria for ranking the subjects, further investigations were made with the respondents. In order to obtain some answers to the questions of whether the respondents did

use the same criteria for ranking, i.e., was future growth the criteria, interviews were conducted with certain of the respondents from each of the six categories. There was an economic limitation placed on getting this information that prohibited contacting all the respondents. However, a total of 42 interviews lasting approximately 30 minutes each were conducted. These interviews were conducted primarily at the place of business of the respondents and in some few instances over the telephone. These interviews took place within two to three weeks after the card decks had been returned. The categories and the number of persons actually interviewed are as follows: large--7; small--6; old--6; new--6; conceptual--8; vocational--9. The interviewee was provided with a list of the five major topic areas with the subjects listed in alphabetical order under each of these topics. This form was a reproduction of Table 3.5 which appears on page of this study. The criteria for ranking was given the interviewee and he was asked questions about particular subjects in the topic areas and the topic areas in general. The questions were stated in such a manner in order to elicit two responses from the interviewee. First, what was the order of importance to him of the five topic areas and second, how he felt about certain subjects in the topic areas. The responses were recorded by the interviewer on an identical form to the one given the interviewee. The results of these interviews are summarized as follows.

First, the interviewees did understand that the criteria they were using was not a replication of the Horizons criteria for ranking even though the same general ranking device was used in both research projects. The responses to the questions asked by the interviewer made it possible to determine that the interviewees did utilize the criteria outlined for ranking the subjects given in the covering letter and directions.

Second, the most important topic area for the growth of public accountants was General Education. This was agreed upon by both public accounting and educator interviewees. This was followed by General Business which both groups agreed was second in importance. However, the public accountants then ranked Economics, Accounting and Mathematics as their next choices while the educators ranked Mathematics, Economics and Accounting as their next three choices.

Third, the public accounting interviewees supported the reported rankings of the accounting courses. By referring to Table 4.2, it is noted that the accounting courses, with a few exceptions, were ranked in the lower quarter of the subject list. The interview results indicated that these courses would be quite marginal to the growth of public accountants. These courses are assumed to be a part of his basic equipment when he comes to the firm and, as such, more of the same would be of little use.

Fourth, more important to his growth would be certain advanced courses in statistics, management, marketing, finance and money and banking. These courses were deemed necessary to add breadth to the knowledge of the accountant. The accounting interviewees felt that many of the introductory courses in business were busy work and that there should be more integration of advanced course work at the introductory level. In other words, introductory courses in certain areas of business do little in the way of preparation in these areas for future growth.

Fifth, mathematics, with the exception of statistics, was not viewed by the public accounting interviewees as being a vital area. They felt that the use of statistics would be an important tool for the public accountant to have but that other areas of mathematics were not as important. The educators, on the other hand, felt that an overall knowledge of mathematics was considered to be more important for the overall education of the public accountant. It is not the knowledge of mathematics per se but the discipline of the reasoning processes involved which the educators felt was necessary.

Sixth, in the area of general education both the public accountant and the educator considered effective communication as highly essential. Both groups indicated that inclusion of general education courses gave the person a perspective that allowed him to think more in a

conceptual manner than in a practical manner. Such thinking development would be invaluable for his professional growth in future years.

Thus, the interviews confirmed the fact that the respondents did utilize the criteria outlined by the researcher for ranking the subjects from most to least important. The interviews also confirmed certain of the results of the rankings that seemed rather incongruous at first but were really rather logical from the viewpoint of the respondent-interviewees.

Summary

This chapter reported the results of the card deck rankings from 127 respondents and the results of several statistical tests applied to those rankings. In addition, the results of the interviews with a few of the respondents were disclosed.

The first statistical test applied was based on the Spearman rank correlation coefficient. The results of this test indicated that the groups agreed with one another when the groups were combined in various manners. Certain groups had higher levels of agreement than did other groups but all groups were significant when measured statistically. To test to see if the groups agreed internally, the Kendall coefficient of concordance was calculated for a variety of combinations of groups and topic areas. Like the Spearman test, the Kendall test proved to be statistically

significant in almost all cases. Thus, these two tests provided a look at the rankings between the groups (rho) and among the respondents within the groups (W). Finally, the Kilmogorov-Smirnov test was used to test the four major hypotheses. This test was applied to each subject for three major groups of respondent--by age, by size and by type of educator--and for all educators and all accountants. The results of this test showed that the accountants when categorized by age and size tended to rank the subjects in a similar manner. The educators, however, were not as consistent as the public accountants in their rankings. From the results of the K-S test it is not possible to say which of these two groups were correct. This is not the purpose of the test. The test just allows the researcher to state that the respondents did have consistencies in their rankings and what these consistencies were. The interview results allowed the researcher to determine if the respondents did use the same criteria for ranking the subjects or used some different criteria. It was found that the respondents who were interviewed did use the criteria desired by the researcher. With support from the interviews there is a certain amount of credence lent to the statistical findings. Reasons for certain phenomena and the thinking behind these phenomena could then be ascertained and disclosed.

FOOTNOTES--CHAPTER IV

[1]Siegel, Nonparametric Statistics . . ., p. 248.

[2]Ibid., p. 278.

CHAPTER V

RESULTS OF CATALOG STUDY AND COMPARISON WITH LITERATURE

Introduction

Several studies were reviewed in Chapter II that dealt with the evaluation of business schools and their accounting curricula. The first section of this chapter reviews the particular curricular recommendations of those studies that are pertinent to this study. The second section the college catalog findings of the 16 institutions covered in this study and the third section various recommendations suggested in Section One with the findings of the catalog study in Section Two.

Section One--Review of Pertinent Curricular Recommendations

Ford and Carnegie Reports

Although the Ford and Carnegie studies were under separate sponsorship and were completed about the same time, they each had similar criticisms and recommendations about business schools in general and various business curricula in particular. The curricular recommendations of these two groups are summarized in Table 5.1.

TABLE 5.1.--Ford and Carnegie Reports on Percentage Allocation of Undergraduate Hours.

Report	Liberal Arts (including Economics)	Business (excluding Accounting)	Accounting
Ford Report[1]	50 - 60	40 - 40	10
Carnegie Report[2]	62½ - 67½	25 - 27½	12½ - 15

Source: [1]Robert A. Gordon and James E. Howell, Higher Education for Business (New York: Columbia Press, 1959), p. 213.

[2]Frank C. Pierson and others, The Education of American Businessmen (New York: McGraw-Hill Publishing Company, 1959), p. 227.

The Ford study emphasized a career education and not just an education for the first job. The study suggested that undergraduate business education should be based on a broad general education with the core of business subjects and the professional courses given due attention.[1] Ford's implicit suggestion was "that not less than half of the four year undergraduate program be devoted to general education and (they) believe that considerably more would be desirable."[2] [underlining is the italics in the original.] Thus, the undergraduate curriculum Ford proposed was at least 50 per cent general education (liberal arts and science), a core of business courses of about 30 to 40 per cent and a limited field of concentration of approximately 10 per cent. Those wishing to increase the amount of work in a field of concentration

could do so through the limited use of free electives. The emphasis was definitely on general education with the technical aspects reduced or postponed until a fifth year.

The Carnegie report closely paralleled the Ford report in findings, criticisms and suggestions.[3] One prominent difference, however, was in the recommendations of undergraduate course break downs. Carnegie suggested 62 to 67 per cent of the undergraduate curricula in general courses and 25 to 28 per cent in the business core with the remaining 12 to 15 per cent in the major concentration. As compared to the Ford report, the Carnegie report proposed more emphasis in the general non-business area, fewer business core courses and more courses in the major area.

The American Accounting Association

Throughout the history of the A.A.A. there has always been the theme of educational improvement in areas of faculty, facilities, teaching technique, curricula and student selection. Committees have been a vital part of this research and these committees have studied a variety of topics involving educational improvements over many years. Some of the more pertinent committee reports and recommendations on curricula will be reviewed in the subsequent paragraphs. Table 5.2 presents a summary of these various recommendations.

TABLE 5.2.--Various American Accounting Association Education Committee's Percentage Allocation of Undergraduate Hours.

Committee	Liberal Arts (including Economics)	Business (excluding Accounting)	Accounting
Standards Rating Committee Recommendations[1]	50	25	25
Task Committee on Standards of Accounting Instruction--Findings 1950-54[2]	50	25	25
Committee on Scope of the Four Year Accounting Major--Findings 1955-59[3]	50	26	24
Committee on Scope of the Four Year Accounting Major--Recommendations[4]	50	25	25
Committee on Educational Standards[5]	50	25-30	20-25

Source: [1]American Accounting Association, "Report of the Standards Rating Committee," The Accounting Review, XXIX (January, 1954), p. 43.

[2]American Accounting Association, "Report of the Task Committee on the Standards of Accounting Instruction," The Accounting Review, XXI (January, 1956), p. 37.

[3]American Accounting Association, "Report of the Committee on the Scope of the Four Year Accounting Major," The Accounting Review, XXV (April, 1960), p. 204.

[4]Ibid., p. 205.

[5]American Accounting Association, "Report of the Committee on Educational Standards," The Accounting Review, XXXIX (April, 1964), p. 452.

Reporting in 1954, the Standards Rating Committee listed the educational objectives (standards) for accounting education and suggested how to implement these objectives. These objectives were: first, a well-informed citizen; second, a well-rounded businessman; and third, a proficient accountant.[4] To meet these objectives under education conditions existing at that time, the committee suggested an undergraduate program that was 50 per cent non-business, 25 per cent business core and 25 per cent accounting. A suggested four year program including certain required course areas was outlined and this program has been the basis for curriculum development and study since its inception.

The successor to the Standards Rating Committee was the Task Committee on Standards of Accounting Instruction. This group surveyed schools offering accounting majors for the years 1950-1954 and found that these schools followed rather closely the pattern established by the Standards Rating Committee. In terms of actual hours the Task Committee recommended 31 semester hours of accounting (24 being an absolute minimum), 31 semester hours in business courses other than accounting and 64 semester hours in non-business courses.[5] This semester recommendation reaffirms the percentage breakdown of the Standards Committee.

A Committee on the Scope of the Four Year Accounting Major reported in 1960 on its findings of colleges

surveyed for the years 1955-1959. Their report indicated a very slight increase in the percentage of hours allocated to the business area and a very slight decrease in the percentage allocation in the area of accounting.[6] This committee, as did previous committees on accounting education reaffirmed the original percentage hours as proposed by the Standards Rating Committee.[7]

The Committee on Educational Standards reported in 1964 when proposing standards for curriculum it was necessary to point out the implications for quality education of the future accountant. The committee listed four suggestions. First, an emphasis on qualitative factors rather than quantitative factors of education. Second, educate the student to keep learning for himself. Third, keep a proper balance between general knowledge and the technical knowledge needed. And, fourth, the traditional four-year program may not be long enough to accomplish the educational objectives of professional training in accounting.[8] The Committee on Educational Standards proposed the percentages that appear in Table 5.2: general education, 50 per cent; general business, 25 to 30 per cent; and, accounting, 20 to 25 per cent. They also recommended that wherever possible a vertical integration of courses take place so that not all the general education will be received in the first two years and the general business and accounting in the last two years.

