

# The Rise of Accounting Education

Dr. Raquel D. Pascua

Submitted: 15-10-2021

Revised: 26-10-2021

Accepted: 28-10-2021

## CHAPTER 1

### Introduction

#### Background and Content of the Study

From the end of World War II until the beginning of the current decade, higher education including the education of accountant, generally, has enjoyed a state of near euphoria. A number of reasons account for this. Accounting education has had a plentiful supply of students because there was (and still is) such a strong demand for accounting graduates. A long period of rapid and continuing expansion of business and industry called for increasing numbers of accountants both in industry and in the public accounting profession. Growth in the side of individual business units and intensified the importance of accounting data for control purposes. The rise of professional management became a necessity in order to deal with the problem of both large and diversified companies, and an essential ingredient of professional management continue to be a demand for and reliance on financial data. (Mautz 30).

#### The Professionalization of Accounting

Accounting originally acquired professionally status because of the need for the independent audits. As a consequence, the professional practice of accounting has a traditionally been identified with the public accounting segment of the Profession (Casino 2-3)

The first accountancy law (Act 3105) enacted in 1923 was entitled "The Philippine Public Accountancy Law." This law provided that "any person who shall have received from the Board of Accountancy here in after created, a certificate of his qualification to practice as a public accountant as in this act provided, shall have the authority to style himself and to be known as a "Certified Public Accountant" and to use an abbreviated title "CPA" (Sec. 1, Act 3105). Since 1923, significant changes have taken place in the structure of the accounting profession and in the professionalization of areas and other than public accounting.

There are now over 80,000 holders of the Philippine CPA certificates. CPAs not in public practice greatly outnumber those in public

accounting. Hundreds of CPAs occupy responsible positions in the business, government and academe. Many CPAs leave public accounting to become controllers or financial executive in business enterprises.

The present accountancy law (PD 692) no longer seek to regulate only the practice of public accounting. It provides for the supervision, control, and regulation of the practice of accountancy embraces not only CPAs employed in the private enterprise. Government and institutional institutions. Section 3 specifically provides that:

" A certified public accountant shall be considered in the practice of his profession if the nature and character of his employment whether as an officer or employee in the private enterprise or educational institution involves decision making requiring professional knowledge in the science of accounting of when he represents his private employer before any government agency or tax matter related t to accounting, and such employment or position requires that the holder there of must be a Certified Public Accountant; or if he holds or is appointed to a position in the accounting occupational group in government or in government owned or controlled corporations, prietary functions, where a service eligibility as a Certified Public Accountant is a "pre-requisite."

In line with the changes introduced by PD 692, the code of ethics promulgated by the Board of Accountancy have been revised to make it applicable to all CPAs, with separate section for CPAs in different areas of practice.

It is evident that accounting has involved into a multi-faceted profession with four major areas: public accounting, private accounting, government accounting and accounting education. Within its major area, there are further areas of specialization.

Because of its history, public accounting has attained the highest degree of professionalization among the different areas of practice. Many regard the independent audit as the highest form of professional practice. But the professionalization in the other fields has also reached a level where each can claim legitimate professional status. Regardless of their area of

practice, CPAs are engaged in the professional practice of the accountancy whenever they perform accounting services affecting the public interest.

### **Quality of Accounting Education: An Assessment**

The accounting profession is currently at a crossroad. This term can describe the situation in which all accounting bodies have found themselves over the past or three decades. Those charged with administration of the profession have been obliged to guide their members towards basic decision in shaping their future boundaries of what is known as "accounting." The basic decision was whether the parameter of the accounting profession should be staked out according to the required level of knowledge and technique of the day, thus surrendering to the other disciplines the responsibility for grappling with the expanding business world. New business tools and techniques are continually being developed in order to meet the public insatiable demand for more comprehensive and useful financial information. (Anderson 104).

Some sectors, especially those outside the academe have lamented the sad state of accounting education in the country. Accordingly, most of the accountant that schools produced do not possess the skills needed by the outside world. In reviewing the quality of accounting education. In reviewing the quality of accounting education, Paras noted that generally accounting graduates lack business orientation; are unable to communicate; have difficulty in analysing and solving problems; need some re-orientation to attitudinal and basic values; lack government accounting knowledge; especially national income accounting and budgeting; lack of understanding of auditing process and have no understanding of internal controls; and lack computer literacy (28).

### **Achievement Testing: A Step Towards Quality Accounting Education**

In order to obtain accurate data on the status of business education in Region 1, the Higher Education Division of the DECSS-Region 1, initiated an achievement testing in business education institution in the region. This testing projects which was co-sponsored by the Regional Association by the Business Educators (RABE) OF Region 1, sought to ascertain the extent to which accounting students are gaining the necessary knowledge and skills in eight subject areas namely: Accounting, Business Law, Taxation, Management Services, Theory of Accounts, Auditing Theory, Auditing Problems and Practical Accounting.

The results of the test were expected to provide insights into possible ways by which accounting instruction in the region may be improved.

### **The Uses of Achievement Tests**

The many roles that achievement tests can play within the specific setting of the school itself have been recognized. As an aid in the assignment of grades, such tests have the advantages of objectivity and uniformity. If properly constructed, they have other merits, such as adequacy of content coverage and reduction of the operation and irrelevant and chance factors in marking procedures. Achievement tests also constitutes an important feature of remedial teaching programs. In this connection they are useful both in the identification of pupils with special education disabilities and in the measurement progress in the course of remedial work.

For all types of learners, the periodic administration of well-constructed and properly chosen achievement tests serves to facilitate learning. Such tests reveal weaknesses in past learning, give direction to subsequent learning, and motivate the learner.

Finally, achievement tests may be employed as aids in the evaluation of teaching, the improvement of instructional techniques and the revision of curriculum content. Achievement test can provide the information on with adequacy with which the essential context is covered. Likewise, they can indicate how much of the course content is actually retained for how long. Moreover, achievement test stimulates an analysis of training objectives and encourage acritical examination of the content and method of instruction. (Anastasi 426-427)

### **Statement of the Problem**

The main problem of the study was: How valid and reliable was the achievement test in accounting administered to accounting students in Region 1?

Specifically, this study attempted to answer the following sub-problems:

1. How did the accounting students in Region 1 perform in the Accounting Achievement Test administered for the school year 1990-1991?
2. How valid are the items of the Accounting Achievement test in terms of their
  - a. Index difficulty
  - b. Discriminative power
  - c. Item-whole validity
  - d. Face validity, and
  - e. Curricular and content validity?

