

AN ABSTRACT OF THE THESIS OF

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Title: AN EMPIRICAL STUDY OF THE PROBLEM OF ATTRITION
OF STUDENTS OF FIRST-YEAR ACCOUNTING IN OREGON
COMMUNITY COLLEGES

Abstract approved: _____

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Dr. Fred E. Winger

The study was conducted in order to learn of the extent to which attrition exists among students enrolled in the first-year accounting course in Oregon community colleges, the factors tending to contribute to the problem, and the approaches which might be used to help alleviate the problem.

The design of the study consisted of two parts. The first part of the study was to gather information about the teaching philosophies and practices of the accounting faculties, and the number of students enrolled in and completing the three-terms of first-year accounting during the college years 1970-1972 at the eleven community colleges offering the course throughout the state. These same students were also analyzed by age, sex, marital status, high school background, major, military background, class (freshman/sophomore), and courseload. The second part of the investigation consisted of a two-year controlled study of the students at Linn-Benton Community

College in Albany, Oregon, who had enrolled in the first term of the three-term sequence of first-year accounting in the fall of 1970 (the control year) and those who had enrolled in the first term of the three-term sequence in the fall of 1971 (the experimental group). In this study the day classes of the control year were compared to the day classes of the experimental year, while the evening classes of the control year were compared to the evening classes of the experimental year. The purpose of this latter study was to determine if two types of personalized attention (mandatory individual counseling and voluntary accounting "help" sessions) given to all classes in the experimental year would (1) allow more of these students to complete the three-term accounting sequence, and (2) allow more of these students to score significantly higher on the American Institute of Certified Public Accountants' (AICPA) Achievement Test, Level I, Form E-S. To insure that all students of both years entering the first-term of accounting were equal in accounting aptitude, the AICPA Orientation Test, Form B, Revised, was given.

The results of the findings indicate that the accounting instructors (1) did not have adequate background information about (a) the student's reading and comprehension level, (b) how the student viewed himself as a scholar, and (c) the student's level of interest in accounting at the time he entered; (2) agreed on (a) informing the students early in the course of the value of accounting, (b) building the

student's self-confidence, (c) building their own self-confidence, (d) reviewing solutions to homework in class, (e) providing the students with the best text available, and (f) using all input available to improve their instruction; (3) tended to prefer grouping accounting students (although this was not the case at the time); (4) continued to use the lecture method of instruction exclusively; (5) offered a wide variety of informal opportunities to personalize the learning of accounting by the availability of office hours, individual counseling, and one-to-one and group "help" sessions; (6) have avoided offering more formal opportunities for personalizing the subject matter by seldom using programmed texts and filmstrips, and workbooks and/or practice sets with keys, and audio and video tapes; (7) felt that personalizing the subject matter (a) helped to enhance student interest, (b) helped to enhance student learning, (c) helped encourage more students to complete each term (as well as the three-term sequence), (d) helped the instructor to better understand why some students have certain learning difficulties, (e) encouraged more instructors to more carefully organize their materials, and (f) encouraged more instructors to evaluate their methods of instruction.

Additional findings of the study indicate that the average community college in Oregon had only 30% of all students enrolled in the first-year accounting course complete the three-term sequence. In addition, only 32% of all students required to have at least three terms

of first-year accounting completed the sequence, and likewise only 24% of all students required to have at least one term of accounting completed all three terms of the sequence. In the metropolitan Portland area only 23% of all students, regardless of major, completed the three-term sequence.

An analysis of the personal characteristics of these same students indicates that a larger percentage of the students completing the sequence tended to be (a) male, (b) age 31 or older, (c) married, (d) high school graduates, (e) veterans, (f) sophomores, (g) part-time students, and (h) accounting majors. Students tending to be less successful were (a) female, (b) age 19-21, (c) divorced, separated, or widowed, (d) without either a high school diploma or GED certificate, (e) non-veterans, (f) freshmen, (g) full-time students, and (h) college transfer secretarial science majors.

The results of the controlled study at Linn-Benton Community College indicate that even when students enrolled in the first-year accounting course are required to counsel individually with their instructor at the beginning of each term of the three-term sequence and are given the opportunity to attend voluntary accounting "help" sessions, they will probably (a) seldom attend the "help" sessions, (b) not score significantly higher on the AICPA Achievement Test, or (c) be more likely to complete the three-term sequence than those students not having had these two types of personalized attention

provided to them. These observations led to the conclusion that a communication gap seems to exist between the instructor and the students. To help correct the problem a battery of tests was recommended, including the AICPA Orientation Test, the Minnesota Multiphasic Inventory Test, and the Strong Vocational Interest Blank, in order to better understand the background of incoming students. These tests could then be used in conjunction with the recommended mandatory individual counseling sessions at the beginning of each term along with mandatory laboratory sessions throughout the term. In addition, it was also recommended that pre-tests be given at the beginning of each term to help the instructor better plan his presentations for those areas where students indicated the most need.

The AICPA Orientation Test, Form B, Revised, was concluded to be a valid test by which to measure the degree of success the student could expect upon completion of the three-term accounting sequence.

The results of the study at Linn-Benton Community College also indicate that the students who had enrolled in the evening classes had a wide range of abilities and aptitudes from one year to the next.

In conclusion it appears that personalized attention in its present form at Linn-Benton Community College is not effective in guaranteeing the successful completion of the three-term sequence of first-year accounting. Additional research may still have to be made into the motivational makeup of individual students.

An Empirical Study of the Problem of Attrition of Students of
First-Year Accounting in Oregon Community Colleges

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AN EMPIRICAL STUDY OF THE PROBLEM OF ATTRITION OF STUDENTS OF FIRST-YEAR ACCOUNTING IN OREGON COMMUNITY COLLEGES

I. INTRODUCTION

The first accounting course taken in the lower division accounting and business curriculum is most often entitled Principles of Accounting. In Oregon community colleges it is a three-term sequence, identified by the course numbers BA (Business Administration) 211, 212 and 213. The course, a pre-professional offering, is transferrable within the state from one two-year college to another or from the two-year college to the four-year college or university. The principles course should not be mistaken for Bookkeeping, a semi-professional course, which is not transferrable to four-year colleges or universities.

The following brief descriptions outline the material covered in each of the three terms of accounting (See the Appendix for a complete outline of each respective term.):

BA 211. The course is designed as an introduction to beginning accounting and covers such topics as why accounting is the basis for making business decisions, and how to account for the business' sales, purchases, inventories, and operating expenses. This information is then used to prepare statements of earnings and financial condition.

BA 212. A continuation of BA 211 which helps the students to gain knowledge regarding how to control cash flows, age accounts receivables and account for bad debts, control

inventories, account for the development of costs for long-term assets, control liabilities, and gain insight into the nature of problems dealing with corporation accounting.

BA 213. The final term of the three-term sequence helps the student to learn how to plan and control business costs, how to plan for profit, how sales volume and profit relationships effect company costs, how product and company standards provide means of management control, how management accounting systems help to measure divisional and company performance, and how relevant cost analysis ratios aid in the company's short- and long-range planning operations.

The first year of accounting is the prerequisite for all subsequent accounting courses taken by accounting and business majors. Students majoring in areas other than accounting and business may also be required to take one or two terms of accounting in order to meet the requirements of their respective departments or schools, but usually are not required to take the third term, Managerial Accounting (BA 213).

Regardless of the student major, the course has traditionally posed many problems of learning and adjustment that have resulted in a high degree of attrition among its students.¹ Consequently, accounting instructors on all levels of higher education continue to be deeply concerned about this problem which was first recognized by this investigator while teaching accounting at Linn-Benton Community College in Albany, Oregon.

¹ See page 25 which amplifies on the severity of student attrition in first-year accounting on the national collegiate level.

During the first three years of the college's operation it became apparent that a large number of the students enrolled in the course had not finished the three-term sequence. In addition, only about 50 percent of the students enrolled in the first term (BA 211) had enrolled in the second term (BA 212). Of these latter students, many had experienced learning problems and frequently had not completed the quarter. Enrollment in the third term (BA 213) was usually only about 20 percent of the fall term; with this group, it appeared that students experienced fewer difficulties and were more inclined to complete the term.

Subsequent research supported this preliminary observation. A check of this instructor's class records for each of the years 1968-1969, 1969-1970, and 1970-1971 indicated that the Business Division had offered a total of ten sections of Principles of Accounting during the first three years of the college's operation. Included were three sections (two day classes and one evening class) in each of the first two years and four sections (three day classes and one evening class) in the third year. The number of students enrolled was approximately 250. At the end of this three-year span only 75 students had completed the sequence. These figures represented a 70 percent attrition rate, or conversely, a 30 percent completion rate. This seemingly low degree of successful completion presented much concern to the students, the teacher, the department chairman,

the dean of instruction, the president, and the members of the Board of the college.

Statement of the Problem

The number of students who complete the three-term sequence of Principles of Accounting at Linn-Benton Community College is usually quite small compared to the number who enroll in the first term of the three-term sequence. In order to better understand the reason(s) for this relationship, an investigation of student attrition in first-year accounting throughout the state was necessary to determine if the problem was one that is exclusively inherent at Linn-Benton or was one that is common to all community colleges in Oregon.

Purposes of the Study

The overall purpose of this study was to determine if the problem defined is a prevailing one in the community colleges throughout the state of Oregon.

The specific purposes of this study were:

1. To gain background information from the accounting instructors in Oregon community colleges regarding:
 - a. What they know about their students.
 - b. What they see as their basic responsibilities to their students.

- c. What steps they have established to provide an environment conducive to learning.
 - d. What methods of instruction they practice.
 - e. What attempts they have made to personalize attention.
 - f. What benefits they have detected from providing personalized attention to the students.
2. To gain background information about the personal characteristics, e.g., age, sex, marital status, et al., of the students enrolling in and completing the Principles of Accounting sequence throughout the state.
 3. To determine the number of students within the state enrolling in and completing each term of the course, as well as the sequence.²
 4. To measure the effects of providing two variables of personalized attention on the success of first-year accounting students at Linn-Benton Community College over a two-year period, 1970-1971 and 1971-1972. (The two variables included mandatory individual counseling and voluntary accounting "help" sessions.)

² This portion of the study was necessarily limited to daytime classes because of the cost of secretarial help. The inclusion of the evening classes would have made the study financially prohibitive.