In its effort to seek improvement in the area of accounting education the A.A.A. is constantly reviewing previous policy recommendations in the light of current trends and techniques. The most recent updating was completed by the Committee to Compile a Revised Statement of Educational Policy.[9] Essentially, this report reaffirmed previous committee reports with some slight modifications and amplifications. The Committee as a whole disagreed with the Ford and Carnegie contentions that there should be greater reliance placed on liberal arts (liberal arts and science). The committee states:

> The implication in the reports (Ford and Carnegie) that all liberal arts courses are of greater value to basic education, to the development of the personality, and to training in analytical thinking than are courses in business administration is rejected.[10]

When a comparison is made between the Ford and Carnegie reports and the various committee efforts from the A.A.A., there appear to be differences in the philosophy of the groups. Ford and Carnegie both emphasized the general or liberal education over a concentration in the business and major areas. The A.A.A. philosophy is that approximately half of the emphasis be on general education with the remainder of the time split about evenly between general business and the major area of accounting. The A.A.A. has not been convinced that a liberal education of the magnitude suggested by both Ford and Carnegie will be more beneficial to a student in

developing his skills and techniques than the programs outlined by the A.A.A. General knowledge can be introduced in business and core and major areas as well as in the liberal or general education area.

American Institute of Certified Public Accountants

John Carey, in his recent two-volume history of the A.I.C.P.A., points out the continuing interest that the Institute has had in accounting education. The Institute, like the A.A.A., has had an active participation by a variety of committees and study groups in working with educational problems and forming policy recommendations. However, in matters pertaining to the education of accountants, the Institute has deferred to the A.A.A. In 1956, the Commission on Standards of Education and Experience for C.P.A.s recommended that the Standards Rating Committee of the A.A.A. be followed for suggested curriculum.[11] Also, it took the position that postgraduate education is desirable and that such education, principally in accounting and business administration, should become a requirement for a certificate as soon as it is feasible.[12]

With the publishing of Horizons for a Profession the A.I.C.P.A. initiated a rather provocative inquiry into the "common body of knowledge to be possessed by those about to begin their careers as certified public accountants."[13] The findings of Horizons as to the nature

of programs of study presently being offered to undergraduate accounting majors and the changes that had taken place since the Ford and Carnegie reports are detailed below:

1. Undergraduate accounting courses decreased about ten percent.
2. Non-business subjects increased twenty-four percent.
3. Economics requirements remained unchanged.
4. Statistics and mathematics requirements increased slightly.
5. General business courses decreased slightly.[14]

As a result of the interest in Horizons a series of symposiums were held at several locations throughout the country to discuss the findings and recommendations of Horizons. After these symposiums were held, the A.I.C.P.A. appointed the Committee on Education and Experience Requirements (C.E.E.R.) to study these symposium results along with the recommendations of Horizons and present a policy position for the A.I.C.P.A. to adopt on accounting education. The committee's report outlined a descriptive, not prescriptive model of a four and five year program. This program is reproduced in Table 5.3.

When compared to Tables 5.1 and 5.2, the Education and Experience Committee's recommendations follow rather closely the recommendations of the 1964 A.A.A. Committee on Educational Standards. The primary difference between the two groups is that the A.I.C.P.A. recommends more

TABLE 5.3.--Alternative Programs in Accounting Recommended by the Committee on Education and Experience.

General Education	Semester hours
Communication	6- 9
Behavioral Sciences	6
Economics	6
Elementary Accounting	3- 6
Introduction to the computer	2- 3
Mathematics (modern algebra, calculus, statistics and probability)	12
Other general education	25-18
	60

General Business	Five Year	Four Year
Economics (intermediate theory and monetary systems)	6	6
Social environment of business	6	3
Business law	6	4
Production	3	2
Marketing	3	2
Finance	6	4
Organization, group and individual behavior	9	6
Quantitative applications in business	9	6
Written communication	3	2
Business Policy	3	3
	54 (36%)	38 (31.7%)

Accounting		
Financial reporting theory Applied financial accounting problems Contemporary financial accounting issues	9	6
Cost determination and analysis Cost control Cost based decision making	6	3
Tax theory and considerations Tax problems	3	3
Computers and information systems	6	4
Audit theory, philosophy, problems	6	3
	30 (20%)	19 (15.8%)
Electives	6 (4%)	3 (2.3%)
	150	120

Source: Report of the Committee on Education and Experience Requirements for CPAs (New York: American Institute of Certified Public Accountants, 1969), p. 58.

general business courses and fewer accounting courses than does the A.A.A. This disparity may be attributed to the fact that the A.I.C.P.A.'s committee recommended a fifth year and that a four-year program provides a bare minimum in the major area of accounting. The fifth year would be a 12.5 per cent addition to the business courses and a 25 per cent increase in accounting courses with no increase in the general education requirements. It might be noted that the four year plan does just meet the Michigan Accounting Law, Section 16 a(1), b and c which, as amended, requires 21 semester hours in accounting in the baccalaureate program.[15]

Much of the A.I.C.P.A. model reinforces the current thinking in currculum building for beginning public accountants. Behavioral and social aspects of business received increased attention along with mathematics and the related quantitative applications in business. However, the primary emphasis of the Committee on Education and Experience lies not in a model of education in technique but in a model that employs conceptual understanding.

When comparing the recommendations of the Committee on Education and Experience to those of other groups discussed earlier there is slightly more similarity between the Committee and Ford and Carnegie than between Ford and Carnegie and the A.A.A. The Committee on Education and Experience places a heavier emphasis on the business and major areas than does the Carnegie report but it does

approach the lower percentage limits of the Ford report as shown in Table 5.4. Although not explicitly stated, the A.I.C.P.A. followed the lead of the A.A.A. in recommending a maximum of 50 per cent in the general area. Table 5.4 summarized the percentage allocation of these several reports.

TABLE 5.4.--Comparison of Percentage Allocation of Undergraduate Hours.

Reports	General Education (Liberal Arts)	General Business	Accounting
Ford Report	50 - 60	30 - 40	10
Carnegie Report	62½-67½	25 - 27½	12½ - 15
A.A.A. Educational Standards Committee	50	25 - 30	20 - 25
A.I.C.P.A. Education and Experience Committee			
Four Year Model[a]	50	32	16
Five Year Model[a]	40	36	20

[a]The four and five year models of the Committee on Education and Experience do not total 100% due to the inability to allocate the free electives of 2% and 4% respectively.

Section Two--The Catalog Study

As would be expected there are certain similarities and differences between Horizons, the recommendations made by the various A.A.A. and A.I.C.P.A. education committees, and the offerings of those Michigan colleges and universities offering a baccalaureate degree with a major in accounting. A detailed analysis of the catalog review in relation to these recommendations will be presented so that the similarities, differences, and pertinent findings can be discussed.

The criteria for inclusion of a college or university in the catalog study were outlined in Chapter III, pages 78-79. Briefly these criteria were (1) the institution must grant a four-year degree; (2) the degree must have either a major or concentration in accounting; and (3) the major or concentration must have been offered since 1958. Out of the 91 institutions in Michigan that presently offer a baccalaureate degree only 16 fit the criteria. There were several other institutions that offered courses in accounting but did not have a major field and thus were not included. Also, there were some new colleges that presently grant a major in accounting but due to their newness they were not included.

In making comparisons among these 16 institutions, problems arose concerning the lack of uniformity in stating the requirements for the degree. Some institutions were on a semester basis while others were on a term or quarter

basis. Courses were required in a variety of areas which had differing descriptions depending on the institutions. Electives were in the major area, the minor area or were free. To overcome these problems and allow for some degree of comparability and uniformity among the institutions certain conventions were adopted. These conventions were as follows:

1. All credits were calculated on the basis of semester hours. To convert term or quarter credits into semester hours a factor of 2/3 was used. This conversion factor is a standard factor used by registrars when converting term or quarter hours to semester hours. As an example, a course requiring six quarter hours would be equal to four semester hours.

2. Five areas of study were prepared to facilitate the course classification and subsequently the credit calculation. These areas and their inclusions or exclusions are as follows:

A. General Education (exclusive of economics and quantitative).

B. General Business (exclusive of economics and introductory accounting).

C. Mathematics (includes mathematics and statistics).

D. Economics.

E. Accounting (includes introductory accounting).

3. Electives were applied to those five areas when such an application was clearly available. When the

elective designation could not be made then the electives were placed in the column labeled Free Electives.

The courses from the years 1958/59, 1964/65 and 1970/71 were analyzed and the credits assigned to the five topic and elective areas for each of the 16 institutions. The results are shown in Tables 5.6, 5.7, and 5.8. No graduate programs were reviewed but it is noted that of the 16 institutions, six offer graduate programs on the masters level and two offer doctoral programs in business administration with a major in accounting.

Findings of the Catalog Study

This portion of Section Two will review the findings of the catalog study and make comparisons to other relevant reports and studies concerning the desirable composition of undergraduate accounting programs. Appendix F provides a list of the institutions included in the study along with their academic accreditation and their acceptability by the Michigan State Board of Accountancy as having a program corresponding to the requirements of the Board.

The results of the Michigan catalog study will be presented in three parts. Part One will review the total semester hour range and the changes that took place over the three time periods. Part Two will show the changes in each of the 16 institutions and for the five topic headings during the 13 year period and Part Three will compare the results of the Michigan catalog study with other reports and studies.

Part One--Semester Hour Review

The catalog survey revealed that the average number of semester hours required for graduation has decreased slightly over the 13 year period. Table 5.5 illustrates these changes.

In 1958, the range of semester hours was from 120 to 144 while in 1964 and 1970 the upper level fell to 133-1/3 with the lower level remaining the same. The change over the 13 year period in overall credit requirements was the result of four institutions reducing their requirements, four institutions increasing their requirements and the remaining eight institutions indicating no change. Although eight institutions did not change their overall credit requirements this does not necessarily indicate that no internal changes were made.

Part Two--Changes in the Topic Heading Contents

The 16 institutions over the past 13 years have shown changes in both semester hour requirements for graduation and content requirements for the accounting major. Tables 5.6, 5.7, and 5.8 indicate the topic areas for the institutions reviewed, the time periods covered and the changes that have taken place. At the bottom of each column in each table is a simple average for that column for the 16 institutions. The averages indicate several changes that have taken place over the years surveyed and these changes are outlined in the following paragraphs.

TABLE 5.5.--Required Semester Hours for Graduation with a Major in Accounting.

Year	Average Total Hours Required for Graduation	Range in Semester Hours	
		High	Low
1958	127.13	144	120
1964	126.92	133-1/3	120
1970	126.34	133-1/3	120

In addition, a comparison will be made with the changes in subject area requirements as reported in Horizons. This material is reproduced in Table 5.9 and supplemented with a column showing the percentage change over time which the original data did not have.