3. How reliable is the Accounting achievement tests in terms of its inter-item consistency?

### **Research Hypotheses**

The following hypotheses were formulated to provide general direction in the conduct of the study:

1. The accounting validity test possesses high degree of validity.
2. The Accounting achievement test is reliable.

### **Scope and Delimitation of the Study**

This study focused on the validation of the achievement test in Accounting administered to accounting students of Region 1 during the second semester of 1990-1991.

The achievement test in the accounting included eight subject areas, namely: Accounting 1, Business Law, Taxation, Management Service, Theory of Accounts, Auditing Theory, Auditing Problems and Practical Accounting.

This investigation determined the indices of difficulty and discriminative power of the test items, the test's item-whole validity as well as its face validity and content validity. This study also ascertains the reliability of the test through inter-item consistency.

No attempt was made to establish the concurrent validity of the test because of its difficulty of obtaining student related data from all schools involved in testing.

### **Theoretical Framework**

This portion of the study presents the underlying assumptions, the conceptual framework and the definition of terms, all of which reflect the theoretical framework within which this investigation will be conducted.

#### **Basic Assumption**

This study was premised on the following underlying assumptions:

1. Valid and reliable achievement tests in accounting are necessary tools for upgrading teaching and learning in the subject.
2. Students proficiency level in the various accounting areas as shown by the achievement test results can serve as the basis for ascertaining the relevance of curricular offerings in accounting.
3. An early assessment of the student's strengths and weaknesses in the various accounting areas is a step toward preparing the students for the board examination in accountancy.

### **Conceptual Framework**

This study was anchored on the concept that testing and test validation are strategic measures design to improve the quality of accounting education.

Performance of the examinees in the board examinations for accountants have not been very encouraging. Researchers, educators and practitioners have always lamented this sad reality and have geared their efforts toward a diligent search for remedies to this problem. Almost invariably, this concerned sectors look up to degree-granting institutions as the hope of "getting this problem off their chest." They believe that certain improvements are needed along curricular offerings. They further maintain that there are certain skills would cause below par performance in the board examinations and actual practice.

A scrutiny of the achievement test in accounting administered by the DECS of Region 1 is, therefore relevant. The conceptualization of this study which sought to validate such test is shown in a schematic diagram.

### **Definition of Terms**

In order to provide a common frame of reference and ensure a clearer understanding of the study, the following terms are defined.

**Achievement Test.** It is a test which appraises the effect of the course of instruction or trainings (Anastasi24). In this study, it refers to the test administered by the DECS in coordination with the Regional Association of Business Educators (RABE) of Region 1 to college students of Accounting. This test covers eight areas namely: Accounting 1, Business Law, Taxation, Management Services, Theory of Accountants, Auditing Theory, Auditing Problems and Practical Accounting.

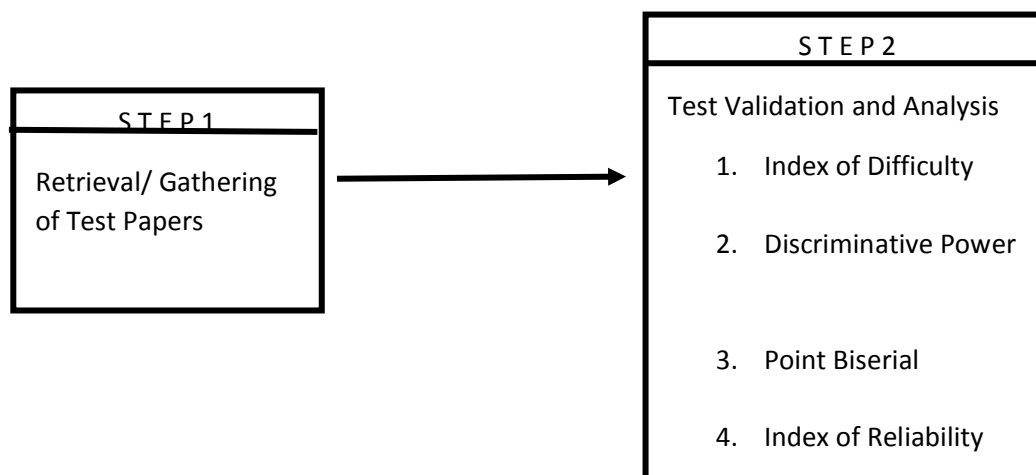
**Accounting.** The art of recording, classifying and summarizing in a significant manner and in terms of money, transaction and events which are in part at least, of a financial character, and interpreting the results thereof (Valix and Peralta 1).

**Item Analysis.** It refers to the study of the effectiveness of an item based on three interrelated factors: (a) validity of the items from the standpoint of the curricular content and educational objectives; (d) discriminative power of the item (Momtoe)

**Content Validity.** It refers to the quality of a test having inferred value because of its demonstrated agreement with a theory (Oriondo and Antonio 90). It is a judgment logically arrive at in establishing

whether or not the test measures the learning objectives and content areas covered in Accounting 1 and the other seven subjects involved all of which

make up the traits and qualities the test is supposed to measure.



**Figure 1**  
**Schematic Diagram of the Research Process**

An item expressed in terms of the percentage of students in a group answering the item correctly (193).

**Discriminative Power.** It refers to the degree to which success or failure on the item indicates possession of the ability being measured. A test must be discriminate in favour of the high scoring group. A positive discrimination is a condition when every pupil scores successfully on the item ranks higher in the general ability scale than any other pupil who failed on the item. Negative discrimination is the condition obtaining when those who succeed on the item rank lower in the general ability scale than those who failed on the item (Monroe 1470).

**Reliability.** Ross defines reliability as the degree to which the test agrees to itself. It is a degree to which a test measures consistently what it purports to measure. It means consistency (71).

**Accountancy.** The theory and practice of accounting, its responsibilities, standards, conventions and activities.

**Significance of the Study**

National surveys have reported certain weaknesses and imbalances plaguing today's educational system. Notable among these imbalances are those between facilities and enrolment; between supply of graduates and demand for specific manpower skills; between

investment in education as a social service institution against investment in economic enterprise (Corpuz 99-100).

Lending credibility to the above cited observations of Corpuz is the fact that educators have time and again, directed their efforts towards upgrading the quality of education, hence, the requirements for graduates of most courses to pass a board examination before they enter the world of work.

The field of accountancy is one of those professions requiring an acceptable performance in the board of examination as an indicator of one's preparedness in practicing the profession. It is sad to note, however, that according to Tagle, the 'mortality' rate in the board examinations for Certified Public Accountant is alarming.