Need for the Study

A rather obvious need for the study was demonstrated already from the plight of the student. When he himself must choose or is forced to withdraw from a course, for one reason or another, he inevitably suffers a very definite and measurable loss in terms of the tuition paid and time spent, both in and out of the classroom. Other less measurable losses may be experienced in terms of the student denying himself the opportunity to take full advantage of the benefits to be gained from completing the sequence, causing possible changes in the student's short and/or long-term plans and self-image. The latter loss may eventually become the most severe of all, since it can perpetuate existing frustrations and tensions, especially for those students already lacking self-confidence and a corresponding good feeling about themselves.

A definite need for the study from the viewpoint of the conscientious instructor also exists. Often working many hours with his students, both in and out of the classroom, he devotes much of his attention upon those students who eventually withdraw from the program. When these students become casualties, the instructor often experiences his own sense of personal failure for not having reached these individuals, especially those who have shown obvious potential.

Another need for the study is apparent from the economic viewpoint. Because community colleges in Oregon receive both Federal and state funds based on the number of full-time equivalent (FTE) students enrolled, it becomes essential that those enrolled continue to do so. Once enrolled, it is also important that the student not withdraw before the end of the fourth week. If he does, then a portion of the above funds are withheld. Clearly then, if the problem continues, the college will lose these monies.

Yet another valid reason for this investigation. Here the interests involved are twofold: (1) the community expects to receive quality education for its tax dollar; and (2) the community also expects that once it has provided a community college to develop employable skills for its students that this task be accomplished. When it appears, however, that these two expectations are not being met, then the educators of the college must assume a large share of the responsibility for correcting the problem.

The results of this study will, it is hoped, provide valuable insight into the nature of the problem and help to reduce its statewide severity should it exist. In any event, the results of this study will provide information which will help to bring into better focus the nature of the problem at Linn-Benton Community College.

Delimitations of the Study

The background information was gathered from throughout the state by the use of a questionnaire sent to each accounting instructor and a personal request for student data sent to the registrar of each community college. The colleges participating in the study were delimited to:

<u>Community College</u>	<u>City</u>
Blue Mountain	Pendleton
Central Oregon	Bend
Clackamas	Oregon City
Clatsop	Astoria
Lane	Eugene
Linn-Benton	Albany
Mt. Hood	Gresham
Portland	Portland
Southwestern Oregon	Coos Bay
Treasure Valley	Ontario
Umpqua	Roseburg

Two community colleges, Chemeketa (Salem) and Rogue River (Grants Pass), had not yet offered the accounting sequence (BA 211, 212 and 213) at the time the study was initiated and were, therefore, excluded from the investigation.

Definition of Terms

To ensure that the terms used in this study are interpreted in the manner intended, the following terms are here defined:

Personalized Attention is an approach to improving instruction which includes many different techniques, including both individual and group instruction outside of the formal classroom setting. Examples include individual counseling, one-to-one "help" sessions, programmed instruction and audio tapes. (See TABLE V.)

Individual Counseling can take place at any time during the quarter, but usually occurs at the beginning or end of the term. Its primary purpose is to get to know the student better by asking him questions about his personal and academic background, his goals while at the college and in the near future, his views on the difficulties he may be experiencing in learning accounting, how he thinks he can overcome these problems, and what he believes the instructor might do to make the topic more easily understood. This type of counseling which takes place between the accounting instructor and student, should not be confused with that type normally done by the regular counseling staff.

Group Counseling is identical to individual counseling, except that it usually includes two or more students at the same time.

Advising as here used is a non-structured procedure by which the student is given guidance and direction on any number of different problems other than accounting.

One-to-one "Help" Sessions refer to student sessions provided at regularly scheduled times throughout the week and term during the college year. Their primary purpose is to allow students to obtain additional instruction from qualified accounting instructors. Although attendance at these sessions is purely voluntary, it is encouraged for those students experiencing difficulties.

Group "Help" Sessions are identical to one-to-one "help" sessions, except that they include two or more students at the same time.

American Institute of Certified Public Accountants (AICPA) is the national professional organization of state licensed certified public accountants. The major objective of the group is to suggest sound accounting principles by which all practicing accountants will be governed.

AICPA Orientation Test, Form B, Revised is an aptitude test that measures a student's entry level of ability for accounting and also indicates his chances for success in the first year of elementary accounting.

AICPA Achievement Test, Level I, Form E-S is an achievement test which measures the extent to which students have learned the topics covered in the first year of elementary accounting.

Assumptions

Before beginning the study, it was assumed that all students enrolled in the three-term sequence at each college were representative of the students usually enrolling in the accounting curriculum. An exception to this view was the evening students. Since these students often attend class for the primary purpose of improving specific job skills, it was assumed they would be more likely to complete the sequence and, consequently, earn better grades. For this reason the evening students were not included in the registrars' report on the statewide study. They were, however, included in the experimental study at Linn-Benton to determine if this view could be substantiated.

The American Institute of Certified Public Accountants Orientation Test, Form B, Revised and Achievement Test, Level I, Form E-S were considered valid and reliable tools for measuring: (1) the initial accounting aptitudes of the entering students in first-year accounting; and (2) the knowledge gained during the accounting sequence for both the control and experimental groups in the Linn-Benton study.³

Any statistically significant differences between the control and experimental groups of the Linn-Benton study were assumed to be the result of real rather than chance differences in the variables under study.

Limitations

Limitations of the statewide study also had to be assessed since the investigator anticipated that administrators of some colleges would choose not to participate. In addition, it was expected that the validity of some of the responses on the questionnaire might be restricted because of the respondents' indifference to the importance of the study. The investigator also expected that some of the data from the registrars' offices might be hastily gathered and could not, therefore, be considered as complete as they might be.

³ Copies of these tests were not included in the Appendix because the AICPA felt the information if made available would invalidate future test results.

Regarding the experimental study at Linn-Benton, it was felt that some of the students might not look upon the individual counseling with the instructor as an attempt to help them. Some students might even consider it a waste of time, or even an invasion of their rights to privacy. Another possibility considered was that those students needing additional outside instruction might not take advantage of the voluntary "help" sessions even though encouraged to do so.

Other limitations of the study recognized that the counseling techniques might vary from one instructor to another. Also the instructor-counselor might not take his counseling responsibility seriously. If this occurred, his attitude might be detected by the students and the expected benefits nullified.

Because teaching methods differ from instructor to instructor, it was noted also that this factor could account for more students completing similar terms from one college to another, or for that matter, completing similar terms within the same college.

Another critical limitation was the inability to control and measure the students' initial level of desire and motivation upon entering the accounting classes. Some students might obviously complete the sequence even though they showed little aptitude for the subject and others might withdraw from the sequence even though possessing above average aptitude.

The final limitation considered was that any conclusions drawn

from the study should be applied only to Oregon community colleges. Since the community college system is still relatively new in Oregon, future changes in the type of student attracted to the two-year college might well provide dramatic differences in the results of subsequent studies of a similar nature.

II. REVIEW OF THE LITERATURE

A review of the literature dealing with attrition of the community college accounting student and ways to implement changes in teaching approaches to help correct or reduce the problem, first revealed the necessity for a better understanding of all lower-division college students. With this review as a basis, the following format was used to analyze the sources published about the subject:

1. Factors relating to student adjustment to college life.
2. Efforts made to improve student adjustment to college life.
3. Profiles of students withdrawing from the community college.
4. Factors contributing to students' withdrawal from principles of accounting.
5. Predictive studies of success in principles of accounting.
6. Current practices to improve accounting instruction.

Factors Relating to Student Adjustment to College Life

An examination of a paper presented by Feldman (10, pp. 1-17) at the 55th Annual Meeting of the American Education Research Association, 1971, indicated that the student, upon arriving at college, is given the opportunity to engage in and practice behavior that was previously either not open to him, not particularly feasible,

or not easy to develop, based on his previous home life. Feldman noted that as new social identities are pressed and impressed upon the student, and he is given the structural opportunities to practice and enact their behavioral implication, the student may well begin to conceive of himself as being a different person from what he once was. These circumstances, then, seem to result in changes in attitudinal and personality traits. Even within a developmental framework, it is possible that changes prompted by new roles in college and by anticipation of future adult roles actually hinder personality growth and development.

A speech by Clyde Blocker (2, pp. 1-25) entitled "Student Needs and the System" pointed out that higher education usually takes no recognition of the student's family background, i. e., level of income, lack of occupational status, geographical or social mobility and indifference to, or scorn of, higher education. Blocker explained that the student in the two-year college has an average self-image, is economically, politically and morally conservative, lacks intellectual or social self-confidence, and aspires only to a middle occupation, and even that without a settled goal. He often must be guided toward compatibility of educational and vocational goals and helped to develop self-acceptance, emotional balance and maturity. The student's search for respect includes academic, social and vocational success at his own level, free of parental restraint. Blocker feels the punch

card processing of students in "the system" discourages all these developments.

Moomaw and Hayden (30, pp. 306-309) suggest that student adjustment may be attributed to different need levels. In their investigation of the manifest need characteristics between transfer and technical semi-professional students at Lorain City (Ohio) Community College, they indicated that the transfer student manifests a greater need to understand himself and others, and that he tends to be more altruistic in his approach to interpersonal relations. He also exhibits needs to affiliate with, and to be dependent on peers and others in his social and physical environment. The technical semi-professional student, conversely, appears to be more achievement oriented toward success in a skilled occupation. These observations thus clearly identify basic differences in the fundamental philosophies of these two classifications of community college students.

In a study of students in Florida community junior colleges, Turner (38, pp. 1-18) indicated that factors other than academic accomplishment may be largely responsible for student perseverance in college. Some of these factors, which are student related, immediately affect the student upon his entrance to college. Examples of these factors include the student's reaction to the interplay of his actual and perceived ability, family and school background and

motivation. College related factors also have a definite impact which very quickly influence the student's adjustment. Examples of these factors include his adjustment to the faculty, the curriculum, and the mores of the particular school.

Sullivan (37), upon transferring from a major university in the state of Washington to a community college in Oregon, expressed the view that "upon seeing the temporary quarters of the school, I lost all desire to put forth any effort. It's just not what I had expected." This student then quickly transferred back to the major university at the end of his first term at the community college. Views such as these tend to support Turner's contention.