As noted in Part One, there has been a slight decrease in the total average hours required for graduation. No specific reason can be determined why any particular institution did or did not change its graduation requirements. One can only surmise that due to certain studies, certain institutions did review their offerings and make changes. Also, changes in faculty composition, i.e., age, degree holders, experience, etc. would contribute to a certain amount of change.

A second point is that over the last 13 years the free electives available have dropped 20.7 per cent. Free electives were calculated for each institution by determining the total electives available and then applying

TABLE 5.6.--1958-1959 Credit Requirements Based on Semester Hours.

School	Accounting	Economics	Quantitative	General Business	General Education	Free Electives	Total
1	30	6	6	30	56	--	128
2	24	6	6	25	46	19	126
3	24	14	11	24	15	26	124
4	34 2/3	16	5 1/3	20	36	16	128
5	45 1/3	5 1/3	10 2/3	18 2/3	40	10 2/3	130 2/3
6	46	6	9	30	31	--	122
7	24	6	8	16	40	30	124
8	40	10 2/3	10 2/3	38 2/3	28 2/3	4 2/3	133 1/3
9	16	8	14	28	62	--	128
10	20	6	6	30 2/3	49 1/3	16	128
11	40	12	14	30	28	20	144
12	24	8	8	30	44	10	124
13	32	8	9	25	37	17	128
14	22	11	11	20	38	18	120
15	35	9	6	25	47	--	122
16	24	9	7	28	41	15	124
Total	481	141	141 2/3	419	639	212 1/3	2034
n	16	16	16	16	16	16	16
$\bar{X}$	30.06	8.81	8.85	26.19	39.94	13.27	127.13

TABLE 5.7.--1964-1965 Credit Requirements Based on Semester Hours.

School	Accounting	Economics	Quantitative	General Business	General Education	Free Electives	Total
1	30	6	6	31	55	--	128
2	24	6	6	25	44	21	126
3	24	15	11	26	24	24	124
4	37 1/3	16	5 1/3	20	34	15 1/3	128
5	45 1/3	5 1/3	10 2/3	18 2/3	40	10 2/3	130 2/3
6	38	6	12	36	30	--	122
7	30	6	10	21	42	15	124
8	34 2/3	10 2/3	10	34	30	14	133 1/3
9	26 2/3	6	16 2/3	26 2/3	50 2/3	--	126 2/3
10	24	10	10	33	39	12	128
11	32	10	15 1/3	48	26 2/3	--	132
12	30	8	8	24	44	10	124
13	32	12	12	30	35	11	132
14	22	11	11	20	38	18	120
15	29 1/3	10 2/3	8 2/3	45 1/3	34	--	128
16	29	9	7	30	41	8	124
Total	488 1/3	147 2/3	159 2/3	468 2/3	607 1/3	159	2030 2/3
n	16	16	16	16	16	16	16
$\bar{X}$	30.52	9.23	9.98	29.29	37.96	9.94	126.92

TABLE 5.8.--1970-1971 Credit Requirements Based on Semester Hours.

School	Accounting	Economics	Quantitative	General Business	General Education	Free Electives	Total
1	30	6	9	31	52	--	128
2	24 2/3	5 1/3	5 1/3	32	39 1/3	20	126 2/3
3	24	9	11	28	24	28	124
4	26	8	6	20	46	14	120
5	45 1/3	5 1/3	8	18 2/3	40	13 1/3	130 2/3
6	31	15	15	24	37	--	122
7	32	6	10	18	42	16	124
8	38 2/3	10 2/3	10 2/3	34 2/3	22 2/3	16	133 1/3
9	26 2/3	6	16 2/3	26 2/3	50 2/3	--	126 2/3
10	27 1/3	13 1/3	14	22	33 1/3	10	120
11	26	10	15 1/3	52 2/3	28	--	132
12	36	8	8	20	44	12	128
13	30	12	12	34	33	13	134
14	22	11	11	20	38	18	120
15	29 1/3	10 2/3	8	45 1/3	34 2/3	--	128
16	27	9	6	32	42	8	124
Total	476	145 1/3	166	459	606 2/3	168 1/3	2021 1/3
n	16	16	16	16	16	16	16
$\bar{X}$	29.75	9.08	10.38	28.69	37.91	10.52	126.33

TABLE 5.9.--Minimum Subject Area Requirements of the Undergraduate Schools (Semester Hours Expressed as an Arithmetic Mean)

Subject Area	Present Program of 36 Schools	Past Program of 23 Schools	Net Change
Accounting	26.8	30.8	-4.0
Economics	10.6	11.0	-0.4
Quantitative	11.0	8.8	+2.2
Other Business	23.9	25.1	-1.2
Non-business*	41.4	33.4	+8.0
Other**	13.8	13.8	n.c

*English is included in this category. Arithmetic means for English are: present, 11.5; past 10.8.

**Defined as any choice between two or more of the categories designated above.

Source: Robert H. Roy and James H. MacNeill, Horizons for a Profession (New York: American Institute of Certified Public Accountants, 1967), p. 165.

these electives to the five topic areas where such an application could be made. Those electives that could not be applied were labeled "free" and placed in a separate column in Tables 5.6, 5.7 and 5.8. When compared to the national average reported in Horizons of 13.8 semester hours of free electives, the Michigan results fall behind. Table 5.10 indicates that four institutions increased their free electives from 1 to 11 1/3 hours, six

TABLE 5.10.--Number of Michigan Institutions that Changed Undergraduate Requirements in Certain Topic Areas for Accounting Majors from 1958-1959 to 1970-1971.

	General Education		General Business		Economics		Quantitative		Accounting		Free Electives	
	Number	Range	Number	Range	Number	Range	Number	Range	Number	Range	Number	Range
Increased	5	1-10	8	1 - 22 2/3	3	4-9	9	1 1/3- 8	6	2/3- 10 2/3	4	1- 11 1/3
Decreased	7	4-16	5	1 1/3- 8 2/3	7	2/3- 8	3	2/3- 1 1/3	6	1 1/3- 15	6	2-14
No Change	4		3		6		4		4		6	
Total	16		16		16		16		16		16	

institutions reduced their free electives from 2 to 14 hours and six institutions remained unchanged.

Third, general education, which excluded the quantitative and economics area also fell below the national average as reported in Horizons. The Michigan results show a decline from 39.4 hours in 1958-1959 to 37.91 hours in 1970-71 whereas Horizons reported 41.4 hours (non-business plus written and oral communications). Reference to Table 5.10 shows that five institutions increased their semester hours in general education from 1 to 10 hours, seven decreased their offerings from 4 to 16 hours and four institutions remained unchanged.

Fourth, general business courses, exclusive of economics and introductory accounting, were characterized by a rather small increase over the 13 year period. These results when compared with the national trend reported in Horizons seem to be contradictory. Horizons indicated a decline of 1.2 hours in general business while the Michigan results show a 2.5 hour increase. Reference to Table 5.10 indicates that eight institutions increased their general business hours from 1 to 22 2/3, five decreased their hours from 1 1/3 to 10 and three remained unchanged.

Fifth, economics showed a slight increase in semester hour requirements which is in disagreement with the national survey of Horizons. The semester hours increased from 8.81 in 1958 to 9.08 in 1970 in the Michigan

study while Horizons reported a decrease of .4 hours. Table 5.10 indicates that seven institutions decreased their offerings from 2/3 to 8 semester hours; three increased their offerings from 4 to 9 hours while six did not change. It is noted that the credits of those institutions which increased their offerings were much greater than the credits offered by the institutions showing a decrease even though the number of decreasing institutions exceeded the number of increasing institutions.

Sixth, the quantitative area showed an increase of 1.53 hours in 13 years. This is a 17 per cent increase. Yet, when compared to the results reported in Horizons of an increase of 2.2 hours or a 25 per cent increase, the Michigan schools lag behind. What is really significant is the number of schools reporting increases and the amount of these increases. Nine institutions reported increases from 1 1/3 to 8 hours while only three decreased from 2/3 to 1 1/3 semester hours and four remained the same. It was noted that many institutions indicated a desire for their students to take additional quantitative work in the form of electives.

Seventh, the Michigan results showed a very slight decline of .71 hours required for an accounting major. In comparison, Horizons showed a decline in the national average of four hours or a decrease of 13 per cent. Table 5.10 indicates that six institutions increased their semester hours of accounting from 2/3 to 12 while six

institutions decreased their semester hours from 1 1/3 to 15. Four institutions remained the same. Two of the Michigan schools contacted in this catalog survey indicated that changes were being proposed in their accounting curricula. One school's proposal was to unstructure the curriculum so that almost all courses in the major areas of study would be elective. A second school's proposal was aimed in the opposite direction of more structuring and more accounting courses. Certain accounting courses were to be dropped and others added so that the net effect of the change was an additional three courses to choose from.

The trends in accounting and general business in these 16 institutions were compared to the Michigan institutions offering accounting courses but no major or concentration. Nine institutions were found that had accounting courses being offered from 1958 to 1971. These nine institutions showed even more contradictions to the national averages listed in Horizons. Seven out of the nine institutions showed increases from four to eight hours in accounting, none showed decreases and two remained unchanged. It should also be noted that the seven increases were a part of an overall increased general business administration offering with a corresponding decrease in the liberal or general education areas.

In summary, Part Two presented the findings of the Michigan catalog study and compared these findings with the national sample found in Horizons. With the comparisons made over the 13 year period three general conclusions

can be made. First, slightly more accounting is presently required by the average Michigan institution than the reported national averages. Second, economics and general business requirements were slightly higher in Michigan than in the national averages and third, the quantitative, general education and free elective hours are lower than those hours reported on the national average.

Based on the arithmetic averages found in Tables 5.6 and 5.8 a "typical" Michigan institution offering a baccalaureate degree with a major in accounting can be constructed for the 1958-1959 and 1970-1971 periods. These typical programs are shown in Table 5.11. This table also illustrates the percentage change in the topic area and the per cent of the total semester hours for each year that the individual areas comprise. This summary table will be useful in the next part of the analysis.

Part Three-Comparison of Catalog Study and Other Studies

There have been several groups interested in the education of businessmen in general and accountants in particular. This section will present the recommendations and requirements of these groups and compare these groups with the Michigan study. The data exhibited in Tables 5.12 and 5.13 will be used as guides in this section.

The American Association of Collegiate Schools of Business (A.A.C.S.B.) requires that at least 40 per cent

TABLE 5.11.--Average Semester Hours Required for Accounting Majors in Selected Areas in Sixteen Michigan Colleges Offering a Major in Accounting.