For the purpose of turning over the quality graduates of the Accountancy course, certain upgrading the strategies are being taken by educators and professionals. The Achievement Testing Program of the DECS Region 1 is definitely geared to such objective. Likewise, the present study is aligned with the same purpose.

It is felt that the present investigation will be of help to accounting educators since the study may provide them insights on the strength and weaknesses of their students in various accounting subjects. Hopefully this study will be an eye opener to accounting teachers and will make them see the pivotal role they have to carry out in the

improvement of accounting education. Salgado clearly puts it, thus: (19)

... the profession of accountancy of the future is in the hands of the educators among us. Accounting education will either perpetuate our present limitations as profession or re-established our ideals and our standards. For after all is said and done, one thing remains the standards must be lived and taught and learned and lived. There are also standards of teaching and the standards of learning. All these must be upheld. (19)

The present study is also deemed important to curriculum planners because the finding might provide a basis for the improvement of the accounting curriculum.

The authors and prospective writers of the accounting textbooks, this investigation might also prove useful since the results of the study might point out areas or topics ending emphasis.

The results of this research may also be a meaningful input to guidance counsellors whose counselling can be made more effective by a knowledge of student strength and weaknesses in a particular subject.

Finally, this study is beneficial to students particularly students of accounting, because whatever the recommendations arrived at by the study will be for the improvement of accounting instruction.

## CHAPTER 2

### REVIEW OF RELATED RESEARCH AND PROFESSIONAL LITERATURE

This chapter present a review of related studies and professional literature which provides the theoretical framework of the study and a background for the discussion and consideration of findings.

#### Review of Related Studies

##### Local Studies

Lee (1982) conducted a survey in the performance of the accounting graduates in their respective fields (private industry, public accountancy, government service and Education) and also ascertained whether the qualifying examination as a means of screening incoming juniors affected the performance of the graduates in the CPA Board Examination during 1969 to 1982. This study made use of the normative-descriptive technique of research, and the data were gathered by the use of documents and questionnaire. For statistical analysis she made use of the percentage. Following are some of her findings which were related to the present study:

1. The accounting graduates of the University of Santo Tomas seemingly disapproved the common saying that the CPA examinations are difficult.

2. UST graduates work in varied fields off endeavour the performance of graduates maybe measured by the fact that no U.S.T. accounting graduates has ever come back to ask for work or help in getting a job. From the list of outstanding Commerce graduates who have been yearly honored by the College, one can conclude that the accounting majors dominate the list of 36 so far awarded from 1964 to 1988.

3. Using the CPA examination results as a spring board to see the trend of passing the light of qualifying examinations given to students interested to major in Accounting, it may be gleaned from the statistics gathered that the number of the students has been in the uptrend from the time said examinations were administered.

4. The school's curriculum is the result of the MECS guidelines and policies so that even if some flexibility is allowed, the U.S.T. cannot go far from the curriculum set up by the government.

Tagle (1988) made a study on the statistical correlation between the academic performance in accounting majors of the College of Commerce, University of Baguio and the study habits and ego-state level of the students. His study used the descriptive-nominative method. He made use of the Socio- Economic Status (SES) adopted from the socio- economic Index of the National Coordinating Center for the study of the Development of the Filipino Youth (NCCDDFCY) to determine the correlation among the variables. In analysing the data, he made use of the correlation techniques.

Among his finding were the following:

1. The study habits rating of the accounting majors of the College Commerce, University of Baguio are satisfactory.
2. The accounting majors have a reasonably evolved ego (satisfactory) meaning, that the student emotional adjustment mental health is satisfactory.
3. The academic performance in accounting majors is fairly satisfactory
4. The Socio-economic status of the accounting majors indicates that most of the respondents belonged to the upper middle class.
5. The mean NCEE rating of the accounting majors is 76, equivalent to satisfactory.
6. The moderator variables of sex, socio-economic status and NCEE ratings are correlated with study habits.



7. The males have better study habits than the females.
8. The higher the socio-economic level the better the study habits.
9. The higher the NCEE rating the better the study habits.
10. The moderator variables of sex and NCEE ratings are correlated with ego-state level.
11. The moderator variables of sex and NCEE ratings are correlated with the academic performance in accounting.
12. Study habits is correlated with academic performance in accounting.
13. Ego-state level is correlated with academic performance in accounting.

In the review of correlated literature, the researcher found out that the test validation is not a common research concern in the field of accounting. Because of this observation, she resorted to reviewing studies on test validation in the other subject areas.

A study conducted by Soriano (1987) focused on the validation of a Division Summative Test in Mathematics for Grade V. Before validation the test, however, in summative test. Among other things, his study revealed that the pupils did not achieve acceptable level of mastery in mathematics. In general, the pupil was found to be significantly weak in all the content areas of Mathematics for Grade V and learning domains of knowledge and information and of habits, skills and abilities and in nearly all the mathematics concepts with the exception of "addition the whole numbers."

On the validity and reliability of the test, Soriano found out that the test possessed curricular or content validity as well as construct validity. Soriano, therefore, concluded that the Division Summative Test in Mathematics in Grade V was an adequate means for testing Mathematics achievement.

A similar study was conducted by Quinto (1981) who analysed the test items of a Division Summative Test in Mathematics for Grade Six Pupils. This investigation revealed the following findings:

1. Forty-five percent of the total items were "quite" difficult.
2. Thirty-five percent of the test items were of "average" difficulty.
3. Twenty percent of the test items were "essay."
4. The test possessed the content validity.

Edades study (1991) which sought to validate a Division Summative Test<sup>7</sup> in

Mathematics for Grade five and six, also proposed a test in the subject area. She first ascertained the performance of her subject cases and then endeavored to find out how valid and reliable the test was. After knowing the weak points of the test items, she improved them and the resulting test was tried out and even validated. The improved validated test constituted the proposed Summative Test in Mathematics for Grade five and six.

Highlights of her study included the following findings:

1. The immediate pupils scored low in the Division Summative Test in Mathematics.
2. The items of the test had acceptable indices of difficulty and discriminative power.
3. The Division Summative Test in Mathematics for Grade five and six possessed face validity, content validity, construct validity as well as a high index of reliability.
4. The proposed summative tests for grades five and six mathematics possessed face validity, content or curricular validity construct validity and reliability.