Efforts Made to Improve Student Adjustment to College Life

Rubins (35, p. 4382) studied the effect of a parent orientation program on (a) achievement level and (b) the dropout rate of community college freshmen. Three groups of parents randomly selected from the freshmen population accepted for the fall quarter, 1969, at Cuyahoga Community College in Cleveland, Ohio, were included in the test groups. The parents of the experimental group were invited to attend an orientation program prior to the start of classes, were given selected literature about the college and were provided with tours of the campus. The campus administration believed this new awareness of the parents would help to encourage the freshmen in

subtle ways to achieve and continue in college. The parents of the first control group were sent a package of literature similar to that given to the experimental group. The parents of the second control group were not invited to the program, nor were they sent any literature.

Of the 80 sets of parents sent invitations to the program, a total of 78 parents attended. This parent-oriented group represented 43 students. The two control groups, the literature-oriented and the non-oriented, consisted of 50 students each. It was surmised that the students of the parent-oriented group would have a higher mean grade-point average at the end of three academic quarters than the students of either of the two control groups. It was also assumed that the students of the parent-oriented group would have a lower dropout rate.

At the end of the three quarters it was found that there was no significant differences between all three groups. Nor were any noted after one quarter. In addition no significant differences in the dropout rate were noted when using the chi-square test.

Rubins concluded that a one-time parent orientation program does not effect the achievement or the attrition rate of community college freshmen. He recommended that further research should be made in the community college to test different formats of orientation programs. In addition, further research should be considered to

measure the effect of a parent-oriented program on the achievement of inner-city students as compared with that of suburban students.

Kunhart and Roleder (20, pp. 190-191) conducted a controlled experiment dealing with an attitude questionnaire and intensive counseling by the college counseling staff. The attitude questionnaire, which previously had been found to be successful in identifying potential dropouts, was administered to 450 students of psychology at Mt. San Antonio (California) Junior College. Those identified as potential dropouts ($N = 186$) were randomly assigned to three groups, 62 students to a group. In three one-hour group counseling sessions, one group was submitted to a directive counseling approach designed to increase awareness of the dropout tendency and ways to help the situation. A non-directive approach, used with the second group, involved students in problems of college life by using indirect survey sheets and supportive-insight discussions, without identification of the possible dropout tendency. The third group received no counseling treatment at all.

At the end of the semester no significant differences were found in the number of dropouts in any group. The authors suggested these conclusions raised questions concerning (1) a possible threatening quality of the counseling process, especially in the direct approach, (2) an increase in productivity of student success by increasing the number of sessions, (3) group and individual counseling differences,

and (4) techniques to use in the counseling process.

Another effort to help the student make an easier transition to college is being tried at Santa Fe Junior College in Gainesville, Florida, where the traditional freshmen orientation course is being replaced with a new one that attempts to help freshmen become more introspective. O'Banion (31, pp. 12-15) indicates that unlike the traditional orientation course the new one provides opportunity for the student to examine his values, attitudes, beliefs, and abilities and his relationship to other students. The course, which first helps to enlighten the student about his environment, then proceeds to help him think about a philosophy of life. Confronted with the difficulties of all commuting students, i.e., achieving independence while living at home, they can then focus on these difficulties in basic encounter groups and in individual counseling. This approach allows the students to choose their own objectives for the course. The students are pleased to have their experiences and concerns recognized as an area worthy of study, while at the same time receiving credit for the course.

The course is taught by competent counselors (teachers) who are seen by the students as knowledgeable adults, enthusiastic, sensitive, comfortable with students, and willing to look at points of view different from their own. Thus in this kind of learning environment students are willing to examine dimensions of their

personality and to choose health-engendering alternatives for future growth.

A related study was conducted by Bowlin (3, p. 6423) in 1963 at the University of Oregon. He examined the influence of a summer orientation and counseling program for entering freshmen whose predicted grade-point average was less than 2.00 ("C"). He hypothesized the participants of this study would manifest a more satisfactory adjustment to their first term than a control group of non-participants. The criteria for adjustment and measurement were (1) fall term grade-point average, (2) study program stability, (3) self-evaluation of personal adjustment, (4) use of student personnel services, and (5) academic persistence, i. e., completion of fall term and re-enrollment in the winter term.

At the end of the fall term Bowlin concluded that the orientation program was not effective in (1) improving fall term grade-point average, (2) increasing study program stability, (3) decreasing the number of personal problems, (4) increasing the use of student services, and (5) lowering the rate of withdrawals from the University the fall term, or increasing the re-enrollment for the winter term. The experimental group did have, however, significantly fewer members academically disqualified at the end of the fall term than the control group.

In order to detect any inherent differences in students attending

a summer orientation program, a similar study was conducted at the beginning of the fall term. Since the results of the fall study indicated no significant differences between the experimental and control group, Bowlin concluded that the summer group was more motivated than the fall group. His final conclusion was that counseling may not be effective for the items covered at the University of Oregon.

Profiles of Students Withdrawing from the Community College

Anderson (1, pp. 1-20), in a study of enrolled and non-enrolled applicants at Modesto (California) Junior College, examined, for possible significance, the high school courses taken, the geographical location of the high schools, and other selected variables among the enrolled students, the non-enrolled students, and the students dropping out at the end of the first semester, as revealed by the student's biographical inventory and the college's placement test.

The results showed little difference between the groups related to the location of the high school. The enrolled students included more men than women, owned fewer cars, were supported by or were living with their parents, were less likely to be married or need to work, and had better educated parents, as well as having higher career aspirations. The non-enrolled applicants had taken more vocational courses than college prep work in high school, had applied for the same in college, had approximately the same entrance

test scores as the first semester dropouts, and had frequent financial problems. Those students who withdrew from the college generally had lower test scores than those who stayed in college. The author recommended that because of the frequent financial problems of the non-enrolled applicants the college should maintain a program of financial aid and job placement. Although this study was limited to one college, it did suggest that a similar one is in order in those community colleges interested in better understanding the needs of the students in their own community.

While investigating problems of student attrition at Los Angeles City College, Cohen (5, p. 89), observed that dropouts were typically enrolled for fewer than 12 units, tended to be employed more time outside of school, had attended more schools prior to the tenth grade, and had mothers with little education.

In his study at Cerritos (California) Community College, Fitch (12, pp. 1-5) examined the nature of the typical failing student. He noted the student generally has (1) a tendency to select a non-science, liberal arts transfer program, (2) a lack of adequate high school preparation, and (3) a need for remedial work in English and math. These results encouraged him to recommend the college expand its remedial program. He also suggested increased effort by the college counseling staff to further group counseling, emergency "midterm"

counseling for students receiving "F" grades, and improvement in vocational guidance.

A 1967 study of three Florida Junior Colleges by Davis (7, p. 5659) found that of 141 dropouts who had enrolled in the fall of that year as full-time freshmen the following characteristics were most notable. They were pragmatic, materialistic and able to recognize higher education as one of the major prerequisites for upper mobility. They chose junior colleges for reasons of economics and convenience and because they presented less of a threat than four-year schools. A sizeable minority did not have a positive perception of their college experience. As so many students often do, they criticized counseling and a lack of faculty interest and evaluation. Their reasons for withdrawing from school were financial problems, the irrelevancy of a college education, discouragement with meeting academic standards, marriage, health and family problems. An interesting observation from the study was that most withdrawees seemed more disappointed with themselves than with their colleges for their unsuccessful efforts to further their education. Oddly enough, however, only 18 percent of these same students sought assistance to stay in college.

Factors Contributing to Students' Withdrawal from Principles of Accounting: Suggestions to Help Improve the Problem

A 1971 study by The American Institute of Certified Public Accountants Committee on Relations with Community Colleges (16) shows that ten to twenty percent of all community college students take elementary accounting. Of this group, however, only 10 percent take all the community college accounting courses offered, which can include as many as from two to thirteen courses. This statistic might well imply that the students' initial interest level is high, but quickly wanes. However, it is also quite possible that the students completed the one or two terms of accounting they needed and thus had no need to enroll in subsequent terms. In any event, the problem of attrition remains serious and warrants intensive investigation into its reasons.

Hudesman (15, pp. 67-69) expressed the importance of setting educational and career goals by the two-year college student. He believes the incoming two-year accounting student has a very hazy conception of what he expects from his forthcoming educational experience. This vagueness, no doubt, influences the student's ability to function in the college situation. By comparison, he goes on to say, those students who have a somewhat clear perception of their vocational goals are more likely to know what they want from a community

college education, and consequently, they are more likely to be successful.⁴

Deakin (8, pp. 57-58) observed at Lehigh (Pennsylvania) City Community College that all too often students with less than superior abilities are "stirred" toward business and accounting, and thus, they "plunge" into accounting and find they are totally unprepared. They quickly become lost and usually remain lost. Hence, the accounting course is quite often blamed for their downfall. In an attempt to provide a solution to the problem, Deakin noted that there is little widespread preliminary testing for accounting aptitude. He pointed out that although the college boards and American College Testing (ACT) Examination are given to many students, these tests are used to measure academic subject aptitude and not any real aptitude for accounting. He, therefore, proposed that more colleges give the American Institute of Certified Public Accountants' Orientation Test since it does have a high correlation between the test scores and grades earned in the first-year accounting sequence. This approach would allow the student to better evaluate his career objectives. In addition slower students could be placed in a course geared specifically for them, while the better students could be placed in a more enriched course to meet their advanced abilities.

⁴See page 29 for background information leading to Hudesman's conclusions.

Another proposal by Deakin concerns those 90 percent of the students in the principles course who are not accounting majors. He recommended a course in accounting that briefly illustrates methods and then develops the uses of accounting data for business decisions and managerial applications. He also expressed the view that students lacking the motivation to study accounting, per se, may gain motivation when studying the subject in a course specifically adapted to their career objectives, e.g., an accounting course outlining accounting problems in the forest industry. Since most accounting texts are not suited to this approach, he also proposed that texts be written for the two-year non-major with this objective in mind. (This proposal also seems to have merit for those students in the four-year college or university as well.)