Topic	1958-1959 Hours	1958-1959 % of Total	1970-1971 Hours	1970-1971 % of Total	Percent Increase (Decrease) using 1958-1959 as a base.
Accounting	30.06	23.56%	29.75	23.55%	(1.04%)
Economics	8.81	6.93	9.08	7.10	3.06
Quantitative	8.85	6.96	10.38	8.21	17.29
General Business	26.19	20.60	28.69	22.71	9.54
General Education	39.94	31.41	37.91	30.00	(5.08)
Free Electives	13.27	10.43	10.52	8.33	(20.72)
Totals	127.13	99.98%	126.33	99.90%	

TABLE 5.12.--Average Semester Hours by Topic Areas and Type of Institutions Compared to Horizons for a Profession.

	Michigan Institutions 1970-1971			
Topics	All 16 Schools	Non-A.A.C.S.B. Schools	A.A.C.S.B. Schools	Horizons
Accounting	29.75	30.74	25.44	26.8
Economics	9.08	9.30	11.11	10.6
Quantitative	10.38	10.38	10.33	11.0
General Business	28.69	27.30	24.66	23.9
General Education	37.91	37.94	37.77	41.4
Free Electives	10.52	10.18	12.00	13.8
Total Average Semester Hours	126.33	125.84	121.31	127.5

TABLE 5.13.--Comparison of Hypothetical Compositions to Actual Compositions of Undergraduate Accounting Programs.

Study or Report[a]	General Education (Includes Econ. & Quant.)	General Business (Excludes Intro. Account.)	Accounting (Includes Intro. Account.)
Ford[1]	55 - 67½%	25 - 35%	0 - 10%
Carnegie[2]	62½ - 67½	22½ - 27½	12½ - 15
AAA Standards Rating Committee[3]	50	25	25
AICPA Council Recommendations[4]	50	25	25
AAA Education Standards Committee[5]	50	25 - 30	20 - 25
Horizons[6]	49	19	21
AICPA Committee on Education and Experience[7]			
4 year model[b]	50	32	16
5 year model[b]	40	36	20
Michigan study[c]	45	23	24

[1]Robert A. Gordon and James E. Howell, Higher Education for Business (New York: Columbia University Press, 1959), pp. 147-213.

[2]Frank C. Pierson and others, The Education of American Businessmen (New York: McGraw-Hill Publishing Company, 1959), p. 226-7.

[3]American Accounting Association, "Report of Standards Rating Committee," The Accounting Review, XXIX (January, 1954), p. 40.

[4]Edward S. Lynn, "Educational Policies of AICPA," The Journal of Accountancy (March, 1963), p. 87.

[5]American Accounting Association, "Report of the Committee on Educational Standards," The Accounting Review, XXXIX (April, 1964), pp. 452-454.

[6]Robert H. Roy and James H. MacNeill, Horizons for a Profession (New York: American Institute of Certified Public Accountants, 1967), pp. 164-168. The percentages listed in the above table total 89 per cent due to the inability to allocate 11 per cent.

[7]Report of the Committee on Education and Experience (American Institute of Certified Public Accountants), p. 58.

of the total hours must be taken in areas outside business and economics.[16] Using Table 5.11 as a guide, the typical 1970-1971 Michigan institution meets the A.A.C.S.B. requirement if the free electives are included as part of the credits outside the business and economics area. It is fair to assume that this would be the case as the electives that could be used in general business, accounting or economics have been allocated where possible leaving the remainder as free electives in either the general education or quantitative areas. However, such a generalization should be carefully considered.

When the three Michigan A.A.C.S.B. member institutions are separated from the 16 institutions some rather striking similarities are found between these schools and the Horizons study. These similarities are noted in Table 5.12. The number of semester hours in general business, economics quantitative, accounting and the free electives are rather close. The primary difference is that in the general education area Horizons showed four more credit hours than the Michigan A.A.C.S.B. schools. When the non-A.A.C.S.B. schools are compared to Horizons, significant differences appear in the general education, general business, accounting and free elective areas. Thus, there is more similarity between Michigan A.A.C.S.B. institutions and Horizons than the non-A.A.C.S.B. institutions and Horizons.

Other reports and studies concerning the most desirable composition of undergraduate accounting education were referred to in Part One of this chapter and were illustrated in Tables 5.1 through 5.4. These tables are summarized in Table 5.13 along with the findings of Horizons and the Michigan catalog study.

Except for the general business area, the national average, as detailed in Horizons and reproduced in Table 5.9, approximated the suggested allocation made by the A.A.A. Education Standards Committee. If it is assumed that the free electives of 11 per cent were taken in the area of general business, then there is little difference between the recommendations of the A.A.A. and the national average reported in Horizons. With the exception of the general education area, the Michigan catalog study also approximated the A.A.A. recommendations.

Neither Horizons, the various A.A,A. committee recommendations or the Michigan catalog study approached the Ford or Carnegie recommendations. In particular, the emphasis on general education by Ford and Carnegie is not evidenced by the recommendations of the A.I.C.P.A., the A.A.A., the results of Horizons or the Michigan catalog study. Nowhere does it appear that more than 50 per cent of the course content should be in the general area and both the Horizons and the Michigan catalog study indicate less than 50 per cent of the total semester hours are allocated to general education.

In the area of General Business, the Michigan results are slightly less than the A.A.A. and Ford recommendations but compre favorably with the Carnegie recommendations. The national averages of Horizons are somewhat lower than all the recommendations and the Michigan study.

Accounting presents the severest separation between the recommendations and the results of various studies. The recommendations vary from 10 to 15 per cent of the total hours by the Ford and Carnegie reports to 20 to 25 per cent as recommended by the A.A.A. Nationally, Horizons reported 21 per cent and the Michigan study 24 per cent as the portion of total hours in accounting.

FOOTNOTES--CHAPTER V

[1]Gordon and Howell, Higher Education for Business, pp. 127-132.

[2]Ibid., p. 133.

[3]Pierson and others, The Education of American Businessmen, p. 227.

[4]American Accounting Association, "Report of the Standards Rating Committee," p. 40.

[5]American Accounting Association, "Report of the Task Committee on the Standards of Accounting Instruction," p. 41.

[6]American Accounting Association, "Report of the Committee on the Scope of the Four Year Accounting Major," p. 204.

[7]Ibid., p. 205.

[8]American Accounting Association, "Report of the Committee on Educational Standards," p. 447.

[9]American Accounting Association, "Report of the Committee to Compile a Revised Statement of Educational Policy," pp. 51-124.

[10]Ibid., p. 115.

[11]Standards of Education and Experience for CPAs, p. 128.

[12]Ibid., p. 132.

[13]Roy and MacNeill, Horizons for a Profession, p. 1.

[14]Ibid., p. 164-168.

[15]1970 Register, State of Michigan, Department of Licensing and Regulations, Board of Accountancy, p. xi.

[16]The American Association of Collegiate Schools of Business: 1916-1966 (Homewood, Illinois: Richard D. Irwin, 1966), pp. 29-68.

CHAPTER VI

RECOMMENDATIONS FOR AN EDUCATIONAL PROGRAM

Introduction

This chapter will recommend areas of academic work appropriate for the future growth of a public accountant in his profession. As stated in Chapter III which covered methodology, these recommendations will be based upon the data gathered from the card deck respondents, the respondent interviews, the results of the catalog review, the literature in accounting education, and upon the criteria established from a review of pertinent studies of the A.A.A. and the A.I.C.P.A. After the recommendations have been made, the implications for possible use and future research will be outlined.

Review of Card Deck, Catalog, and Literature Findings

Card Deck Opinions

A variety of rankings by the several card deck respondent classes were calculated and tested for statistical significance. Basically, most of the accounting respondents were in agreement on the rankings of subjects. The

conceptually oriented educators ranked the subjects in a manner similar to the accountants. However, the vocationally oriented educators were not in agreement with any particular group of accountant respondents or even with their conceptually oriented colleagues. There are certain courses within the five major topic areas that rank fairly high in the estimate of the respondents for the growth of public accountants.

Briefly, the five topic areas and the courses which were ranked highly in each topic area are as follows:

General Education.--Written and oral English, natural science--introductory, social science, philosophy, logic and humanities.

General Business.--The emphasis here seemed to be on the advanced levels of several business courses rather than the typical introductory courses. Particularly recommended were advanced courses in production, marketing, finance and management as well as courses in personnel, labor relations, and law.

Economics.--Although the area of economics consisted only of six courses, the emphasis seemed to be on the the money and banking, international economics, and managerial economics courses.

Mathematics.--Statistics courses, both advanced and introductory, were the primary recommendations in this area.

Geometry and trigonometry and finite mathematics for business were ranked just below the top half of the courses.

Accounting.--The majority of the accounting courses that are typically offered in an undergraduate program received very low rankings. Only taxation, work study and managerial accounting received recognition on the top half of the ranking scale.

Literature and Catalog Reviews

Chapter V--Results of Catalog Study and Comparison with Literature analyzed the literature about accounting education and reviewed the changes in the curricula of the Michigan institutions that offered an accounting major as part of a baccalaureate program. Four major points emerged from this review. First, most accounting groups interested in accounting education advocate a model that establishes percentage breakdowns as follows: General Education (including economics and quantitative courses), 50 per cent; General Business (excluding introductory accounting), 25 to 30 per cent; and Accounting (including introductory accounting), 20 to 25 per cent. Second, outside agencies have advocated more emphasis on general education--about the same emphasis that presently exists in general business--and a significant reduction in the major area. In fact, according to them any depth in the major area should be postponed until the graduate years

or a fifth at the undergraduate level. Third, the results of the catalog review of Michigan institutions tended to follow the outline of the accounting groups in the percentage allocation under the three headings. Fourth, over the several years that the literature was reviewed and the catalog study was conducted there was a decline in the emphasis on the number of accounting credits required for a major. There was a corresponding increase in general education and general business credits.

The future recommendations found in the literature are embodied primarily in Horizons for a Profession. Although the purpose of Horizons was to "delineate the common body of knowledge to be possessed by those about to begin their professional careers as certified public accountants," there are certain points brought out that apply equally as well for future growth.[1] These recommendations are outlined in the following paragraphs.

In the area of general education, importance was placed on humanistic subjects--art, music, logic, etc. Although no precise formulation was given, it was strongly recommended that logic and ethics be a part of the common body. Logic was advocated for its ability to enable the student to develop a methodical reasoning process and ethics was advocated for its ability to enhance the ethical reputation of the profession. Written and oral English is needed for basic communication ability. Economics should be included because of the knowledge contained in its

study. A knowledge of economics is basic to the development of accounting thought. An approach to the analysis of a variety of micro and macro economic problems is necessary as these problems affect the accountant, his employer, management, and the government according to Horizons. The behavioral sciences should also be represented in the accountant's studies. Tomorrow's C.P.A. should be prepared in the social sciences. His knowledge should allow an insight into organization and individual behavior. Mathematical requirements should be such that the accountant has become literate in the language of mathematics, but not necessarily literary. Understanding is to be emphasized in preference to manipulative skill. Accounting seems very likely to remain the basic measurement process for organizational decisions. Increasingly and inevitably accounting itself will be taught and used with mathematical notations. Increasingly and inevitable accounting will be used in conjunction with other mathematical, statistical and probability methods both for sound accounting and auditing procedures and for enhancement of the organizations served by C.P.A.s.