#### **Foreign Studies**

An identification of trends in the Elementary Accounting Courses has been the object of the continuing series of surveys by Ronald J. Patten and Joseph W. Beckman. Their latest survey achieved responses from 88 member's of the American Association Collegiate Schools of Business. Their major findings were as follows:

1. Fifty percent of the respondents considered the increasing emphasis on use of accounting (as opposed of bookkeeping technique) as the most important is the trend toward treating managerial accounting as a separate (an equal) segment of the course.
2. The basic requirement of six hours of elementary accounting generally continues.
3. Class sizes were increasing. The most typical elementary class had 40-49 students, and 16 percent of the schools had average class size of over 60. This was accompanied by greater emphasis on lecture courses; the conference method and laboratory were declining.
4. Only 20 of the 88 schools continued to use practice sets in the elementary courses, and 21 now introduce students to the computer. Thus far televised instruction and business games were not used significantly.
5. There were 32 schools that offered special courses in the elementary accounting for nonbusinessstudents, but this number was declining.

In a certain study conducted by the Price Waterhouse Foundation Study Group, a new approach to the first year course was recommended. The group provided an eight module structure for a course directed toward all college students instead of the usual orientation toward accounting and business majors. Several reports of trials of the new approach have generally indicated favourable results in terms of student and faculty response, but actual measurements of success in terms of learning achievement have not been reported.

In one academic year, handout materials were developed to adopt a traditional elementary textbook to the new approach of Elon College. Following the Solomon Four-Group Research Design, two experimental sections used the materials adapting the traditional textbook to the new approach, while two control sections used the same textbook in normal cover-to-cover sequence. At the end of two semester courses, the experimental sections achieved mean scores on the American Institute of Certified Public Accountants (AICPA) Achievement Test, Level I that were so significantly higher than the scores of the control section (Sanders, "A New Introduction. . ." 596)

A study on education, preparation and examination of the CPA sought to find out if practitioners and accounting educators agreed on substantial and practical issues in the areas of CPA education, preparation and the CPA examination. Letilhon and Krystofik who conducted the survey employed two sets of questionnaire one, directed to educators, and the other, addressed to practitioners. The survey largely involved fact finding (current curricula, current practices and so forth), although value judgment also was sought.

The first study, conducted in fall 1981, involved the American Assembly of Collegiate Schools of Business (AACSB) accredited and member schools. The schools were asked to report on their current practices in the areas of curricula, preparation for the CPA examination and other matters. In addition, opinions were sought on the CPA itself, preferences for the 120 versus 150 hour programs, the desirable number of hours in Accounting within a curriculum, and so forth.

The second questionnaire, sent in fall 1982, was addressed to 113 public accounting firms and associations of firms. The group was asked about the current practices in the areas of recruitment, advancement in the policies and the point at which the CPA certificate was required. Their opinions were also solicited on a number of points similar to those raised earlier with the educators.

Among other things, the survey indicated that:

1. Fifty-six percent of the respondents offered courses aimed at preparing students for the CPA examination.
2. Sixty-three percent of the school respondents and sixty percent of the firm respondents were of the opinion that the CPA examination should influence the curricula; and
3. Forty-seven percent of the respondents' educators and less than 14 percent of the practitioners maintained that college curricula should influence the CPA examination.

From these related researches was drawn the concept which provided the "germ" of this proposed study that is, testing and test validation can be the first step towards upgrading the quality of accounting education and accountants. Likewise, the studies reviewed will provide the researcher some hints on how to go about their investigation, particularly, on how to validate a test.

#### **Related Professional Literature**

Education for the accounting profession has received so much attention from both accounting educators and practitioners. Proof of this growing concern for the profession are the regular articles and reports written on continuing professional education for accountants.

Partners in the eight accounting firms in the Boston area were questioned in the problem of undergraduate education in accounting. Each of the partners interviewed felt that the present undergraduate degree in accounting was unsatisfactory. They characterized accounting curriculum as "extremely narrow" and "traditionally restricted." Students should be encouraged to learn how to think, "noted one partner who complained about "rote learning." Another partner remarked that "too much time spent on solving long problems discourage the better student from majoring accounting. Still another partner indicated that "specialized subjects such as bankruptcy, governmental and municipal accounting, consignee/consignor and consolidation" should be removed from the curriculum. This partner concluded by stating that these specialized areas should be removed from the CPA examination (Trump and Hendrickson 87).

The Uniform Final Examination (UFE) Board of Examiners, in its thrust of upgrading the quality of would be accountants. Emphasis is placed on measuring to the extent possible in a written examination, UFE candidate's readiness to practice public accounting. This Board has defined its measurable professional qualities that embody

expectations of newly qualified chartered accountants, as follows (Miller 31).

1. The ability to apply the core knowledge skills (as defined in the syllabus).
2. The ability to think and solve problems in analytical manner.
3. The ability to apply knowledge with imagination and flexibility.
4. The ability to exercise professional judgment in dealing with alternatives
5. The ability to communicate effectively with users and respond to user's needs.
6. The awareness of current development shaping the future of the profession.

Miller concurred with Vatter, an Australian accounting researcher in citing the employer, perceptions of weaknesses of beginning accountants. Both agree that the common complaints on academic matters were poor English, poor expression, inadequate analytical ability, and finally a lack in general education (35).

Writing on the education of the professional accountant, Sloan batted for a proper balance between technical and conceptual knowledge in accounting. He also said that by controlling the quality of the students, accounting educator wouldn't have to concentrate on developing thinking, learning and communication skills. Instead, they could sharpen those skills without reducing course content (58).

The pre-board education of the perspective accountant is, as expected, lodged with the schools. According to Casino, formal pre-qualification education is the responsibility of the schools. Its objective should be to create in the student the capacity for gradual development in the years ahead as he faces the challenges of the profession. It should emphasize conceptual understanding over procedural skills, with sufficient knowledge of procedures and technique to equip him to begin an accounting career to adapt to changing needs (8). The foregoing reviewed professional literature has given the researchers added knowledge on the skills and competencies needed by prospective accountants. These ideas can shed a light in the drawing up of recommendations for the present investigation.

### CHAPTER 3

#### RESEARCH DESIGN

This chapter of the study describes the research methodology and procedure, the research subjects, the data needed, the data gathering instrument, the gathering of the data and the treatment of such data.

#### Research Method and Procedure

The present investigation attempted to validate the achievement test in Accounting administered by the Department of Education, Culture and Sports of Region I, in coordination with Regional Association of Business Educators (RABE) to college students of accounting enrolled in various colleges and universities of Region I, during the second semester of school year 1990-1991. This study used the descriptive method of research since it ascertained the validity and reliability of said test.

Before establishing the validity the reliability of the test, the test items were subjected to item analysis.