In an article entitled, "The Accounting Curriculum," Kelly (18, pp. 25-32) observed that the community college accounting student, generally a recently graduated high school student, comes to the two-year college to gain an education that will help him obtain immediate employment. Since the community college also attracts the capable student, but oftentimes one who comes from less favored socio-economic groups, this student also may desire to find outside employment to meet his financial obligations. Considering these students and their related circumstances, Kelly suggested that the colleges' counselors recommend to the students that they either

(1) limit their off-campus work load to no more than 15 hours per week, or (2) reduce their course load in order to prevent academic strain. The possibility exists that if this precaution is not taken, many of these students may soon be dropouts from the accounting curriculum, as well as the college.

Simons (36, pp. 139-148) also advocated more adequate student counseling, as well as testing, based on his study of accounting graduates at the University of California at Los Angeles. Although his study dealt with the four-year college and university, the views expressed appear to have much relevance to accounting students at the community college. Simons recommended that there should be more help to the student in the form of testing for special aptitudes (or lack of them), vocational guidance and counseling for UCLA graduates.

Responses to a student questionnaire by these graduates were typical of the following:

The University must develop more interest and concern for the student, how he is doing, what he can do to help himself, and how he can identify his problems. I always felt I was just another number at school. I felt (sic) I was no real personal concern of any teacher or advisor.

More than anything else teach the student as soon as possible how to study in order that the most basic and fundamental concepts of every course will not be lost.

Other students expressed the view that there is a definite need by the university to determine whether the student has a high aptitude and interest in accounting. They also expressed the need for the faculty to inform them of the types of demands that would eventually be placed on them once they were employed in the field of accounting.

Predictive Studies of Success in Principles of Accounting

To enable educators to better understand the reasons for student success or failure in the principles of accounting course, much effort has been extended to study the factors that may be used to predict these results.

One such study by Hudesman (15, pp. 67-69) at New York City Community College endeavored to evaluate the predictive validity of the Strong Vocational Inventory Blank (SVIB) for accounting students. The subjects in the study included 56 incoming NYCC male students who were registered as day students. Each student was given the SVIB as part of a testing and advisement battery. The intent was that after two years the results could be compared for those students who graduated and those who had withdrawn. At the end of this period, 29 students had graduated, 25 had dropped, and two still had not finished. Hudesman's evaluation of the results showed significant predictive ability for those students who had been able to complete the program. The successful students had indicated a strong interest

in accounting-type job activities when first taking the SVIB; the students who had not graduated or stayed in the accounting major had indicated considerably less interest in accounting-oriented work. He contends, therefore, that the SVIB may serve as a differential screening device to point out those students likely to need vocational counseling.

Larsen's (22, p. 1304) study, often referred to in the literature, indicates that the grades of students in the first quarter of the principles course might be predicted with slightly greater accuracy from the student's college gpa than from the various tests used at East Carolina (North Carolina) College (now a University). The tests included the American Council on Education (ACE) General Ability Test, and the Cooperative College Math Pretest. Larsen indicated that the ACE quantitative score had greater relative weight for the men than the women. The ACE reading score, however, had greater relative weight for the women, as did their grade received for the introduction to business course. The results of the Cooperative College Math Pretest (see the Appendix for an explanation of the purposes of these tests) indicated definite statistical differences as a predictor for the women, but not for the men. When examining the total score for the quantitative and reading sections for the ACE test the elementary accounting achievement of the men and women was predicted with approximately the same degree of accuracy.

Peterson (32, p. 61) became interested in the results of Larsen's study and went on to conduct one dealing with predicting success (or failure) for students in beginning accounting. The problem undertaken in his research was to select factors from the student personnel records of those students who were enrolled in the first quarter of principles of accounting at the University of Minnesota and then to develop a statistical equation which could be used to predict the probable success or failure of future students enrolled in the course.

Peterson selected quantitative measures of abilities, achievements, interests, and personalities of the students in his sample. From the results he drew the following conclusions:

1. The basic contention of the study proved that grades, achievement tests, interest tests and personality tests can be used collectively to predict the student's successes in college accounting.
 - a. The best single predictor of grades in the principles course at the University was the student's grade-point average. He noted that grade-point averages in economics, mathematics, and English were also useful.
 - b. The grades earned in the first quarter of the principles course are the best predictors of grades earned in subsequent quarters, but certain test instruments might

also be helpful, e.g., the Introversion-Extroversion scale of the Minnesota Multi-phasic Personality Inventory.

- c. Students who did well in accounting tend to show a prior interest in accounting (confirming Hudesman's views, p. 29), while at the same time indicating a lack of interest in such fields as public administration, social work, ministry and teaching. He suggested this latter conclusion indicated that prior attitudes toward work and a choice of professions could, therefore, affect the student's achievement in accounting.
 - d. Students who did well in accounting tended to show personality test scores associated with social introversion and a lack of normal adjustment to college life.
2. Measures of verbal ability were found to be of significant value in predicting grades in the principles course.

The above conclusions led Peterson to recommend that further research be conducted employing the factors used in this study and/or other factors which appear to be related to achievement in accounting. He continued by recommending further research that would explore the relationship between measures of verbal ability and achievement in college accounting. His final recommendation was that further studies be conducted to explore the Minnesota Multi-phasic

Personality Inventory scales as predictors of achievement in college accounting.

Landwehr (21, pp. 2280-2281) studied entrance examination scores and the grades earned in the beginning accounting classes at West Liberty State College, West Virginia, to determine whether or not they could be used as predictors of success in the study of accounting. Interviews and questionnaires sent to faculty members at other colleges were also used to attempt to determine the reasons for success or failure in the study of beginning accounting. Results of the investigation showed that accuracy of prediction of students' grades within the 95 percent confidence limits ranged from 60 to 100 percent when predicting grades in the advanced and specialized accounting courses from the grades received in Accounting I. The percentages improved from 82.29 to 100 percent from the grades received in Accounting II.

As a result of his observation, Landwehr concluded that:

1. Grades in the beginning accounting courses are the best predictors of success in the study of advanced accounting.
2. The following entrance examinations have little, if any, value in predicting success in the study of accounting: The ACE Psychological Examination for College Freshmen, the Kelley-Greene Reading Comprehension Test, and the Ayres Handwriting Scale.

3. Predictions of success in the study of the advanced and specialized accounting courses can be made with 95 percent accuracy or better from the student's grade in Accounting I or II.
4. A majority of the colleges and universities answering the questionnaires who favor the establishment of prerequisites for accounting majors believe grades or grade averages in beginning accounting courses should be used as the prerequisites.

The most comprehensive study dealing with understanding the variables which contribute to the successful or unsuccessful performance of students in principles of accounting was conducted by McIff (26, pp. 272-273) at Utah State University in 1964-1965. The objectives of the study were twofold. The first objective was to attempt to reduce the number of failures in the second quarter of accounting through better guidance of students and more exacting standards for admission to second-quarter accounting. His second objective was to improve teaching performance by gaining a better understanding of the factors which contribute to the success or failure in such courses.

The students chosen for the study were those already in second quarter accounting who had completed at least 32 quarter hours of general course work, but who had no more than 130 quarter hours in

residence. This restriction was intended to remove any possible bias which might have existed because of the use of different textbooks, instructors, and course content of similar courses taken at other colleges. The investigation compared three groups of students in second-quarter accounting. The first group consisted of those students who had earned "A" or "B" grades, the second group consisted of those who had earned "C" grades, and the third group consisted of those who had earned "D" or "F" grades. Groups I and II were identified as the successful groups, while Group III was identified as the unsuccessful group.

The selected variables compared among each of these groups were pre-college achievements, aptitude and interest tests, various student and course characteristics, study habits, personality variables, and achievement in college.

McIff identified seven null hypotheses. They were:

1. There are no significant differences between students' pre-college achievement and the grades obtained in second-quarter accounting.
2. The unsuccessful groups of students do not score lower on aptitude and interest tests when compared with the successful groups of students.
3. There are no significant differences relating to the various

students and course characteristics between the successful and unsuccessful groups.

4. Unsuccessful students do not have significant inferior study habits as compared with successful students.
5. No significant differences exist between the various personality variables of unsuccessful students as compared with successful students.
6. There are no significant differences relating to various achievements in college between the successful and unsuccessful groups of second-quarter accounting students.
7. Students enrolling in introductory accounting courses as freshmen do not earn grades in second-quarter accounting that are significantly different from those earned by students of advanced standing.

The data was examined by the t-test and the chi-square test to analyze differences and the significance of differences between the groups on the discrete variable.

McIff found significant differences between the successful and unsuccessful groups on the following variables:

1. Aptitude and interest tests, namely, the ACT, AICPA Orientation Test, Strong Vocational Interest Blank for Women, and on responses to the vocational questionnaires.
2. Student and course characteristics, namely, student's sex,

student's predictions of final grade, accounting pre-test scores, and number of days absent from the accounting class.

3. Study habits, namely, responses to various questions relating to methods of preparation of daily assignments and examinations, when such preparations are made, and where they are made.
4. Personality variables, namely, four of fifteen personality scales on the Edwards Personal Preference Schedule.
5. Achievements in college, namely, grades earned in freshman English, beginning college mathematics, first-quarter accounting grades, the level of college mathematics completed, all accounting tests administered during the study, grade-point average in business subjects, and in all subjects to date.

McIff found no significant differences on pre-college achievement, the Strong Vocational Interest Blank for Men, student's age, marital status, place of residence, student's evaluation of the use of a practice set, average number of hours per week devoted to the study of accounting, or average number of hours per week devoted to the study of all other subjects.

He concluded his observations by making the following comments:

Methods and curricula which have lost their usefulness should be discarded in favor of more functional ones. Every promising idea for changes in our educational system should face the scrutiny of a philosophy dedicated to the improvement of the individual and his contributions to society. If ability groups, established by objective criteria, meet this standard, then educators should not hesitate to use such means to increase the opportunities for success by the individual. Both high and low ability students have a need for special considerations, if they are to realize maximum potential.

Because the unsuccessful accounting student has experienced difficulties in his first accounting course . . . his instructor has the responsibility to see that these basic skills . . . and principles of accounting are reviewed as frequently as possible throughout the second course in accounting.

McIff (27, p. 5767) encouraged all instructors of principles of accounting to consider other possible criteria for examination in order to be in a position to quickly recognize potential failures in accounting. In this way, the students can take necessary action to correct their situation and thereby increase their chances for better success in accounting courses.