Law is a topic that is vital to the environment of all men. Philosophically, the C.P.A. should be aware of the place that law has in our society. Conceptually, the C.P.A. should be aware of the interrelationships between federal, state and local law, the roles of common and statutory law, and various legal administrative procedures.

Whether this knowledge of law should come from a business law course or a law course is not critical.

General business courses, or the functional field courses, cover a wide spectrum in the typical business administration program. Which of the areas in business administration are important to the accountant? Gordon and Howell, although decrying the mass of descriptive courses in business administration did recognize the need for retaining some of these materials:

> The business student needs some understanding of each of the kinds of markets within which the business firm must operate. This entails some study of the structure and functioning of the commodity, financial and labor markets. This work should for the most part be at a high analytical level, although a certain amount of institutional description cannot be avoided.[2]

Since the accountant will be dealing with matters that are intrinsically financial he should be exposed to finance. A knowledge of capital needs, sources of funds, financial institutions, cost of capital and dividend policy are but a few of the areas he should be familiar with. Production is another area of basic study. To understand the problems of clients in the manufacturing sector, the C.P.A. should have a sound foundation in the basic processes of a manufacturing firm. Cost accounting, production control, division of labor, systems of analysis, audits of manufacturers are but a few of the areas the C.P.A. should be familiar with. Mathematical techniques and financial considerations are topics from other areas that are also useful in the study of production.

Marketing is an area that for many years was not considered an appropriate topic for the fledgling C.P.A. However, the marketing function covers more than just physical distribution and sales generation. Marketing decisions cover many areas in other general business and general education topics. Again, like finance and production, the beginning C.P.A. should be familiar with marketing so that the information he provides can be used effectively when making a decision.

Management is another functional field of general business that should be mentioned. Much of the current theory of management is imbedded in the behavioral sciences so that a management course requires a knowledge in the behavioral sciences, mathematics and statistics. A management course, per se, is not a requirement but a course in management would tie many of the functional field and general education courses together to demonstrate that management decisions are really interdisciplinary.

There are other general business courses that are available and these may be included in a listing, if so desired. The ones that have been discussed are those that are of primary importance as outlined in Horizons.

In the accounting area, Horizons provides a detailed summary of the context of accounting knowledge needed by the beginning C.P.A. This knowledge is classified by a relative depth for each topic designated as "thorough," "good," and "fair."

Thorough Knowledge.--The beginning C.P.A. should be thoroughly familiar with the following:

1. The functions of accounting: who uses accounting information and for what purposes.
2. The communication of accounting information: statement presentation for maximum utility and clarity.
3. Double entry system: theoretical basis and application as an analytical tool.
4. Auditing standards: general standards, standards of field work, standards of reporting.
5. Internal control: principles and applications.
6. Professional Ethics.

Good Knowledge.--This is a high degree of proficiency but not expert knowledge.

1. Accounting theory and terminology.
2. Cost classification and cost behavior.
3. Major categories of resources.
4. Major sources of capital.
5. Auditing methodology.
6. Sampling, statistical inference.
7. Income taxes.
8. Business law.

Fair Knowledge.--This is a level of knowledge that is common to both C.P.A.s and non-C.P.A.s.

1. Computer systems, functions of components, programming, internal control functions.
2. Other accounting equipment and bookkeeping tools.
3. Quantitative techniques.
4. Types of formal organizations.
5. Organization design: authority, responsibility, information handling, retrival and communication.
6. Taxes other than income taxes.
7. Governmental agencies.[3]

This brief review has outlined the findings of the card deck study, the catalog review, and the literature on accounting education. The next section of this chapter will set forth the criteria implied by the pertinent studies of the A.A.A. and the A.I.C.P.A.

Criteria

Criteria are needed as a guide for analyzing the results of the card deck, catalog and literature reviews and in the preparation of recommended areas of study for the future growth of public accountants. These criteria were developed from the 1968 Committee Reports of the A.A.A. and Horizons for a Profession of the A.I.C.P.A.[4,5] These two reports were selected because they represent the current thinking of the groups most interested in all phases, present and future, of accounting education. The following three categories outline the basic standards that will be used.

Educational Standards

The standards for the undergraduate curriculum and the implications for quality education are as follows:

1. The most important standard is to educate the person to keep learning for himself, and to be adaptive so that he may be able to adjust to new situations in both business and professional life.

2. Within an overall education there should be a proper balance between general knowledge and the technical-professional knowledge needed as the entrance requirement to the profession.

3. To accomplish the objectives of accounting education the profession must realize that the educator has certain real limits. Only so much material can be included in a four year program.

4. Qualititative factors not quantitative factors should be employed. The content of courses rather than titles and specific proportions of liberal, business and accounting studies will develop the person, his professional attitudes and continued desire to learn.

General Education and General Business Standards

The standards for general education and general business will not provide a specific percentage breakdown but instead should create certain capacities for growth of the individual. To implement this objective the following breakdown is outlined.

1. A development of the basic skills in logical and objective thinking.

2. A development of communication skills.

3. A development of cultural and ethical skills.

4. A development of physical skills.

5. A development of an understanding of the socio-economic-political framework of society.

6. A development of an understanding of organizations, functions and business problems so that the individual has a basis for analyzing business situations.[6]

Translation of each of these six areas into specific courses or credit hours is not intended. Nor is a time period specified for completion. The emphasis is on the subject matter coverage, recognizing that the individual college or university will structure this knowledge into courses, hours and years of study in various ways.

Accounting Curriculum

The development and design of an accounting curriculum is based upon objectives whose achievements are desirable. The objectives are summarized as follows:

1. Developing the student's ability to work and communicate effectively, to think analytically and objectively and to become mentally disciplined.

2. Developing a student's awareness that there are great possibilities for self-education during his career.

3. Developing an appreciation within the student of a high standard of integrity and objectivity in reporting.

4. Developing an attraction to accounting careers for those students who seem to possess the potential for making a contribution to the advancement of accounting and who have the opportunity for a reasonable chance of success in the accounting profession.

To achieve these objectives an accounting curriculum should be developed that utilizes all of them. Frequently, good teaching can cover some, but not all, of these objectives. Achievement requires a combination of good teaching and sound curriculum planning. Instead of outlinine particular courses in accounting, it is suggested that the study of accounting could be divided into three elements.

First, the purposes which accounting serves, classified as managerial, financial, legal and/or social should be developed. Second, accounting practices classified in the same manner in which accounting purposes are classified should be described. Third, each area of accounting practice should be appraised in terms of the extent to which it fulfills its stated purposes.

These criteria along with the card deck results, the catalog and literature reviews were utilized to prepare the next section, Recommended Areas of Study.

Recommended Areas of Study

The recommendations that follow are outlined in three major areas of study: general education, general business and accounting. These recommendations are not

in the form of specific course titles and course descriptions, but rather are outlined in terms of areas of study.

General Education

1. Logical and objective thinking

    a. Philosophy and/or logic--The literature reviewed indicated that the ability of an individual to think in as clear and precise a manner as possible should be strongly stressed. Philosophy and logic are a means of achieving this ability. The card deck respondents ranked this subject in 16th place and the subsequent interviews showed a favorable response to the inclusion of such a subject area in a curriculum. Only 5 of the 16 institutions required philosophy or logic with the remainder generally having this subject available as an elective. The program should stress training and discipline in the thinking process, its concepts and sequences and in the methodology of experimentation and confirmation of the hypothesis.

    b. Mathematics--The respondents generally placed all mathematics courses, except the statistics sequence, in the bottom half of the rankings. This is possible evidence of a general distaste for, fear of or misunderstanding of mathematics by the respondents. The literature indicated

that more mathematics should be required and the catalog review indicated an increase in the mathematics requirements of the 16 institutions reviewed. Thus, even though there may be a general distaste for mathematics, the quantitative techniques should be stressed along with the development and applications of mathematical models. Educational standard 1, page 168 and general education and general business standard 1, page 169 would support this emphasis on mathematics. Typically, the material should cover such topics as solutions of simultaneous equations, graphing techniques, logarithims, algebra, calculus, sets, permutations, combinations and probability distributions.

c. Statistics--This course showed the only departure from the general downgrading of mathematics by the respondents. Advanced statistics received an 8th place ranking while introductory statistics ranked 15th. The statistics rankings support the literature which also advocates a thorough knowledge of statistics, particularly for those who are entering public accounting. Fourteen out of 16 of the colleges reviewed required at least one course in statistics and if electives were

available they highly recommended a second course. Material emphasis should be on probability theory, sampling techniques, regressions and correlation. In addition, applications to the business, industrial and accounting segments of society should be demonstrated.

d. Sciences--Natural science received the second place rankings by all respondents. The literature indicated that science was a desirable area of study and the catalog review disclosed that most colleges require a minimum level of one course (which may be one or two semesters or from one to three quarters in duration). A science should be introduced to the student to develop the scientific method of experimentation under certain controlled conditions. Any of the several natural sciences would fulfill this requirement as they all generally employ similar techniques.

2. Communications abilities

Written and oral English received the overall first place ranking from the card deck respondents. The literature, and in particular Horizons, also supports this ranking. The catalog review however did not find any great emphasis on English. Most catalog requirements had one course in composition with a second course in some type of

literature. Speech was frequently an elective. However, since a great deal of the accountant's time is spent in communicating economic facts, he must be able to effectively communicate. He must be able to read, write and talk in a clear, constructive and comprehensive manner. To develop this ability courses should be considered that guide writing and speaking, illustrate correct uses of grammar and the principles of rhetoric, and provide practice in expository writing.

3. Cultural-ethical development

Humanities--introductory and advanced were utilized in the card deck to determine the perception of the respondents as to whether courses that deal with the development of personal qualities are important to the accountant's growth. These two cards ranked 24th and 20th, respectively. The more current literature is sympathetic to a curriculum that allows for the inclusion of cultural-ethical courses. Typically, the catalog review showed that the schools which had a liberal arts background included more of these courses in the general education area than did the typical state institution. Those state institutions which have recently grown from a teachers college or technical-vocational background usually had a minimum requirement in this area. The reason for including cultural-ethical courses is that in addition to developing the skills of thinking and communications, there should be an opportunity for the development of personal qualities.

Specific courses are difficult to identify because of the personal tastes involved in selection. However, courses in the area of art, history, foreign languages, geography, religion, and philosophy might be considered.