#### Research Subjects

The research subjects of this study were the accounting majors and accounting I students Region I who numbered 3306 and 625, respectively and who participated in the DECS-RABE testing program initially implemented during the second semester of the school year 1990-1991.

#### Data Used

The data used by this study were the results of the achievement test in Accounting I and other major Accounting subjects administered to the subject-cases.

#### Data - Gathering Instrument

The instrument used in collecting the data was the achievement test prepared by DECS ROI in cooperation with the Regional I Association of Business Educators (RABE) of Region I. The test was designed for two groups of examinees- the freshmen who enrolled in Accounting I and the Accounting majors.

There were eight areas covered by the test namely: Accounting I, Business Law, Taxation, Theory of Accounts, Auditing Theory, Auditing Problems, Management Services and Practical Accounting. The instrument was pre-tested by the DECS in cooperation with the RABE to Commerce/Accounting students of some colleges and universities in Baguio City.

#### Gathering the Data

Permission to analyse the test results was first sought from the Department of Education, Culture and Sports, Region I. To facilitate the carrying out of the research, the researcher offered to help in the correction of the test papers, as there was some left uncorrected. However, as she did so, she safeguarded the reliability of the test by treating the test papers and results with utmost confidentiality.



After the papers were all corrected, the researcher analysed the test on a per- item basis.

#### Treatment of Data

The data of this study were treated statistically, using the following formulas for the purpose indicated:

a. To determine the index of difficulty of the test (Garrett 362-363):

$$P = \frac{U + L}{N}$$

Where

P= is the index of difficulty indicating the proportion of the pupils who answered the item correctly;

U= is the number of the pupil in the upper scoring group who answered the item correctly;

L= is the number of pupils in the low- scoring group who answered the item correctly; and

N= is the total number of pupils in the two groups.

b. To determine the index of discrimination (Ebel 366):

$$D = \frac{U - L}{N}$$

Where

D= is the index of discrimination.

U= is the number of pupils in the upper –scoring group who answered the item correctly;

L= is the number of pupils in the low- scoring group who answered the item correctly; and

N= is the number of pupils in each group.

c. To ascertain the item- whole validity of the test (Garrett 380-382);

$$r_{pbis} = \frac{M_p - M_q}{\sigma} \times \sqrt{pq}$$

Where

r<sub>pbis</sub>= is the point biserial r.

M<sub>p</sub>= is the mean of the samples in the first group (passing the item)

M<sub>q</sub> =is the mean of the samples in the second group (failing the item)

p= is the proportion of the samples in the first group.

q= is the proportion of the samples in the second group; and

σ= is the standard deviation of the entire group.

d= to establish the reliability of the test (Garrett 201).

$$R_{tt} = \frac{k}{k-1} \times \frac{1 - pq}{S^2}$$

Where

k= is the number of items on the test.

S<sup>2</sup>= is the variance of the test

pq= is the quantity obtained by multiplying the p (the proportion of the samples failing the item) e= to establish the performance profile of the subject – cases:

$$(a) \quad M = AM + \frac{Efd_i}{N} \text{ (Garrett 36)}$$

Where

AM= the assumed mean

Efd= the algebraic sum of the products of the frequencies and deviation

N= the number of cases in the distribution

i= the size of the class interval

$$(b) \quad SD = \frac{Efd^2}{N} - \frac{Efd^2}{N} \text{ (Garrett 52)}$$

Where

Efd<sup>2</sup>= the sum of the products of the frequency and the square of the deviation

Efd= the algebraic sum of the product of the frequency and its corresponding deviation.

i= size of the class interval.

## CHAPTER 4

### PERFORMANCE OF THE STUDENTS IN THE REGION I

#### ACCOUNTING ACHIEVEMENT TEST

Test chapter attempted to ascertain the performance level of accounting students in Region I Achievement Test in Accounting administered during the second semester of 1990-1991. It sought to answer the first sub problem of the study, which was: How did the accounting students in Region I perform in the Accounting Achievement Test?

The data used in answering the first sub-problem were the raw scores in the achievement test of first year accounting students and accounting majors. Scores obtained were of eight kinds representing the eight areas covered by the test namely; Accounting I, Business Law, Taxation, Management Services, Theory of Accountants, Auditing Theory, Auditing Problems, and practical Accounting I.

To analyse and interpret the data, the following measures were used: the mean, the median and the standard deviation, the formulas were which are presented in Chapter three.

#### Performance of Subject- Cases in the Eight Areas of the Test

It will be recalled that there were two groups of examinees- the first year of accounting students numbering 625, and the Accounting majors totalling 3306. The first group took the test in Accounting I only while the second group took the examination in the rest of the subject areas. Scores of the examinees were collated and were organized into a frequency distribution.

**Performance in Accounting I.** The test in accounting I consisted of 100 items. A review of the individual test papers showed that the highest score obtained for this areas was \$2 while the lowest score was 21. From Table1 on the next page, it can be seen that the mean of the examinees in Accounting I was 50.6, the median was 50.13 and the standard deviation was 12.30 Considering that the highest possible score was 100, the mean

and the median which were almost the same were rather low. On the average, the examinees in general, missed half of the total items. This was compounded by the fact that the scores were widely scattered around the mean as revealed by the obtained standard deviation.

**Performance in Business Law.** There were 50 items given in Business Law. The highest individual score.

**Table I**  
**Mean, Median and Standard Deviation Per**

Subject Area of Examinees in the Accounting Achievement Test

Subject and Total Number of Points	Mean	Median	SD	\$ of Mean Score of Total Items
1. Accounting 1 (100)	50.6	50.13	12.20	50.6
2. Business Law (50)	20.14	20.44	5.15	40.28
3. Taxation (50)	19.15	19.04	3.33	38.30
4. Management Services (50)	18.14	16.89	6.65	36.28
5. Theory of Accounts (50)	19.78	18.91	6.45	39.56
6. Auditing Theory (50)	16.94	15.91	6.45	33.88
7. Auditing Problems (50)	15.36	14.94	5.90	30.72
8. Practical Accounting I (20)	8.25	9.06	3.90	41.25

Noted for this subject was \$8 while the lowest was 6. As revealed in Table 1, the mean of the subject- cases was 20.14, their median was 20.44 and their standard deviation was 5.15. Compared with the total possible score was much lower as it represented only 40 percent of the total items. It can be inferred, therefore, that the students did not perform well in this subject areas.