To improve understanding of success or failure in introductory accounting, McIff further recommended for consideration a study designed to test the significance of a required laboratory in conjunction with the lecture course in introductory accounting as opposed to a voluntary laboratory.

In an unpublished dissertation by Poor (33, p. 2381) a similar study was made to determine the similarities and differences of the successful and unsuccessful second-semester accounting students at

Northern Illinois University. The design of the study was to compare 33 students who had earned "A" or "B" in the second semester and 23 students who had earned "D" or "F" in the second semester. Emphasis was placed on the study habits of the two groups. The results indicated:

1. The successful students made a preliminary survey of the material before intensive study of the individual parts.
2. They worked the assigned problems.
3. They had gone over the assigned material before it was presented in class.
4. They found a quiet place to study.
5. They reviewed assigned exercises and problems before taking an exam.
6. They worked additional problems not assigned while preparing for an exam.
7. They avoided last minute cramming for examinations, and
8. They checked all adding and subtracting after each calculation when solving a problem.

The foregoing studies clearly indicate the intense concern of accounting educators to identify those students who may experience difficulty in the beginning accounting course, as well as the more advanced ones.

Current Practices to Improve Accounting Instruction

Student attrition can oftentimes be directly related to the environment of the classroom and the accounting instructor's teaching methods and performance. The following section will elaborate on those means by which accounting instructors have attempted to improve their teaching performance, and thereby, hopefully, improve the students' chances of being successful in principles of accounting.

Individualized Instruction

Gibbs (14, pp. 21-22) at the University of California at Los Angeles re-emphasized the point that students of wide ranges of abilities continue to enter the bookkeeping and accounting classroom. According to him, much of the large dropout and failure rates occur as a direct result of this factor. In the typical classroom each student is usually required to complete each unit in the same amount of time. Unfortunately, however, not all students can maintain this pace expected by the instructor.

Since successful progress in accounting activities is based on mastery of prior material, the student who fails to maintain this pace is soon caught in a role of cumulative confusion. It is little wonder that at some time soon in these students' academic lives they therefore make the decision to withdraw from the bookkeeping-accounting sequence.

As an alternative to time blocks, Gibbs suggests that the book-keeping and accounting program be individualized to help overcome this cumulative ignorance. He believes this can be accomplished by (1) defining the objectives to be met in the course, (2) preparing criterion tests to measure attainment of these objectives, and (3) establishing levels of performance for each objective at the mastery level. If these objectives are to be met, however, he explains that two conditions must be met. One, the students must have the opportunity to test themselves on new material as they come to it (active responding), and two, they must have the opportunity to see their answers are right (corrective feedback).

Gibbs also stated that although individualized materials may be alienating for some students, they do provide the conditions necessary for independent learning and growth.

Zahorik (39, pp. 453-455) added still another viewpoint on individualized instruction that oftentimes has been overlooked. In a case study dealing with this method of instruction, he observed that individualized instruction as compared to group instruction does not tend to recommend itself because the instructor was often talking more, answering more questions, providing less logical comparisons and making less use of higher thought level solicitations. This view clearly seems to indicate that individualized instruction has inherent

problems, as do other methods of instruction, which must be corrected if the approach is to be successful.

Laboratory Sessions

Larson (23, p. 200) conducted a study to evaluate the laboratory teaching methods for a beginning course in principles of accounting. In his study he used 223 accounting students enrolled at Montana State College in the Autumn of 1961. Students equal in age, sex, test scores and other selected variables were divided into three groups and all assigned to required laboratory sections. The first group, identified as the neglected group, used the laboratory with no instruction or guidance. The instructor aided students only as a last resort. No formal or informal presentations were provided. The second section was the regular laboratory group. Although the students were not neglected and the instructor answered students' questions and made informal presentations of common problems, no special effort was made to help the student. The third group, the enriched one, was provided extensive use of visual aids, review lectures, greater attention given by the instructor to detail, and definite attempts to personalize instruction. All three groups attended the three hours of lecture required per week.

The results indicated the enriched group was significantly higher on its mean grades earned in the course. In addition, 53.8

percent of the dropouts came from the neglected group. These results, although limited to one study, definitely emphasize the importance and need for more personal attention on the part of the classroom instructor.

Practice Sets

While at Colorado State College in 1963, Dow measured the effectiveness of practice sets in elementary accounting. The purpose of her study was to compare the relative effectiveness of a course in beginning accounting which included practice sets to a course using only theory and problem solving (short problems). A secondary purpose of her study was to determine the nature and trends of divergent attitudes toward accounting on the part of students who worked only short problems as compared to those who worked practice sets.

The design of the study involved 473 students in 24 elementary accounting classes in 20 colleges. Each class was divided into (1) an experimental group who worked only short problems, and (2) a control group who worked only practice sets. The study was further divided in order to conduct two experiments at the same time by assigning 12 of the classes to Experiment A and 12 of the classes (24 classes in all) to Experiment B. Experiment A compared the results obtained from the experimental groups using only one practice set with control groups who worked with short problems.

Experiment B followed the same plan, but with the results obtained from the use of two practice sets compared to the use of two units of short problems. Instruction used was the same for both groups. Achievement was measured by the AICPA Achievement Test, Level 1-A.

To ascertain student attitudes toward accounting and to determine whether there were changes in these attitudes as a result of having taken the elements of accounting course, a 20-item opinionnaire was administered at the beginning and end of the course. In order to determine the orientation of the student attitudes toward practice sets, a second section of the opinionnaire dealing with the values to be derived from sets was administered at the completion of the course to those who had worked them.

Dow concluded from the above activities that practice sets are no more effective than short problems in improving students' mean test scores on the AICPA Achievement Test, Level 1-A. In addition, the affirmative attitude of both groups toward accounting, first detected at the beginning of the course, diminished. And finally, those students who had worked the practice sets felt they were beneficial, but they also felt that the course should never include more than two practice sets.

Although the results were limited to one study, they do provide valuable insight into the relative merits of practice sets. Additional

investigation into the benefits to be gained from practice sets seems warranted.

Programmed Instruction

Daily (6, p. 4061) studied the effects of programmed instruction in the principles of accounting course where the students were taught by the traditional text-lecture method and the "scrambled" programmed text-lecture method. The subjects were 157 students who had taken the AICPA Orientation Test in September, 1967-1968, and who had enrolled for the second semester in the principles course in one of the four data-producing colleges.

The control group included 70 students from three colleges in Kansas who received instruction by use of the traditional textbook, Accounting Principles by Niswonger and Fess, ninth edition. The experimental group included 87 students from three classes in one college in Massachusetts who received instruction by use of the programmed textbook, Accounting: A Programmed Text by Edwards, Hermanson, and Salmonson.

The technique of multiple regression was used to determine the relationship between the scores made on the AICPA Achievement Test and the method of instruction.

Daily's findings showed no significant relationship existed between achievement in accounting measured by the AICPA

Achievement Test and the method of instruction. A significant relationship was, however, found between achievement in accounting measured by the AICPA Achievement Test and verbal and computational ability as measured by the AICPA Orientation Test.

A study reported in The Accounting Review by Markell and Pemberton (29, pp. 381-384) also examined the effect of a standard text and a programmed one on the achievement of accounting students at the University of Delaware. For each student, the University records were used to determine a cumulative index in all work taken at the school to date, their predicted grade index that was determined upon their admission to the University, and a composite prepared from these two. The grades for the three common examinations each semester were compared with this computed composite and differences noted.

At the end of the first semester the results indicated no statistically significant differences between the two groups. A similar comparison at the end of the second semester showed a significant difference. This result led the authors to believe there might be an advantage to the programmed text.

Student reaction to the programmed text was evaluated to provide additional insight into the conclusions. Those students expressing difficulties with the text found it (1) difficult to become accustomed to, (2) difficult to review for exams, and (3) difficult to use to look

for a specific point. Those expressing satisfaction with the programmed text felt it (1) constantly tests knowledge, (2) helps you to learn more, (3) requires you to pay attention, and (4) is a good way to present the material.

Faculty members criticized the programmed text because it required a great deal more time to review before the instructor could present new material to the students.

Butts (4, p. 4060) analyzed the effect of programmed instructional materials in the laboratory to audio-tutorial materials in the laboratory, in addition to regular textbook assignments in the laboratory based on student achievement in the accounting principles classes. The students at Southern Oregon College, Ashland, Oregon, fall term, 1968, and those at South Georgia College, Douglas, Georgia, winter term, 1969, were the subjects of the study. The students were randomly assigned to the control group, the audio-tutorial group, or the programmed instruction group. All three groups used the same textbook and received the same lectures from one of the investigators.

The audio-tutorial group received traditional instruction and laboratory materials consisting of a coordinated set of magnetic tapes and slides and assignment exercises. The control group received traditional instruction and laboratory assignment exercises similar to those given to the audio-tutorial group. The programmed group

received traditional instruction and programmed instruction laboratory materials.

The 50-item criterion test constructed by the investigators was checked for reliability and validity. The AICPA Orientation Test, Form B, Revised, was used as the concomitant variable. The analysis of covariance controlled the effects on student achievement of differences in aptitude as measured by this test.

The resulting statistics led Butts to draw the following conclusions:

1. The students in Accounting I who received the programmed laboratory achieved as well as the students who received the controlled laboratory.
2. The students in Accounting I who received the audio-tutorial laboratory achieved as well as the students who received the controlled laboratory.
3. The students in Accounting I who received the audio-tutorial laboratory achieved as well as the students who received the programmed laboratory.
4. Through the use of the programmed laboratory and the audio-tutorial laboratory it is possible to obtain equal achievement compared to students receiving the controlled laboratory and still allow the student the opportunity to select the time most suitable for his laboratory.

5. Handling larger enrollments in Accounting I courses without additional staff will be possible through the use of programmed laboratories and audio-tutorial laboratories.

To those students experiencing scheduling difficulties, among others, Butts' fourth point should be useful for both students and college administrators.

New Media and Approaches

A study by McCormick (24, p. 5766) at the University of Iowa in 1965 attempted to investigate the role of new media in the teaching of college accounting. He obtained information through a search of the current literature, through direct correspondence with manufacturers and suppliers of the new media, and through the use of mail questionnaires to professors in selected universities and public junior colleges.