4. Economic-social-political development

    a. Economics is an area that had a rather wide range of response. The six courses ranged from 3rd to 26th in the rankings. Money and banking introductory and advanced ranked 4th and 3rd respectively. Throughout the literature there is support for a basic knowledge in economics. However, this knowledge is primarily in micro and macro economics. Simons found support for money and banking in his study when many of the respondents to his questionnaire stated that this was one course they wish they had taken as part of their undergraduate degree.[7] The catalog review disclosed that most schools required two courses in economics for a major in accounting. Other courses, particularly money and banking, were recommended but not required. Principally, the student should have an understanding of economic methodology and be able to use some of the tools of the economist in analyzing economic problems. He should have a thorough grounding in both micro and macro economic

economic theory. The related policy implications from such courses should also be emphasized. Where electives are allowed, other courses in the economics area should be taken, particularly money and banking.

b. Sociology, psychology and political science were not on separate cards. These three subjects were described on one card--social science. This card ranked 11th by all respondents which indicates that for the future growth of the accountant, there is very strong appeal for a knowledge of social science. The interviews also supported the card deck findings. The literature does not specify any precise quantities of these three courses that should be included in any curriculum but it does indicate the importance of having some knowledge in each of these three areas. However, most of the colleges indicated that two of the three topics represent the typical requirement. Again, those schools having a liberal arts background typically recommended all three courses plus electives whereas the more traditional schools follow the minimum requirement.

   1. Sociology gives the student an understanding of society, group behavior, individual behavior with the society and the effect

that these behaviors have on institutions and concepts.

2. Psychology concerns itself with the behavior of humans and how behavior is influenced, predicted and understood. Psychology also teaches how people learn, think, fear, hate, etc., and how personalities develop. Together, sociology and psychology complement each other and should enable the student of business to understand such things as motivation, leadership, perception, emotion, group dynamics, attitudes, values and techniques for various forms of behavior particularly related to business.
3. Political science is concerned with the functions of government and the requirements for government. It should demonstrate the purpose of government and the manner in which the functions of government are reflections of the general social practice.

General Business

Five areas of business administration should be studied by the prospective public accountant. These core courses should be organized around the fact that the major impetus should be an understanding in depth of the organization, problems and functions of business to provide a

basis for objective analysis of various business situations. The material should provide an opportunity to apply logical thinking, quantitative analysis and communications to various business problems.

1. Finance--The card deck respondents placed corporation finance--introductory and advanced in 34th and 33rd place respectively. The catalog review revealed that one course in finance was required by most institutions as part of the business administration core. The literature supports at least one course in finance that is not of the topic survey type. The area of finance draws upon the use of economics, mathematics and statistics, accounting and communications. Typically, the emphasis should be on the analytical approach over the more traditional descriptive approach. Emphasis on strategy in the management of an enterprise should be of primary importance in financial planning.
2. Marketing--Introductory marketing was ranked 17th while the advanced course was placed 7th. Typically, the older literature mentions that marketing is a course that may be taken but is not really necessary. However, the more current literature provides a different insight in that it recognizes the evolution that has

taken place in the content level of undergraduate marketing courses. The catalog review tended to follow the older literature in that many schools recommended either marketing or management. Typically, marketing combines the disciplines of psychology, economics, sociology, statistical analysis, communications, and accounting to generate information for marketing decisions. The development and obtaining of information about consumer tastes and markets plus marketing institutions should be of prime importance in the development of the student.

3. Production--Like marketing, production has been a course that has had little to do with the typical undergraduate accounting major. Yet, when the practitioners and academicians ranked the introductory and advanced courses, they placed them 13th and 9th respectively. This would indicate a desire on their part that such a course be included at a level somewhat above the introductory level. From the literature, a great deal of support cannot be found for a production course beyond the introductory level in a four year curriculum. The catalog review showed that four of the institutions required production while three have no production course

offerings and the remainder have it available as a business elective. Despite this rather pessimistic review, production should be included in the basic core. Justification for its inclusion rests on the general business standard, number six, page 169, which states that for growth "a development of an understanding of organizations, functions and business problems so that the individual has a basis for analyzing business decisions." is desirable. Primarily, production is concerned with the manufacturing of a product that provides a consumer with goods at a competitive price, at low costs and making effective utilization of productive resources. In addition, planning and control play important parts in the effectiveness of production.

4. Law ranked 22nd and business law ranked 41st by all respondents. The interviews provided a similar response. The literature typically relates to business law with little or no mention of other law courses. From the catalog reviews business law was found to be required course. Yet, to restrict the course solely to business law would be too confining in content. Granted the business man must have a knowledge of contracts, negotiable instruments, etc.,

but he should also be aware of the other facets of law outside the world of business. The course should not be a tool but, instead, a general course. It should illustrate the role of law in our society and demonstrate the effect it has on economic, political and social relationships. In addition, law provides a perfect vehicle for integrating ethical and philosophical ideas into the decision making processes which apply to certain business decisions.

5. Business organization and control--Although this topic did not appear on a card, the contents of the topic did appear under the heading of Business and Industrial Management. The introductory and advanced courses were ranked 39th and 38th respectively by the card deck respondents. The catalog survey generally showed that business management like marketing is not required but is highly recommended. It frequently was paired with marketing and the student could chose one or the other, and, in some cases both, if there were enough electives available. Much of the literature is noncommital on this topic. Even Horizons does not greatly emphasize the managerial-organizational control problems faced by the manager. However,

for the individual to develop an understanding of organizations, functions and business problems so that he can analyze business situations, such an area of study is important. Such a course should draw heavily from the behavioral sciences as the study of organizations is essentially behavioral. The principles of organization and control have been derived from both research into human behavior as well as successful practice. The accountant will work with many types of persons in various levels of organizations. Thus he will need to understand the links between the organizational processes and the control processes of the business he would be working with.

Accounting

Although the respondents to this study generally ranked the technical accounting courses quite low, they should not be completely excluded from any plan of accounting education. The respondents indicated, through the card decks, and even more strongly through the interviews, that more courses in principles, intermediate and advanced accounting topics were not required. In fact, many indicated a redundancy of topics within these three course areas. Courses in cost accounting ranked a little higher but were still in the bottom third of the rankings. Auditing principles and auditing practices ranked 42nd and 44th

respectively. Most interviewees felt that procedural detail should be kept to a minimum and that emphasis should be placed on the principles of auditing. Taxation received high rankings with the introductory course ranked 5th and the advance course ranked 12th. The interviewees felt quite strongly that a good knowledge of taxation that was being continually updated was essential for the growth of the accountant. Managerial accounting received 23rd place. This is a course area that the interviewees felt quite necessary for someone in management services but not overly necessary for someone in the accounting or tax segments of the firm. Work study ranked 6th in overall importance with mixed emotions being expressed by the accounting interviewees as to the worth of work study to both the firm and the student.

The literature of accounting typically has outlined the following as basic accounting courses: introductory, intermediate, advanced, cost, auditing, and federal taxation. This sequence has been the standard for an accounting major for many years and most of the current literature supports this sequence. More recently the literature has included topics on courses outside the basic core as being strongly recommended for majors. These included managerial accounting, systems analysis, data processing and work study.

From the catalog review comes support for the results found in the literature regarding the typical basic course outline. The review also showed that all

colleges, with two exceptions, have a large number of course offerings in accounting over and above the basic core. These courses represent topics in government, budgeting, statement analysis, C.P.A. problems, partnership accounting, internal auditing, state and local taxation, automation accounting, corporate training seminars and controllership.

From the results of the card deck, the literature and the catalog review, the following recommended areas of accounting study are proposed. The recommendations are in two areas--basic courses and alternative courses. The basic courses follow the typical model of course work while the alternative courses provide for topics quite relevant for the growth of public accountants.

1. Basic course areas

    a. Accounting principles, introductory--With the continual state of flux in the introductory course, it is almost impossible to specify proper subject material. The student should be made aware of the definitions and measurement problems of net income, presentation of financial data and its limitations, accumulation of data, and the use of data for various analyses and interpretations. The course should not be a survey but should give an overall view of accounting, treating some topics lightly and others at considerable length.

b. Accounting principles, intermediate--The intermediate course emphasizes an understanding of the conceptual framework of accounting. Critical thinking about the basic concepts, postulates, principles and rules upon which accounting is built is a major objective of the course. Current practice and current issues should also be critically evaluated.

c. Accounting principles, advanced--This is a continuation of the financial accounting sequence that essentially considers increasing the technical competence of the student in areas typically not covered in either the introductory or intermediate courses. Problems of formation, organization and structural changes of various business entities plus the expansion, contraction and consolidation of organizations after their formation are topics common to the advanced sequence.

d. Cost accounting--The material covered in this course should look at three basic areas:

   1. Accumulation of data in such a manner as to make it useful in the planning, control and decision-making sequences.
   2. Evaluation of the data in order to give the firm an idea of how it is functioning in regard to its cost.

3. Utilization of information that is accumulated and evaluated.

e. Auditing--Basically, the primary objective of the auditing course should be to instill an understanding of basic auditing concepts and the application of these concepts to examining, evaluating, and reporting financial data. The current practice of auditing should be understood along with the recognition of alternative methods of handling problems. Procedural detail should be kept at a minimum. Rather than spending an inordinate amount of time on developing audit programs, a more theoretical approach might be followed, i.e., what ought to be rather than what is might be studied.

f. Taxation--The primary purpose of a course in income tax is to acquaint the student with the basic principles of tax law and give him a basic knowledge of the technical aspects of taxation. This course should enable the student to understand how taxes affect business decisions, to understand how the concepts of taxable income are related to an accounting concept of income and to understand and be able to utilize professional tax help.

2. Alternative course areas

   a. Managerial accounting--This topic ranked in the top half of the respondents rankings, although it did not receive the acclaim that taxation did. The objectives of the managerial accounting course should be to examine the kinds of information management needs for various purposes. This would include information for planning and decision-making, information for accountability and information for control. Techniques are employed that require knowledge in mathematics and statistics, certain behavioral science courses, and accounting trends and techniques.

   b. Data processing--Although data processing was ranked slightly below the upper half of courses, it is nevertheless quite important to the development of the future growth of the C.P.A. There has been continued emphasis on data processing services so that an accountant with little or no knowledge of such services is outdated. The support from the literature is scattered but exists primarily in the more recent articles. College catalogs reviewed showed a shift toward including data processing either as a requirement or as a strongly recommended elective. Concurrent with the basic

or introductory courses in accounting should be a course in electronic data processing. Knowledge of a computer language and programming would be essential. Certain portions of courses in cost, managerial accounting, taxation and auditing should be allocated to introducing how the computer can be used to solve problems. In fact, recent developments have made the computer usable in certain portions of the introductory accounting sequences.

c. Systems analysis--The accounting student should have some knowledge of accumulating and processing data that is needed for analysis and informational purposes and, also, how such data systems are designed and implemented. There is a close relationship between managerial accounting, data processing and systems analysis. They all contribute to internal information flow in a particular manner. The accountant should be made aware of the kinds of information needed for a variety of purposes by management and how this information is obtained and disseminated. In addition, the control over such systems, the types of such systems, and the degree of electronic and mechanical sophistication in each system are requisite items of knowledge.

d. Work study--Although work study is not a course in the sense of an organized classroom activity, it has found acceptance as a means of interface between the knowledge achieved in class and the real world. If such a course is offered it should be done under the closest of supervision, otherwise the experience may turn into a term of wasted effort on the part of all persons concerned. Frequently, work study is an elective and only those students who are qualified may elect to take such a course. The overall respondent ranking was 6th while the educators, both conceptual and vocational, ranked work study 2nd.