**Performance in Taxation.** Table 1 shows that the test in Taxation had 50 items and that the group mean was 19.15, the median was 19.04 and the standard deviation was 3.33. For this area, the highest score obtained was 30 while the lowest was 10. The interval between the highest and the lowest scores indicates that the scores tended to cluster heavily around the mean. This observation is supported and by the computed standard deviation. Similarly, the distance of the mean score from the total possible score indicates obviously the difficulty of the test in Taxation.

**Performance in Management Services.** The fifty item test in Management Services had 37 as its highest individual score and 8 as the lowest. The mean for this area was 18.14, its median was 16.89, and its standard deviation was 6.65. Clearly,

the mean was very low considering that there were 50 items in all. This implies that the students encountered difficulty in answering the test items just like in the aforementioned subject areas.

**Performance in Auditing Theory.**

Auditing theory, as an area in the Accounting Achievement Test, was also allotted 50 items. If this test, the subject cases got a mean of 16.94, a median of 15.91 and a standard deviation of 6.45. The highest score noted for this area was 36 and the lowest was 6. On the average, the group missed 33 items of the test. This observation leads one think that perhaps the test items prepared were very difficult.

**Performance in Auditing Problems.**

Fifty items on Auditing Problems were given in the achievement test. Out of the fifty items, the examinees obtained an average score of 15.36, median of 14.94 and a standard deviation of 5.90. From these data, it could be inferred that the subject- cases scored low and that their scores were widely scattered around the mean.

**Performance in Practical Accounting I.** As an area in the Accounting Achievement Test, Practical Accounting I required the examinees to solve

problems and to come up with supporting schedules. Hence, the limited number of items provided under this area. Of the 20 items test in Practical Accounting I, the examinees got a mean of 8.25 representing approximately forty percent of the total items, meaning, the subject-cases missed an average of sixty percent or twelve of the test items. Table 1 shows that the examinees had a median of 9.06 and a standard deviation of 3.90. Since the mean was less than the median, there were more cases who scored low.

### **Rank of the Mean Performance In the Major Subjects**

Except for accounting I, all the seen subject areas were subjects of Accounting majors. For purposes of rough comparison, the mean scores were converted to percentages because of their unequal number.

From the relative percentage obtain, it is evident that accounting I has the highest percentage, followed by Practical Accounting and then by Business Law. The area, Auditing Problems, registered the lowest percentage. An implication which may draw from this observation is that Accounting I, being the basic subject is still easy and that major accounting subject is still east that major accounting subjects really pose quite a challenge to the students.

It should be remembered, however, that there are other factors which may account for the low performance of the students in an examination. For instance, if the test does not possess validity or reliability, then the results of the test will be far from what is expected. With this idea uppermost in the mind of the researcher, she attempted to look into the validity and reliability of the Accounting Achievement Test.

## **CHAPTER 5 VALIDITY AND RELIABILITY OF THE ACCOUNTING ACHIEVEMENT TEST**

This chapter of the study purported to analyse the Accounting Achievement Test administered to accounting majors and first year accounting students of Region I. It sought to answer the following questions:

1. How valid are the items of the Accounting Achievement Test in terms of their?
  - a) Index of difficulty
  - b) Discriminative power
  - c) Item-whole validity
  - d) Face validity, and
  - e) Curricular or content validity?
2. How reliable is the Accounting Achievement Test in terms of its inter-item consistency?

In attempting to answer the above problems, the item of the test was analysed through the application of statistical measures which yielded certain indices of validity and reliability. Moreover, certain textbook and syllabi on Accounting were consulted in order to determine the curricular validity of the test.

### **Validity of the Accounting**

#### **Achievement Test**

This section of the investigation attempts to present a discussion and analysis of the Accounting Achievement Test.

#### **Index of Difficulty of the Accounting Achievement Test**

It should be recalled that there were two groups of examinees- the first year accounting I students and accounting majors. For the first year of students, the test on accounting I was given but for the accounting majors, a test was administered in seven subject areas, namely: Business Law, Taxation, Management Services, Theory of Accounts, Auditing Theory, Auditing Problems and Practical Accounting I.

In accounting I, one hundred (100) items were give while in the major subjects, 50 items were given except for practical accounting I which Had 20 items only. The items of these tests were analysed to determine whether they were accepted in terms validity and reliability.

One of the steps in finding the validity of the test is to determine the indices of difficulty of the different items. As defined, index off difficulty refer to the number of the right answer or portion of the group who solved an item correctly.

To determine the index of difficulty of the items, a number of procedures may be followed, namely: (1) by the judgment of competent people who rank the items in order of difficulty; (b) how quickly the items can be solved: and (3) by the numbers of examinees in the group who got the item right. The number of the right or portion of the group which can solve an item correctly, is the "standard" method for determining difficulty in objective examinations. This is the statistical process as compared with the judgment approach to item validity.

The third procedure described by Garrett as the "standard" method for determining the index of difficulty of the items was adopted in this study (362). To interpret the difficulty index of the item, the following table of equivalents suggested by Oriondo and Antonio was used (85):

.00 to .20 Very Difficult  
.21 to .80 Moderately Difficult

.81 to 1.00 Very Easy

In this study, an item was considered good and acceptable if it has an index of difficulty ranging from .21 to .80.

The indices of the difficulty, as well as their corresponding levels are present in Appendices \_\_\_\_\_ to \_\_\_\_\_. These figures and their descriptions are summarize in Table 2, page \_\_\_\_\_. Using the table of the equivalents suggested by Oriondo and Antonio, results of the computation showed that in Accounting 1, six items were very difficult while 94 items were moderately difficult. In the major subjects, out of the 320 items, 81 were found to be very difficult while 239 were moderately difficult. The breakdown of these figures is seen in Table 2. There were no items

found to be very easy. The very difficult items were thus subjects to change.

It will be noted that accounting 1, only 6 percent of the items were very difficult while in the seven major subject areas, 81 or 25 percent of the test items were very difficult. It can be said therefore, that majority of the test items in the Accounting Achievement Test possessed acceptable levels of difficulty.

Discriminative Power of The Test

Another consideration for claiming that a test item is acceptable or not is its index of discrimination or discriminative power.

In determining the discriminative power of the

**Table  
 Summary Table for the Levels of Difficulty And Discriminative Power of the Items In the Accounting Achievement Test**

Criteria	Subject	Areas	and of	Number	Items	Classified		
	Acctg. 1	Mgt. Services	Theory of Accts.	Auditing Theory	Bus Law	Taxation	Auditing Theory	Pract'l Acctg.
A. Level of Difficult	6	9	14	10	9	10	17	2
Very Difficult	94	41	36	40	41	40	33	18
Moderately Difficult	100	50	50	50	50	50	50	20
Total Items								
B. Level of Discrimination	18	17	14	18	22	20	17	4
	2	1	1	8	1	5	9	1
	23	11	11	17	13	16	9	2
Poor	57	21	24	7	14	9	15	13
Marginal	100	50	50	50	50	50	50	20
Reasonably Good Good Total Items								

Test items, the upper 27 percent and the lower 27 percent scoring groups were used to produce good results (Downie and Health 240.)