The information received from these sources indicated that instructional television can extend the range of effectiveness of the college accounting professor. McCormick also indicated that recent research has repeatedly shown that television does not diminish the effectiveness of instruction. At the same time, television may offer opportunities for improving the effectiveness of instruction by (1) permitting better utilization of permanent well-qualified faculty members to teach beginning accounting courses, and (2) by stimulating

more conscientious preparation of lesson plans. He also discussed programmed instruction and concluded that this method does appear to have potential in helping to improve accounting instruction, and at the same time improve the ease by which the student learns the subject matter.

McCormick's final observation was that the most readily adaptable media for the teaching of accounting are the projective media, particularly transparencies and the overhead projector since they are helpful both in small classes and in large group instruction.⁵

McCosh (25, pp. 274-276), in a study at Colorado State University, challenged the benefits that beginning accounting students could derive from closed circuit television. He stated that students receiving instruction by this method felt "the taped presentations were dry and boring." This criticism was compounded by the students' inability to ask questions and receive answers when needed; this resulted in creating frustration and hard feelings.

McCosh, in this same study, also explored the effects of a separate study by Leonard Allen, a graduate assistant at CSU. Allen studied the effect of five varied teaching approaches when correlated with subject comprehension. The methods compared were as follows:

⁵ Specially designed lecture halls having a rapidly inclining seating area rising away from the lectern also may help to improve the students' vision and sense of belonging to the group.

1. Students received live instruction from a regular full-time faculty member.
2. Students received live instruction from a graduate teaching assistant.
3. Students were taught by a regular faculty member in conjunction with a programmed learning approach.
4. Students received instruction by closed circuit television where the instruction was by a full-time faculty member.
5. Students received instruction by closed circuit television where the instruction was by a graduate teaching assistant.

Allen concluded from his findings that closed circuit television does not seem to hinder the students' professional advancement. This could also suggest that closed circuit television does nothing to advance the students' professional growth either.

A study by Madsen (28, pp. 22-23) provided some insight into the effects of the overhead projector. In 1968-1969, a study was made at three high schools in Minnesota to detect the improvement of bookkeeping-accounting instruction by the use of the overhead projector. The study consisted of two sections in each of the three high schools; each of the two sections being taught by the same instructor. One section was the control group who had no transparencies presented to it, and the other section was the experimental group who had them presented. This media included 80 transparencies and 29

overlays. These items were used 25-100 percent of the classtime.

The conclusions drawn by Madsen were that:

1. The first year bookkeeping-accounting students did significantly better taught by the transparency method.
2. Boys of average ability did the best by this method.
3. Girls did not benefit as much as boys from the method. In fact, girls of high ability had almost no deviation from the mean scores on the achievement criteria used in the testing devices.

Additional studies dealing with the overhead projector should be done on the college level in order to better understand other possible advantages that can accrue from this method of instruction.

Reactions to the Literature

The problem of student attrition in both two-year and four-year colleges and universities apparently has no easy solution. Attempts to better understand the inherent nature of it, however, are continually being exerted. These efforts have included such means as freshman orientation, testing of entrance levels of abilities and aptitude, personal and vocational guidance and counseling, predictive investigations, and controlled experiments to discover the effects of various teaching approaches.

All of the above factors have been instrumental in providing the background information necessary for conducting the following study and, it is hoped, placing the results in proper perspective.

III. DESIGN OF THE STUDY

The design of the study was to (1) examine the prevailing trends and methods of instruction of accounting currently taking place throughout the state, (2) gather background information about the extent to which attrition exists among students in first-year accounting at Oregon community colleges, and (3) to measure the effects of personalized attention, including individual counseling and voluntary "help" sessions, on the success of first-year accounting students at Linn-Benton Community College in Albany, Oregon.

Sources of the Data

The following community colleges were considered to be the population of the study from which the information would be drawn in order to accomplish the first two objectives discussed in the preceding paragraph:

<u>Community College</u>	<u>City</u>
Blue Mountain	Pendleton
Central Oregon	Bend
Clackamas	Oregon City
Clatsop	Astoria
Lane	Eugene
Linn-Benton	Albany

<u>Community College</u>	<u>City</u>
Mt. Hood	Gresham
Portland	Portland
Southwestern Oregon	Coos Bay
Treasure Valley	Ontario
Umpqua	Roseburg

Linn-Benton Community College, one of the eleven community colleges, was chosen as the site to study the effects of the personalized attention because the investigator had greater access to those facilities and was one of the instructors involved.

Procedures Used in the Study

Once the community colleges had been determined from which the data would be gathered, it was necessary to decide how best to obtain the types of information required to accomplish the objectives established. After consideration of such factors as time and money, it was decided to send a questionnaire (See Appendix) to the accounting instructors throughout the state to determine their philosophies and practices. The instrument was constructed in six parts, and answered the following questions:

1. What do you (the accounting instructor) know about the background of the students entering your Principles of Accounting class?

2. What do you perceive as your basic responsibilities to these students?
3. What steps have you provided to ensure a sound learning environment?
4. What methods of instruction have you used in the past, are using at the present, or intend to use in the near future?
5. What attempts have you made to make your instruction more personalized for your students?
6. What benefits, if any, have you noticed from using a personalized approach to instructing first-year accounting students?

After the initial draft of the questionnaire had been prepared, a copy of it was sent to each member of the investigator's doctoral committee. Their suggestions were integrated into a revised form. The next step entailed piloting the instrument with four community colleges throughout the state to assure obtaining views from instructors in different sections of the state. These colleges were Lane, Treasure Valley, Blue Mountain, and Chemeketa. The accounting instructors at these colleges were asked to make suggestions about the relevancy of the questions and the logic of the placement of the six parts. (See page 55.) In addition they were encouraged to indicate what other questions should be included in the study.

The comments of the instructors were then evaluated and

appropriate changes made where considered necessary. This second revision was returned to each member of the doctoral committee for final approval of the document. Upon receiving their approval, the questionnaire was ready to be sent to the various community colleges.

Approval Required to Contact the Community Colleges

Before being allowed to contact the respective community colleges to secure the desired information, it was necessary to obtain the approval of the Oregon Community College Association (OCCA). The Executive Secretary of the organization, Dr. Donald Shelton, required that a copy of the research proposal be submitted to his office, along with the steps that would be followed for conducting the research at each community college.

In order to gain approval, the Executive Secretary appointed a committee of faculty and administrators from the various community colleges to examine the request for conducting the study, including its purposes and the steps that would be followed in conducting it. The committee's evaluation had to be unanimous in order for approval to be granted.

The committee who examined this proposal was composed of two registrars from two separate community colleges and four accounting instructors from each of the community colleges mentioned in the pilot study. One registrar felt the study could not meet

his approval because it appeared to be asking for data that was of a preferred and confidential nature. A subsequent meeting with this administrator assured him that no names or grades would be used, thereby guaranteeing anonymity. This registrar then agreed to give his approval and the committee was able to indicate its complete acceptance for conducting the study. Their report was then returned to Dr. Shelton's office for his final review and approval was given. (See Appendix for letter granting this approval.)

The Statewide Study

Mailing of the Questionnaire. With the receipt of the OCCA approval, the questionnaires were sent to the business division chairmen at the 11 community colleges in the state. Each chairman was asked to give a copy of the instrument to each accounting instructor in his department. Once the questionnaire had been completed it was to be returned to the chairman, who, in turn, would return it to the investigator.

The questionnaires were mailed December 15, 1971, with the intent they be returned in the ensuing three weeks. Since the returns were slow, a telephone follow-up was conducted to verify that the questionnaires had been received by the colleges and that they had been distributed to the individual instructors. This had been done in all cases. The problem existed with the instructors themselves.

Many simply had not taken seriously the request to complete the questionnaire. Others had simply misplaced their copy. Still others had completed the instrument, but for one reason or another had failed to return it. Subsequent follow-up produced at least one returned questionnaire from every community college. Only one community college, a large metropolitan one, returned more than one questionnaire.

In speaking with the various business department chairmen about this reduced return, they indicated that, in most cases, they were convinced the responses were a consensus opinion of all accounting instructors within their departments. Based on these conversations, it was decided to draw conclusions about the entire transfer accounting sequence at each community college from the single questionnaire.

Request to the Registrar. To supplement the information obtained from the questionnaires, it was also decided to contact the registrars at the 11 community colleges to learn how many students had enrolled in each of the three terms of the accounting sequence, how many had completed each term, and how many had completed the entire sequence. Additional information was requested about the students who had enrolled in the fall term of 1970 and 1971. This information included questions about their age, sex, marital status, high

school diploma or GED certificate, major, class standing (freshman/sophomore), veteran, and full- or part-time student. The reason for this request was to examine the personal characteristics that might appear common to those students completing or not completing each term, as well as the total sequence. If a pattern appeared likely, it was possible that future students who might be more or less successful could be more quickly and easily identified. This identification could then be used to help counselors and instructors alike to work with these students in a more useful and positive manner. In this way students who appeared likely to experience difficulties with the course could make possible changes in their career objectives before they spent a disproportionate amount of time in a course that offered them little chance for success.

In January, 1972, a letter (See Appendix) was sent to the registrar at each community college requesting the information outlined above. The returns from their offices were also slow. Additional telephone calls helped to better identify the reasons for the delay. Many of the registrars did not have the office staff or time to gather the necessary information. To combat this reaction, an offer was made to pay for the services of work-study personnel who could help gather the information requested. Immediately a favorable response was received from the colleges previously reticent to provide the data. The work-study personnel were put to work gathering the

information, and the responses were returned very shortly thereafter.

There was one exception to the prompt success of obtaining all the data. This exception, although temporary, came from one large metropolitan community college. The administrator responsible would not allow work-study personnel to view other student records. The effect of this denial was to seriously limit the extent of the information to be gained from the study if cooperation was withheld. The president of the college was visited personally to allow the investigator to explain the significance of the study and to show him how the results of the study could benefit the students and faculty in his college as it related to the college transfer program in accounting. He asked that he be given additional time to re-examine his position. Within a week, a letter was received from him indicating a compromise proposal. He stated that he would agree to give the data for two sections of the 12 or 13 sections usually enrolled in the fall of each year of the two-year study. The offer was accepted, since not to do so would have seriously limited the study both from a statewide and metropolitan basis of comparison. With this problem resolved, all data requested from the registrars had been received through the fall term of 1971-1972, including all of the 1970-1971 college year. (See Appendix for sample return.)