Summary

There are other courses that are taught in accounting curricula, but the courses listed above represent a core of accounting courses that would be needed for the growth of the public accountant. It is noted that it is not so much the accounting courses that are needed for future growth, but, rather courses in general education and general business. The respondents indicated this by including the many general education and general business courses in the top half of the rankings. Various groups interested in accounting education have also recognized the importance of such general courses and have emphasized them in their committee recommendations. The main

emphasis is on a background that will allow the public accountant to think logically and clearly and to be able to recognize the various inputs into decisions that come from outside the world of financial data.

One final point should be made concerning the place of general education and general business in a curriculum. Typically, the general education courses are taught in the first two years of the program and the last two years are devoted to the business courses and the major area. If we are to relate these courses as has been advocated throughout this chapter, then there should be more integration of these three areas. A vertical integration of general education, business, and accounting courses is a viable alternative. Certain of the tool subjects such as mathematics, statistics, and written and oral communications must be taken as early as possible. Then, instead of cramming the humanities and behavioral courses into the first two years, they could be spread over the entire collegiate program and thus give a better balance to the overall education of the future accountant.

There are problems inherent in this suggestion. Course prerequisites present scheduling problems. Transfer students may not be able to complete the program in the prescribed time. Opposition will come from areas outside the business school. And, finally, there may be a general reluctance to try anything new. However, where possible, vertical integration of course work would seem to be a more

desirable alternative than the present system that exists in many colleges and universities at the present time.

Implications for the Study

Three general areas of use for this study are considered in this section. The first two areas will give the reader some indication of specific applications that might be made of these results. The third area will suggest further research that could be undertaken based on this study.

Program Evaluations

Instructors and department chairmen should be involved in a continuous evaluation of the program or programs of their particular institution. If an accounting program is to meet the current and projected needs for public accountants, those evaluating the content of such programs must have up-to-date data by which to perform the evaluation. Therefore, a continuous evaluation program ought to be carried on to assure adequate pre-employment education for current and projected needs. The evaluation can be done subjectively or objectively, with the latter the most reliable. However, an objective evaluation depends on the availability of a set of standards in some useable format. The outline of the recommendations in part four of this chapter, supported by the criteria for topic inclusion, is suggested as a possible set of standards for such an evaluation.

Although no specific course titles were suggested or specific contents outlined, areas were provided under which the department could determine whether its offerings were relevant to the future growth of its accounting graduates. If a course (or courses) is recommended for a particular area of study, there should be some means of comparing the department's offerings against the recommended areas of study. A pattern is suggested for such an analysis in Figure 6.1 for the General Education area. Other areas may utilize the same format.

The courses that would appear under the topic area headings on this checklist would not just be a recapitulation of the college catalog. Instead, the courses to be included would be those that would be considered desirable for the growth of the accountant. These courses would be derived from this research, Horizons for a Profession, the 1968 Committee Reports and other pertinent literature reviews. Consequently, when the comparison is made between the courses presently offered and those that should be offered, the checklist illustrated in Figure 6.1 could be utilized. Once the checklist is complete, the courses that are highly recommended for the future growth of public accountants should have few if any checkmarks in either the "Actively Considered for Removal" or "Not Considered" column. If there are a significant number of checkmarks in these columns, then a review is indicated as it would seem that the particular department is not considering

Topic Area	Presently in Program	Actively Considered for Adoption	Actively Considered for Removal	Not Considered
General Education				
Philosophy				
Logic				
Mathematics (several types)				
Science				
Statistics (several types)				
Communications (oral and written)				
Cultural areas (several types)				
Behavioral areas (several types)				
Political Science				
Economics				
Law				
Plus any other course areas that are deemed relevant				

Figure 6.1.--Format of a Checklist for Program Evaluations.

those courses deemed important for the growth of public accountants.

Career Guidance

The principal purpose of accounting education is to prepare students for careers in accounting and to prepare them to deal efficiently and effectively with problems they will be facing. These problems will not be in their professional domain alone but also in their social and political domains. As the accounting function in our society grows, it is inevitable that the part played by the accountant will grow equally as fast. The demand for well-educated accountants has been high for many years and will continue to be high in the future.

The development of the ability to analyze and solve problems of a diverse nature should be one of the goals of professional education. Solutions to such problems require sound judgement, reasoning and knowledge. These skills must be developed by educators in the students through the educational processes. As part of guiding students in the courses or areas that will develop and sharpen these skills this research will provide useful insights. The research has indicated several areas that the person who is interested in accounting as a career should consider in planning his academic program. Anyone considering entering the profession of accounting must realize that accounting involves a considerable body of theory. But it should also be realized that a

background of education which is broader than that provided by just studying accounting procedures is necessary. This research provides an outline of the areas that should be considered by these future accountants. These areas were developed after considering current opinion, surveyed by card decks and interviewing, the present literature, and a review of course changes in the catalogs. Therefore, the recommended areas of study have a certain amount of legitimacy and are not just subjective estimates.

The purpose of the general education area is to develop logical and objective thinking, communicative abilities, cultural-ethical aspects, and economic-social-political awareness. Frequently, individuals question the relevance of all this general education. The advisor can use this research to point out the importance of general education based on the literature, the rankings and catalog reviews. General education must be carefully explained and not just dismissed as so much work that must be taken before the student can get to the important subjects--his major. Again this research points out the importance of general education to future growth of accountants.

Guidance in the general business topics has as its objective to broadly educate the student in core areas of business so that he has an understanding of the organizations, problems and functions of business in order to provide him with a basis for an objective analysis of

various business situations. The material covered should provide an opportunity to apply logical thinking, quantitative analysis and communications to various business problems. Again, this research provides the rationale for a core of study in the general business area supported by opinion and literature reviews. There are other business courses that can supplement this basic core in particular areas of study or there are advanced courses that can add depth to any of the core courses. However, an advisor should make sure that the core courses are covered and then use electives if added depth is desired.

In the accounting area, an advisor could use this research as a guide for the basic courses that are necessary for the development of basic skills. Accounting courses represent the skill area for the student and as such he should have a thorough understanding and knowledge of these basic skills. The six courses outlined in part four of this chapter are those that are considered as basic. Other courses are available in most institutions in the accounting area but these should be considered only after the basic skills have been acquired and then selected by the student after considering his future plans.

In addition to this research, guidance can be gained by using a series of materials showing the student of accounting what his education should encompass and why the variety of courses is important to his development.

These materials might include the following as a source base:

> Horizons for a Profession by Robert H. Roy and James M. MacNeill.
>
> Report of the Committee on Education and Experience Requirements for C.P.A.s, published by the A.I.C.P.A.
>
> Education for Accountancy by Harry Simons.
>
> A Statistical Survey of Accounting Education: 1967-1968 by Doyle Z. Williams.
>
> Committee Reports--1968,published by the A.A.A.
>
> The Education of American Businessmen by Pierson and others.

There are articles in various journals that an advisor could use to keep current on trends in accounting education. These articles usually appear in The Accounting Review and The Journal of Accountancy. In addition, there are seminars that can provide a means of guidance which allow students who are interested in their education to inquire as to why the program is structured in its present form. This type of forum allows the students, the faculty and invited practitioners to study the program and examine it in the light of future requirements.

Future Research

This research has provided a basis for analysis of accounting education on the state level. Future research could replicate this study every two or three years to discern any trends, either favorable or unfavorable, in accounting education. Such research would be good for a

particular state to have conducted as there is frequently no means of formally gathering or disseminating this information. As noted in the literature review, state studies of accounting education are noticeably absent.

Certain specific areas of public accounting could be studied to determine if there are any needs that are being left unfulfilled by an undergraduate education. As an illustration, management services has been a growing area of endeavor for many firms. A question might be raised as to the type of education necessary for someone who enters this particular phase of public accounting. Does this person need a typical undergraduate accounting major, or would some other sequence of courses be more beneficial? This research could be used as a model to determine the perceptions of what education is recommended for someone entering management services. A similar format could be used--card deck, interviews, literature and catalog reviews--to prepare the recommended basic course areas of study.

This particular research did not provide any precise formulation as to courses and completion times for the degree. A logical extension would be to use this research and formulate a plan of study outlining the basic courses and hours for a degree. Such research might provide support for continuing the present four year program or revamping the program into a five year undergraduate major

or establishing a four year undergraduate major with the fifth year a year of specializing in advanced topics that leads to a graduate degree.

FOOTNOTES--CHAPTER VI

[1]Roy and MacNeill, Horizons for a Profession, p. 2.

[2]Gordon and Howell, Higher Education for Business, p. 186.

[3]Roy and MacNeill, Horizons for a Profession, pp. 192-3.

[4]American Accounting Association, "Report of the Committee to Compile a Revised Statement of Educational Policy," pp. 56-60, 66-87.

[5]Roy and MacNeill, Horizons for a Profession, pp. 191-267.

[6]American Accounting Association, "Report of the Committee to Compile a Revised Statement of Educational Policy," pp. 66-67.

[7]Simons, Education for Accountancy, pp. 38-40.

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APPENDICES

APPENDIX A

ILLUSTRATION OF INSTRUCTION CARD, DATA CARDS AND A SUBJECT CARD

ILLUSTRATION OF INSTRUCTION CARD,

DATA CARDS AND A SUBJECT CARD

INSTRUCTION CARD

1. Please complete Data Card 1 if you are an academician and Data Card 2 if you are a practitioner. Do not complete both data cards.

2. Starting with the most important card on top, arrange the remaining course-description cards in the rank order in which you believe to be their importance to the growth of a beginning public accountant. The Introductory Level Card for a subject does not have to be ranked higher than the Advanced Level Card for that same subject.

3. After completing the ranking, check the rankings again to make sure that you are satisfied with the order of preference.

4. Place the cards in the stamped envelope with the data card and deposit in the return mail.

DATA CARD 1--ACADEMICIANS

1. Teaching specialities, if any_____

_____

2. Total number years of full-time teaching experience_____.

3. Percentage of your total teaching load that you normally spend teaching undergraduate courses_____ and/or graduate courses_____.

4. C.P.A. Yes_____ No_____ Year of certification_____.

5. Educational background (highest earned degree listed first).

Degree(s) Year(s) of graduation

DATA CARD 2--PRACTITIONER

1. Principal activity: Auditing_____ Taxation_____
   Management Services_____
   Other (Specify)_____
   _____

2. C.P.A. Yes_____ No_____ Year of certificate _____.

3. Experience: How many years have you been a public accountant? Please include those years before certification._____.

4. Staff level: Partner _____ Manager _____ Senior _____
   Junior _____ Other (Specify)_____

5. Educational background (highest earned degree listed first).

   Degree(s) Year(s) of graduation

WRITTEN AND ORAL ENGLISH

Nature of language, composition, writing, personal delivery, persuasion, preparation and presenting ideas.