To interpret the computed index of discrimination of each item, the following descriptive groupings recommended by Ebel were adopted by the writer (347):

.40 and above – good items

.30 to .39 – reasonably good items (but have possibility to be subject to improvement)

.20 to .29- marginal items (usually needing and being subject to improvement)

.19 and below- poor items (to be rejected or improved by revision.)

Appendices \_\_\_\_\_ to \_\_\_\_\_ presents the discriminative index of the items of the Accounting Achievement Tests as well as the number of pupils in the upper scoring group who answered the item correctly (U); the number of pupils in the lower scoring group who answered the

item correctly (L), and the difference between U and L.

The classification of the test items according to the level of discrimination is presented in Table 2. From the table, it could be gleaned that for Accounting 1, there were 18 poor items, 2 marginal, 23 reasonably good and 103 were good. About 57 percent of the items had acceptable indices of difficulty.

#### **Item- Whole Validity of the Accounting Achievement Test**

The test items were further analysed by looking into their item whole validity. This had to be done in order to determine whether or not an item is working together with the other items, that is, an item is a good member of the team (Garrett 215). According to Downie and Heath, this statistical analysis 'is very useful in item analysis for the items are scored simply as 1 if the answer is wrong (201). The item whole validity was determined through the point biserial  $r$  the formula for which is presented under treatment of data.

The computed values of point biserial  $r$  for each item of the test are presented in Appendices \_\_\_\_ to \_\_\_\_\_. A summary table presenting the number of items presenting and lacking item-whole validity were also the items that were found to have unacceptable indices of difficulty and discrimination.

#### **Face Validity of the Accounting Achievement**

This portion of the study was focused on analysing the test results in terms of their face validity.

As explained by Anastasi, face validity refers not to what the test necessarily measures, but to what it appears to measure (121). Principally, the question of face validity is not a validity in the usual sense but rather one of the rapport and public relation. This simple means that face validity is essential in securing the cooperation of the examinees in taking the test. It further means that the examinees would certainly react mutually to the test, that is, his real ability to answer the test would be revealed.

To determine the face validity of the Accounting Achievement Test, the items were scrutinized to find out whether each item was pertinent to the skills tested.

The researcher believed that the achievement test possessed face validity because when the same was administered to the examinees, they reacted to the test. To them it 'appeared valid' because they gave their full cooperation by

answering all the questions. They found the test items relevant to their lessons in Accounting.

#### **Curricular/ Content Validity of the Accounting Achievement Test**

A test is considered valid when the content covers the subject areas. This is termed as content validity. Other authorities use the term curricular validity.

The procedure observed in establishing the content or curricular validity of the Accounting Achievement Test was the matching of the items with the content or learning units as contained in Accounting Textbooks and course syllabi in the various Accounting Subjects.

Table 3 to 10 on the following pages or tables of specification for the Accounting Achievement Test. They outline the broad skills in the different subject areas, the item number corresponding to each skill and the part or unit of textbook and syllabus covering the item.

The textbook used as the bases for establishing the content validity of the test items are as follows:

1. Accounting 1- Introduction to Accounting by D.S. Pasion
2. Business Law- Obligation and Contracts with Introduction to Law by Hector S. de Leon
3. Management Services- Cost Accounting, Planning and Control by: Mats
4. Taxation: The Fundamental of Taxation by: Hector S. de Leon
5. Theory of Accounts- Financial Accounting Theory and Practice, Part I and Part II by: Valix, Conrado and Peralta.
6. Auditing Theory – Auditing Theory by Holmes and Overmyer
7. Auditing Problems – Auditing Standard and Procedures by: Arthur W. Holmes & Wayne Overmyer
8. Practical Accounting- Advanced Accounting by Guerrero & Peralta

The course syllabi against which the items of the test were checked were the ones approved by the DECS for the Accountancy Course.

Since all the items given in the test were covered by the textbook used in Accounting and by the different course syllabi in Accounting, it can be said that the Accounting Achievement Test possessed content or curricular validity.

#### **Reliability of the Accounting Achievement Test**



To answer the third sub-problems of this study, this section attempted to determine the coefficient of reliability.

In ascertaining the reliability coefficient of the Accounting Achievement Test, the Kuder-Richardson Formula 20 was employed. It is a widely used formula form the coefficient of reliability and gives a good estimate of whether all items represent or inter – item consistency.

Appendices \_\_\_\_\_ to \_\_\_\_\_ are worksheet for the computations of the Kuder-Richardson Formula 20. The worksheet has four columns; column 1 which refers to the item number; column 2 which refers to the difficulty value (p) of the item; column 3 which is labelled q, meaning (1-p): and the column 4 which is labelled pq, the product of column 2 and 3 carried up to four decimals (Downie and Heath 241.)

The computed reliability coefficients indicating inter-item consistency were interpreted using Garretts table of interpreting correlation coefficient, as indicated below:

.00 to  $\pm .20$  denotes indifferent or negligible relationship

$\pm .20$  to  $\pm .40$  denotes low correlation present or slight relationship

$\pm .40$  to  $\pm .70$  denotes substantial or marked relationship; and

$\pm .70$  to  $\pm 1.00$  denotes high to very high relationship

Based on Garrett's scale of interpretation, high reliability coefficient were noted for the areas of Accounting 1, Management Services, Auditing Theory, Auditing Problems, and Practical Accounting 1, for Business Law, Theory of Accounts, the reliability coefficient were found to be substantial, Taxation was the only subject area with negligible relationship.

Generally, therefore, the achievement test in Accounting can be said to be reliable except for the area on Taxation.

## CHAPTER 6 SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

This chapter presents a summary of the study entitled 'Accountancy Achievement Test: A validation. It describes briefly the problem, the research methodology, the finding of the study and the conclusions and recommendations formulated.

### The Problem

The major and minor problems of the study and the research hypotheses tested were:

### Major Problem

The major problem was: How did the Accounting students in Region 1 perform in the Accounting Achievement Test administered for the school year 1990=1991?