The follow-up request for the number of students entering and completing the winter and spring terms of 1971-1972 was made

June 15, 1972. The responses to this later request were much more prompt. The reason for this was attributed to the investigator having become known to the administrators and staff of the participating colleges, and also having made prompt payment for the services they had previously rendered.

Statistics Used to Evaluate the Data from the Community Colleges. No formal statistical analysis was used to analyze the answers on the questionnaires returned from the accounting instructors. The number of responses were simply recorded from individual answers, and these responses were assigned percentages based on the total responses made to that question. For example:

	<u>Yes</u>	<u>%</u>	<u>No</u>	<u>%</u>
1. Are lectures more effective than discussion groups for presenting subject matter?	8	67	4	33

Conclusions were drawn from the various responses to the instrument, and recommendations made. A recapitulation of the answers to the questionnaire was prepared and returned to the various business division chairmen at the respective community colleges.

A breakdown of the numbers and percentages of students enrolling in, withdrawing from, and completing each term, as well as the total sequence itself was also prepared. No attempt was made to use any advanced test of statistical measurement. The nature of the descriptive study did not lend itself to those tests that might have

been acceptable in a purely scientific study of the problem.

Subsequent comparisons were made noting the personal characteristics common to the students outlined in the preceding paragraph. These characteristics were age, sex, marital status, high school graduate or GED certificant, major, class standing, veteran, and full- or part-time student.

Two final analyses included (1) a study of the percentages of students who (a) completed the first term, but failed to enroll in the second term, and (b) those who completed the second term, but who failed to enroll in the third term, thereby illustrating that student attrition exists not only at some time during the term, but also between terms, and (2) an analysis of the students who (a) were required to complete three terms of accounting, but who did not, and (b) those who were required to complete only one or fewer terms of accounting, but who completed the three-term sequence.

The Linn-Benton Community College Study

The primary purpose of the study at Linn-Benton Community College was to study the effect of personalized attention on the success of the students enrolled in the first year of accounting course Principles of Accounting. The students included in the study were those who had enrolled in the course in the fall term of both 1970-1971 and 1971-1972. Those enrolled during these two years were

divided into four groups. The day and evening students in the prior year, 1970-1971, were considered to be the control groups, while the day and evening students in the latter year, 1971-1972, were considered to be the experimental groups.

The specific intent of the study was to measure the effects of personalized attention between (1) the daytime classes of the control year to the daytime classes of the experimental year, and (2) the evening classes of the control year to the evening classes of the experimental year.

The students in the control groups were taught by the traditional manner of instruction, including lecture, demonstration and discussion. Homework assigned was usually short problems. The students also had access to the instructor during his regular office hours, and at all other times most convenient for all parties concerned. No other special effort was made to provide students with personal attention other than normally expected.

The students in the experimental groups were also presented the material by the traditional manner of instruction, along with homework consisting of short problems, and benefited from the same office hour privileges extended to the control groups. Two variables, however, were added to supplement the experimental groups' learning and growth opportunities. These variables included individual counseling and voluntary "help" sessions.

The Variables of Personalized Attention

Individual Counseling. At the beginning of each term, fall (BA 211), winter (BA 212), and spring (BA 213), each student was asked to complete a student opinionnaire (See Appendix) regarding such questions and opinions as his age, sex, marital status, reaction to the course, reaction to the instructor, problems he was having learning the subject, and views of how he believed he could overcome his learning difficulties, if any. The opinionnaire was returned to the instructor, who made an appointment for the student to visit with him and get better acquainted. The answers to the opinionnaire were then used as the basis for conducting the subsequent individual counseling sessions. These sessions were mandatory for all students and took place at the beginning of each of the three terms described.

The counseling session for each student was scheduled for at least fifteen minutes. During each session no effort was made to hurry through the visit since it was believed this would detract from any benefits to be gained from the experience.

The counseling approach was used for all daytime classes in the experimental group. It was not followed, however, for the evening classes in the experimental group. Since most of the evening students worked fulltime in the day, it was decided they would not be receptive to or available for the individual counseling sessions, even

if made available. Another factor contributing to this decision was that the evening class only met once per week for three hours from 7:00 to 10:00. The evening class was asked, however, to complete the student opinionnaire. This reduced opportunity to receive a form of personalized attention was deemed better than not receiving any personalized attention at all. It was recognized, though, that the personal contact of the individual counseling could have provided an even greater opportunity to enhance the channels of communication between the student and the instructor.

Voluntary "help" Sessions. The second variable of personalized attention used with the experimental group was to make available to them voluntary "help" sessions. These sessions were open to all students needing additional help with their accounting homework or accounting theory. Students were advised, but not required, to attend the sessions if they had received a low grade on their last examination, had received a deficiency notice during the present quarter, or were experiencing difficulty with their present assignments, regardless of their present grade standing in the class. The student who attended the session could come at any time and could leave at any time. These sessions were scheduled for one hour per day, five days per week for the fall, winter, and spring terms of the 1971-1972 college year. Because of the existing class schedules for regular

classes the voluntary "help" sessions were arranged to accommodate both the instructor and the students. The noon hour was chosen as the time designated for the fall term. In the winter term the hour was assigned to Monday, Wednesday, and Friday at 2:00 p.m. and Tuesday and Thursday at 11:00 a.m. During the spring term the "help" sessions were scheduled everyday at 2:00 p.m.

The attendance at the "help" sessions was never more than a total of five students throughout the term for any one term. This was completely unexplainable, since the students were advised frequently by the instructors throughout the three-term sequence that the sessions were available. Posters were also placed in strategic places about the campus to act as constant reminders of this "free" service. Students were also informed the sessions were constantly manned at all times by a fully-qualified instructor, although not by the one conducting the regular classes.

Although the evening students in the experimental group were also advised of the voluntary "help" sessions, it was assumed they would not be able to take advantage of them since many of the students were not on campus during the day. Because the class only met once per week it was decided the evening students would not be likely to take advantage of the "help" sessions. Consequently, voluntary "help" sessions were not made available during the evening hours. If the evening students were to take advantage of the sessions provided,

they would have to plan to come to the day "help" sessions.

Statistical Tests Used to Measure the Data

American Institute of Certified Public Accountants (AICPA)

Orientation Test, Form B, Revised. To ensure that the ability levels of all students included in the control and experimental groups were statistically similar the AICPA Orientation Test, Form B, Revised was given at the beginning of the fall term in each of the test years. This test measured the verbal and quantitative backgrounds of the students as they related to accounting aptitude. The t-test was used to detect any significant differences between the entry level abilities of the day classes and evening classes of the control and experimental groups.

American Institute of Certified Public Accountants (AICPA)

Achievement Test, Level I, Form E-S. The Achievement Test was given to the four groups at the end of the spring term of each respective year in order to measure any significant differences in the degree of subject matter learned under the controlled and experimental approaches used. The t-test was used to measure any significant differences of the mean scores between the achievement of the day classes and evening classes of the control and experimental groups.

Comparison of Proportions. One measure of success of the study was to determine if more students would complete the three-term sequence of accounting in 1971-1972 than 1970-1971. To measure the results simple percentages of completion were determined, and these figures were then used to examine the probability that any significant differences were statistically significant at the 95 percent level of confidence. The comparison of proportions test was used to determine this probability.

Correlation. To detect the correlation that might exist between the scores received on the AICPA Orientation Test and the AICPA Achievement Test each class of each year was examined individually. Specifically, the day classes of the control year were studied, then the evening classes of the control year. This procedure was followed for the experimental year. The purpose of this analysis was to determine the future value of using the Orientation Test as a tool to help predict those students who would be successful or unsuccessful in the Principles of Accounting course.

Z Test for Measuring the Equality of Correlation. A final test of the data measured the equality of the correlation computed for the day classes of the control year to those of the experimental year, and computed for the evening classes of the control year to those of the experimental year. The purpose of the test was to ensure that the

correlations of both years were true, i. e., did the correlations measure the same significant relationships of the Orientation Test to the Achievement Test.

Hypotheses Examined

The following hypotheses were established in order to measure quantitatively the data obtained during the study:

1. The AICPA Orientation Test, Form B, Revised scores for the day classes of 1970-1971 will not be significantly different from those for the day classes of 1971-1972.
2. The AICPA Orientation Test, Form B, Revised scores for the evening classes of 1970-1971 will not be significantly different from those for the evening classes of 1971-1972.
3. The AICPA Achievement Test, Level I, Form E-S scores for the day classes of 1970-1971 will not be significantly different from those for the day classes of 1971-1972.
4. The AICPA Achievement Test, Level I, Form E-S scores for the evening classes of 1970-1971 will not be significantly different from those for the evening classes of 1971-1972.
5. There will be no significant difference between the proportion of daytime students in 1970-1971 completing the accounting sequence than the daytime students in 1971-1972.
6. There will be no significant difference between the

proportion of evening students in 1970-1971 completing the accounting sequence than the evening students in 1971-1972.

7. There will be a marked and substantial relationship between the scores the students in all classes received on the AICPA Orientation Test and those they received on the AICPA Achievement Test.
8. There will be no significant difference of the correlation values between the day classes of 1970-1971 and those of 1971-1972.
9. There will be no significant difference of the correlation values between the evening classes of 1970-1971 and those of 1971-1972.

IV. ANALYSIS AND PRESENTATION OF THE FINDINGS: Statewide Study

The first part of this chapter reviews the responses to the questionnaire sent to each of the community colleges in the study. The second part reviews the data received from the registrars.

Questionnaire Responses

The answers to the following questions provided background information about the philosophies of the accounting instructors at the community colleges in the state:

1. What does the accounting instructor know about the student?
2. What does the accounting instructor know about his basic responsibilities to the student?
3. What procedures does the instructor establish to provide an environment that will encourage ease of learning of the subject matter?
4. What methods of instruction are used by the instructor to promote ease of learning and total comprehension?
5. What provisions have been provided by the instructor and/or administration to personalize instruction?
6. What is the accounting instructor's reaction to personalizing instruction?