APPENDIX B

THE TEN LARGEST C.P.A. FIRMS

IN THE STATE OF MICHIGAN

THE TEN LARGEST C.P.A. FIRMS

IN THE STATE OF MICHIGAN

Alexander Grant & Co.

Arthur Andersen & Co.

Ernst & Ernst

Haskins & Sells

Lybrand, Ross Brothers & Montgomery

Peat, Marwick, Mitchell & Co.

Price Waterhouse & Co.

Seidman and Seidman

Touche Ross & Co.

Arthur Young & Co.

APPENDIX C

SMALL C.P.A. FIRMS IN THE STATE OF MICHIGAN

SMALL C.P.A. FIRMS IN THE

STATE OF MICHIGAN

Addis & Company

Adelson-Adelson & Cutler

Algaze and Koretz

Aronoff & Malin

Austin, Washington & Davenport

Baditoi & Segroves

Balamucki, Foley & Swiger

Bando & Young

Barnowski & Hart

Bayle, Norman & Echlebarger

Bechek, S. J. & Co.

Becksfort & Bussler

Beene, Garter & Hrouda

Berger & Wild

Berkey & Laws

Bloomberg, L. M. & Co.

Blossfeld & Co.

Bond & Co.

Boone & Gross

Brenner & Burnstein

Buss, Ullrich, Bernock & Wilt

Cairns & Stewart

Campbell, A. J. & Co.

Carey & Olsen

Carnago & Lazzara

Clinton, Robert E. & Co.

Coe, Scott, Schroeder & Swayne

Cole & Hollander

Collins, Buri & McConkey

Conlen & Darnton

Coopers & Lybrand

Couture, Frank & Co.

Cramer, Beattie & Baird

Crowe, Chizek & Co.

Curtis, Bailey & Sposito

Danielson, Story, Lake & Schultz

Danneels & Co.

DeCook & Nuyen

DeGuerre, W. Ross, & Co.

Den Braber, Hemholdt & Lyzenga

Derderian, R. N. & Co.

DeSow, Belin, Dubrinsky and Sobel

Dinwiddie, Kandt, Smith & Fought

Dise, J. Harvey & Co.

Doeren, Mayhew, Grob & McNamara

Donnelly & O'Brien

Donovan, Carabell & Bocknek

Dorfman, Morof, Sheplow & Sharfman

Doyle, Alam, Litt & Taylor

Draznin, Dave K., & Co.

DuPuis & Ryden

Earl W. Taylor & Co.

Edkins, Pall & Nelson

Engstrom, Paul V., & Co.

Farquharson & Pointon

Fellows & Randall

Fleurey & Singler

Foote & Iles

Foulds & Zeros

Frank & Bovitz

Friedman & Hoskow

Froggatt, Joseph & Co.

Geller, Naftaly, Herbach & Shapero

Gilbert, Boley & Co.

Goettsche, Tranen & Co.

Goodman & DeMink

Gordon, Harry M., & Co.

Grant & Silverman

Gregg, Velker & St. John

Guest, Wright & Co.

Haggerty, Frank J. & Co.

Hall & Hines

Hanrahan, Carey & Ayers

Harper & Burk

Harris, Reames & Ambrose

Harry A. Schrage & Co.

Hepfer, Lyle D. & Co.

Herkner, Smits, Miskill & Johnson

Herman & MacLean

Hirsch, Bernard & Co.

Hoffman, Kolon & Tobes

Hubbard & Wendt

Hungerford, Cooper, Luxon & Co.

Hungerford, K. G. & Co.

Icerman, Johnson & Hoffman

Janz & Knight

Jenkins & Eshman

Jennings, Jewell, Murray & Company

Jensen & Jaste

Karl Leppien & Co.

Karpus, Clark & Co.

Kaye, Charles & Co.

Keays, Hertler and Brzostowski

Kelman, Levitsky, Nathanson & Lasser

Kelman & Mintz

Kovtan, Maki and McMurray

Krueger & Ziegler

LaFever, Bell & Laird

Laine, Appold & Co.

Lally & Gough

Lasser, J. K. & Co.

Lattin, Sallan & Keystone

Lau & Derderian

Laventhol, Krekstein, Horwath & Horwath

Lee, Albert, & Co.

Levine, Dworkin & Freedman

Lewis, Knopf & Kerr

Linden, Klain, Israel & Ross

Lohff & Noble

Loving, Bernard & Co.

Lutwitzi, Talaska and Co.

Mackey & Mackey

Maihover, Moore & DeLong

Main, LaFrentz & Co.

Markowski & Cole

McCafferty, E. F., & Co.

McGraw, Fenner & Melstrom

Miller, Clement & Francis, P.C.

Miller, Line, & McGannon

Millhouse & Holaly

Minshull & Tuori

Monast & Goldstein

Moore, James F., & Co.

Moore, Smith & Dale

Murray & Noble

Newman, Kabeck & Wilson

Newman, Steinberger & Bornstein

Nida & Bokolor

O'Connell & O'Connell

Oliver & Fuller

Osburn & Goodnight

Parker, Wittus & Co.

Perrin, Fordree, Davidson & Remus

Peters & Joseph

Plante & Moran

Polewach, M. J. & Co.

Pope and Siewert

Post, Smythe, Lutz & Ziel

Pruis, Carter, Hamilton & Dieterman

Purdy & Moore

Purdy, Donovan & Beal

Reinheimer & Lederman

Reitz & LaFleche

Reive, Kent & Kuhn

Richardson & McCartney

Richwine, Newton & Carlton

Robert D. Baetz & Co.

Rohleder & Suabedissen

Rosen & Feinberg

Rosenbloom & Rosenbloom

Ross & Klein

Rowland, Murray, Fortner & McAslan

Ruben & Weisman

Rugg, J. R., & Co.

Schellenberg, Kregel & Kittle

Schiff & Levy

Schippers, Kitner & Robertson

Schmaltz & Co.

Schmelz & Rieck

Schneider & Broder

Schneider, Larche & Haapala

Schonberg & Schonberg

Schroeder, Gerald C. & Co.

Scudder, Lawrence & Co.

Shapiro, Shapiro and Goren

Sharpe & Shewman

Sherk-DeVries & Krenz

Sherman, Nathan & Ettinger

Shuttie & Floersch

Siegel and Zipser, P.C.

Siigfried, Crandall & Bos

Silver & Gilbert

Simon & Goins

Skillman, Zielesch & Co.

Smith, Acker & Hyman

Smith & Smith

Sniderman & Endicott

Soderman & Brennan

Sorokin, Carey & Fromholz, P. C.

Sosin, Hilbert & Co.

Staub, Stein & Shapiro

Stein & Olasky

Stevens & Gillett

Stewart & Beauvais

Stewart & Co.

Sullivan, Page & Cassel

Sutherland & Robson

Svagr, Kraus, Gorski & Co.

Tackman & Ducheny

Taylor & Drewett

The Ward Company, P.C.

Timm, Robson, Schuette & Hutchison

Tischler & Lipson

Tobias & Tobias

Tuori, Devlin & Ouwerkerk

Van Ke;;eo & Green

Velick & Haas

Wagar, Lunt & Rehmann

Walter D. Karal & Co.

Weinlander, Fitzhugh, Bertuleit Schairer

Weintraub, M. Murray & Co.

Weisberg & Frank

Wells & Green

Westheimer, Fine, Berger & Co.

Whitehead & Michael

Wise & Shimoda

Witus & Witus

Wright, Griffin & Davis

Yeo & Yeo

Young, Skutt & Bretienwisher

Young, Warren & Co.

Zack, Fields & Co.

APPENDIX D

LETTER OF TRANSMITTAL

LETTER OF TRANSMITTAL

Department of Accounting &
Financial Administration
Michigan State University
East Lansing, Michigan 48823
June 20, 1971

I am a doctoral candidate at Michigan State University with a major in accounting. One of the requirements for the degree is to complete a research project for the doctoral dissertation. Enclosed with this letter is an envelope containing a packet of IBM cards to be ranked by various respondents. The objective of the study is to determine what the educational requirements should be for a beginning public accountant for his future growth as a professional. Toward this end, I am sampling Michigan academicians and practicing accountants for their perceptions of these requirements. You are a member of the sample group and I need your help.

Will you cooperate in this study by reading the directions on the packet of cards enclosed with this letter, completing the short data card and returning the ranked cards in the stamped addressed envelope? Please remember that your response is vital to the research and that the ability to complete this study depends a great deal on receiving a response from each member of the sample group. Since this is an academic effort, you may be assured that all responses will be kept in strictest confidence.

Your time and effort on my behalf is greatly appreciated.

Sincerely,

Louis C. Jacoby
Doctoral Candidate

APPENDIX E

FOLLOW UP LETTER

FOLLOW UP LETTER

Department of Accounting &
Financial Administration
Michigan State University
East Lansing, Michigan 48823
July 8, 1971

Two and one-half weeks ago I mailed a packet of IBM cards to you and several other academicians and public accountants requesting that the cards be ranked and returned to me. Since that time many of the card decks have been returned. However, some of the card deck recipients have not yet responded.

If you are among those who have not yet completed the rankings I would appreciate it very much if you would complete the rankings and drop the packet in the return mail. If you have already completed and returned the card deck please ignore this second request and accept my sincere thanks for your participation.

As stated in my first letter, the ability to complete the research and the subsequent dissertation depends on a response from all persons in my sample. Again, let me emphasize that this is an academic research effort that will be of benefit to both the academician and the practicing accountant and your response is vital. After I have received your response I will not contact you again.

Thank you very much for your time and effort.

Sincerely.

Louis C. Jacoby
Doctoral Candidate

APPENDIX F

COLLEGES AND UNIVERSITIES INCLUDED IN THE EDUCATOR SAMPLE

COLLEGES AND UNIVERSITIES INCLUDED

IN THE EDUCATOR SAMPLE

1. Andrews University (a,d)
2. Aquinas College (a,d)
3. Central Michigan University (a,d)
4. Cleary College (c,d)
5. Detroit College of Business (c,d)
6. Detroit Institute of Technology (a,d)
7. Eastern Michigan University (a,d)
8. Ferris State College (a,d)
9. Lawrence Institute of Technology (a,d)
10. Michigan State University (a,b,d)
11. Michigan Technical University (a,d)
12. Northern Michigan University (a,d)
13. University of Detroit (a,d)
14. University of Michigan (a,b,d)
15. Wayne State University (a,d)
16. Western Michigan University (a,b,d)

Note:

(a) Accreditation by North Central Association of Colleges and Secondary Schools, Commission on Colleges and Universities.
(b) Member of the American Association of Collegiate Schools of Business.
(c) Accrediting Commission for Business Schools.
(d) Accepted by the state of Michigan as having a major in accounting as required by Section 16 a(1)(b) and (c) which states that there "shall be 21 semester hours or 33 quarter hours of accounting subjects including a course in auditing."