### Minor Problems

The sub problems were:

1. How valid are the items of its Accounting Achievement Test in terms of their
  - a) index of difficulty
  - b) discriminative power
  - c) item-whole validity
  - d) face validity
  - e) curricular content validity?
2. How reliable is the Accounting Achievement Test in terms of its inter-item consistency?

### Research Hypotheses

To provide general direction in the conduct of the study it was hypothesized that:

1. The Accounting Achievement Test possessed a high degree of validity and reliability.

### Research Methodology

The research methodology involved the following:

Research Methods and Techniques. The descriptive method of research was used. The study attempted to validate the achievement test in Accounting administered by the Department of Education, Culture and Sports of Region 1, in coordination with Regional Association of Business Educators (RABE) to college students of Accounting enrolled in the various colleges and universities in Region 1 during the second semester of school year 1990-1991.

The validity and reliability of the test were of the test were determined through item analysis, use textbooks and course syllabi and the use of Kuder- Richardson Formula 20.

### Research Subjects

The research subjects of this study are the accounting majors and the Accounting 1 students in Region 1 who numbered 3,306 and 625, respectively and who participated in the DECS-RABE testing program initially implemented during the second semester of school year 990-1991.

### **Data Used**

The data used in this study were the results of Achievement test administered to the subject-cases.

### **Data- Gathering Instruments**

The instrument used in collecting the data was the achievement test prepared by DECS-ROI in cooperation with the Regional Association of Business Education of Region 1.

There were eight subject areas covered by the test namely: Accounting 1, Business LAW, Taxation, Theory of Accounts, Auditing Theory, Auditing Problems, Management Services and Practical Accounting 1.

### **Treatment of the Data**

The data were subjected to descriptive statistical using the following measures: Index of difficulty Index of Discrimination, Index of Reliability, point biserial  $r$ , Mean, Median and Standard Deviation and Kuder-Richardson Formula 20.

### **SUMMARY OF FINDINGS**

From the analysis of the data, the following findings were arrived at:

1. The accounting student scored low in the Accounting Achievement Test as indicated by their mean scores ranging from 8.25 to 60.60
2. Of the 420 items in the Accounting Achievement Test, 82 percent or 343 had acceptable level of difficulty while 18 percent or 77 were very difficult.
3. Out of the total items, 62 percent or 262 had acceptable indices of discrimination while 8 percent or 158 had low indices of discrimination.
4. Ninety- two percent or 386 of the items possessed item-whole validity while eight percent or 34 of the items lacked item –whole validity.
5. Except for Taxation, the test in the other subject areas possessed inter-item consistency as revealed by their reliability coefficients ranging from .67 to .86 equivalent to substantial or high relationship. The index of reliability for Taxation was .06 which indicated negligible relationship.

### **CONCLUSIONS**

Based on the findings of the study, it was being concluded that the Regional Achievement Test in Business Education administered to students at the end of the school year 1990-1991

possesses the qualities of a good test, namely, valid, reliable and discriminating except that in Taxation which was rather low in its index of reliability.

### **Recommendations**

In the light of the findings in this study, it is recommended that the Regional Achievement Test in Business Education administered at the end of the school year 1990-1991 be modified, particularly, the test in Taxation. The improvement of the test in Taxation should consider changing or revising item number 3, 14, 20,23,29,35,36,37,38,39,41, and 48.

### **BIBLIOGRAPHY**

- [1]. Anastasi, Anne. Psychology Testing. New York: The MacMillan Co., 1968.
- [2]. Corpus, Onofre D. et. Al. Education for National Development: New Patterns, New Directions. Manila: PCSPE, 1970
- [3]. Ebel, Robert. Measuring Educational Achievement. New Jersey: Englewood Cliffs, Prentice Hall, Inc., Inc., 1965
- [4]. Garrett, Henry E. Statistics in Psychology and Education. New York: David Mckay Co., Inc., 1958
- [5]. Hasting, Bloom and Mandares. Handbook on Information and Summative Education of Student Learning. 1967
- [6]. Mautz, Robert K. "The Over Intellectualization of Accounting Education, " Accounting Education: Problems and Prospects. U.S.A: American Accounting Association, 1974.
- [7]. Monroe, Walter S. (ed.) Encyclopaedia of Educational Research. New York: MacMillan Co., 1952.
- [8]. Oriendo, Leonora L. and Eleanor M. Dallo-Antonio. Evaluating Educational Outcomes. Manila: Rex Book Store, 1984
- [9]. Ross, C.C. Measurement I Today's Schools. New York: Prentice Hall, Inc., 1954.
- [10]. Sanders, Allen. " A New Introduction to Accounting Combined with a Traditional Textbook: An Empirical Research Study, " Accounting Education: Problems and Prospects. U.S.A.: The American Accounting Association, 1974.
- [11]. Valix, Conrado T. and Jose F. Peralta. Financial Accounting: Theory and Application. Manila: GRC Enterprises and Co., Inc., 1981.

### **B. Unpublished Materials**

- [12]. Edades, Lilia F. " A proposed Division Summative Test in Mathematics for Grade Five and Six, " Doctoral dissertation, University of Pangasinan, 1990.
- [13]. Lee, Isidora A. "Accounting Education in the University of Sto. Tomas, " M.A. thesis, University of Sto. Tomas, 1982.
- [14]. Soriano, Abraham C. The Division of Summative Test in Mathematics: An analysis of its adequacy as a measure of Achievement, " Doctoral dissertation, University of Pangasinan, 1987.
- [15]. Tagle, Alejandro R. "Academic Performance of Accounting Majors of the College of Commerce, "University of Baguio, " M.A. thesis, University of Baguio, 1988.

### **C. Professional Journals**

- [16]. Anderson, Rex A. "Continuing Professional Education," Accounting Journal. (November 1988).

- [17]. Casinero, Jesus A. "Meeting the Challenge of Change in the Accounting Profession, " Accountants' Journal. (December 1990).
- [18]. Lentilhon, Robert W. and Anthony T. Kraystofik. "Education, Preparation and Eamination of the CPA, " Journal of the Accountancy. (June 1984)
- [19]. Paras, Renato L. Reviewing the Quality of Accounting Education, " Accountants Journal. (Second Semester 1984).
- [20]. Patten, Donald J. and Joseph W. Beckman. "An Identification of Trends in the Elementary Accounting Course, "The Journal of Accountancy. August (1972).
- [21]. Salgado, Carmelita G. "Professional Standards Revisited, " Accountants Journal.(1984)
- [22]. Sloan, Donald R. "The education of the Professional Accountants, "Journal of Accountancy. (March 1983).

### **B.Others**

- [23]. Act 3105, The Philippine Public Accountancy Law."