At the end of the fall term, 1971, the investigator, who is also an accounting instructor at Linn-Benton Community College, sent a questionnaire to all accounting instructors at the community colleges in Oregon identified as the population for this study. The twelve accounting instructors who responded represented the eleven community colleges in Oregon offering the three-term transfer accounting sequence (BA 211, 212, 213) for more than two years. (Two of the instructors represented one large metropolitan college.) The statistics in TABLE I indicate the total responses to that question along with the percent represented by that response.

Three, perhaps four, observations can be made from the responses to the foregoing question. Answers to numbers three, five, and six clearly indicate that most accounting instructors do not know enough about (a) the reading and comprehension level of the student, (b) how the student views himself as a scholar, and (c) the student's level of interest in accounting when he begins the accounting curriculum. The responses to number two indicate that at least fifty percent of the instructors do not know the mathematical background of the student.

Instructor responses noted in TABLE II strongly indicated their individual and collective agreement with these items. Specifically, they indicated consensus about the need to inform the students of the value of accounting at the beginning of the three-term sequence.

TABLE I

What Does the Accounting Instructor Know About the Students?

Level of Awareness	Strongly Agree		Agree		Dis-agree		Strongly Disagree	
	"f"	%	"f"	%	"f"	%	"f"	%
1. I usually know the reasons why the student enrolls in the accounting sequence.	2	17	8	66	2	17	-	-
2. I usually know the mathematical background of the student.	-	-	6	50	5	42	1	8
3. I usually know the reading and comprehension level of the student.	-	-	2	17	9	75	1	8
4. I usually know the book-keeping background of the student.	3	25	9	75	-	-	-	-
5. I usually know how the student views himself as a scholar.	1	8	2	17	9	75	-	-
6. I usually know the student's level of interest in accounting when he enrolls.	1	8	3	25	8	67	-	-

TABLE II

What Are the Responsibilities of the Accounting Instructor?

Educational Philosophy	Strongly Agree		Agree		Dis-agree		Strongly Disagree	
	"f"	%	"f"	%	"f"	%	"f"	%
7. I believe the instructor should carefully inform the students of the value of beginning accounting in the first week of the sequence.	8	67	4	33	-	-	-	-
8. I believe the instructor who wants his students to succeed should help to build their self-confidence early in the course.	8	67	4	33	-	-	-	-
9. I believe the instructor might be faced first with building his own self-confidence before being able to solve student problems.	3	25	5	41	2	17	2	17
10. I believe that all home-work assigned should be gone over in class by the instructor.	3	25	5	41	3	25	1	9
11. I believe the student should have the best text available on the market if he is to gain the most benefits from the course.	4	33	5	41	2	17	1	9
12. I usually make an effort to use all of the above information to improve my instruction.	4	36	6	55	1	9	-	-

They also indicated their awareness of the need for quickly building the self-confidence of the students. Oddly enough, four of the twelve respondents did not agree that the instructor should have developed his own self-confidence clearly before attempting to help the students.

Responses to question 10 indicate a tendency to see classtime review of homework as necessary. Four respondents, however, did not agree. It is presumed, therefore, that these parties felt the instructor should grade the work outside of class, thus saving class-time to explore new areas of theory.

Although nine of the respondents agreed "that students should have the best text available on the market," three did not agree. Presumably these instructors believed they could clarify any weakness of the text.

Only one respondent indicated he did not use the answers to the various questions to improve his instruction. The large majority stated they did make the effort to integrate the facts learned about the student and their responsibilities as accounting instructors to improve their instruction.

A review of TABLE III indicates that all twelve respondents' colleges allowed students to enroll in the three-term accounting sequence even though they were not sophomores. Consequently, this traditionally sophomore-level course (as suggested by the Oregon Board of Higher Education) becomes, in essence, a freshman-level

TABLE III

Classroom Mechanics to Improve the Learning Environment

Educational Practice and Philosophy	Yes	%	No	%
13. At my college only sophomore students may take the college transfer accounting sequence (BA 211, 212, 213).	-	-	12	100
14. I believe students in first-year accounting should be grouped according to the following plan. (Three colleges answered more than once.)				
a. High school gpa	1	7	-	-
b. College gpa	1	7	-	-
c. Aptitude testing	2	13	-	-
d. Opposed to grouping of any type	6	40	1	7
e. Other				
1. Major vs. non-major	1	7	-	-
2. Prior bookkeeping course work	1	7	-	-
3. Grouping is not feasible in community college	-	-	1	7
4. Not sure of the value of grouping	-	-	1	7
15. I believe the average class size should be 25 students or less.	11	92	1	8
	Three times/ week, 50 min/ meeting		Four times/ week, 50 min/ meeting	
		%		%
16. I believe the typical first-year accounting class should meet _____ times per week, _____ minutes per meeting.	8	67	4	33

course at the community college.

Instructor reaction to grouping showed mixed reaction. Although six of the 15 responses, 40%, were opposed to grouping of any type, seven of the respondents, 47%, felt otherwise. (Three of the instructors gave more than one response.) This opinion seems to indicate an awareness on the part of the instructors that grouping of some sort might be advisable.

Other ninety percent of the respondents agreed that the class size should be small. A review of the records from the registrars of the various community colleges, however, indicates that many schools, both small and large, often have over fifty students in a class.

In TABLE IV the responses to question 17 dealing with the methods of instruction were categorized into four groups. Examination of these categories, however, indicates very little difference in approach since any one of the four methods of instruction is probably very similar to the others. The most significant observation noted was the lack of individualized or programmed instruction. Apparently all instructors still conduct the course in the traditional manner of instruction, i.e., the instructor in front of the group leading, directing and controlling the student's pace of learning.

Responses to question 18 indicate that the large majority of the instructors use the chalkboard regularly, thereby stimulating the

TABLE IV

Methods of Instruction Used to Improve Learning

Educational Practice		Responses		%
<hr/>				
17.	The most frequently used instructional method in my classroom is			
a.	Lecture/questions	1		8
b.	Lecture/problem solving/discussion	3		25
c.	Discussion	3		25
d.	Lecture/discussion	5		42
		<u>Yes</u>	<u>%</u>	<u>No</u> <u>%</u>
18.	I use the chalkboard frequently in classroom discussion.	11	92	1 8
19.	I use the overhead projector frequently in classroom discussion.	6	50	6 50
20.	I use television monitors frequently in classroom presentations.	-	-	12 100
21.	In addition to class periods, I require regular laboratory sessions.	4	33	8 67
22.	I usually have a programmed text as the required text.	-	-	12 100
23.	I usually have students do a research project on some phase of accounting at least once during the three-quarter sequence.	6	50	6 50

student's visual senses. These senses are further stimulated by at least fifty percent of the instructors utilizing the overhead projector frequently. Those instructors not indicating a frequency of use of

this media tended to use the chalkboard more extensively.

The responses to question 20 indicate that none of the community colleges used a television monitor or video taping. Presumably the initial cost of this type equipment limits the use of this technique.

In reviewing the responses to the question on required regular laboratory sessions, four, or one-third of the instructors required them. However, a closer examination of the data reveals that only one of the four responses related to the college transfer accounting sequence. The other three yes responses related to the terminal or non-transfer students. The remaining eight respondents (two-thirds of the total respondents) did not require laboratories of any type.

None of the respondents indicated that they used a programmed text.

Responses to the question on research projects being assigned at some time during the three-term sequence indicates an even distribution of instructors favoring outside research of some type. Three of those favoring it recommended the third term as the time when it should be assigned. To what extent these instructors required an in-depth study of the topic researched is not known. What is noteworthy, however, is that they were involving their students with materials other than their textbook.

Instructor responses to question 24 (TABLE V) indicate that over 90 percent were presently using individual counseling and

TABLE V
History of Personalized Attention

Types of Personalized Attention	Have Used		Currently Used		Intend to Use		Don't Intend to Use	
	"f"	%	"f"	%	"f"	%	"f"	%
24. Which of the types of personalized attention listed above have you used in the past but are not using now, are presently using, intend to use at some time in the future, or do not intend to use at any time in the foreseeable future?								
a. Individual counseling	1	8	11	92	-	-	-	-
b. Group counseling	-	-	6	50	1	8	5	42
c. One-to-one "help" sessions	1	8	11	92	-	-	-	-
d. Group "help" sessions	-	-	11	92	1	8	-	-
e. Programmed texts	1	8	2	15	3	23	7	54
f. Workbook with answers	2	15	5	37	-	-	6	48
g. Practice set with key	-	-	4	33	-	-	8	67
h. Programmed filmstrips	-	-	-	-	3	25	9	75
i. Non-programmed filmstrips	-	-	-	-	2	17	10	83
j. Audio tapes	-	-	-	-	5	42	7	58
k. Video tapes	-	-	-	-	3	25	9	75
l. Overhead projector	1	8	10	84	-	-	1	8
m. Computer problems	2	15	3	23	7	54	1	8
n. Case studies	2	15	4	30	5	40	2	15
o. Seminars	1	8	6	50	2	17	3	25
p. Instructor in library	-	-	1	11	2	22	6	67
q. Office hours (4-10 hours)	-	-	12	100	-	-	-	-
r. Other	2	22	7	77	-	-	-	-
1. Informal discussion			(1)	(11)				
2. Convenient instr. avail.			(1)	(11)				
3. Voluntary laboratory			(1)	(11)				
4. Handouts			(1)	(11)				
5. Open-end, open-exit	(1)	(11)						
6. Student assistant	(1)	(11)	(1)	(11)				
7. Guest speaker			(1)	(11)				
8. Mandatory laboratory			(1)	(11)				

one-to-one and group "help" sessions. In addition, 100 percent were providing office hours at least four hours per week. In at least 50 percent of the cases group counseling was also provided as the circumstances dictated. To reinforce the visual approach to better understanding the subject matter, 84 percent of the instructors were using the overhead projector.

Other methods used which suggest instructor sensitivity to personalizing attention are noted by the fact that 50 percent of the respondents indicated they were currently using accounting seminars, while 30 percent indicated they were using case studies. In addition, 77 percent of the faculties responding indicated they used methods of personalized attention common to their particular college's circumstances; namely, informal discussions, convenient times for students to visit with the instructors, voluntary laboratories, subject-matter handouts, student assistants, guest speakers, and mandatory laboratories. These figures indicate a strong desire on the instructors' parts to avail themselves of the needs and time schedules of the students.

Although the instructor responses indicate that personalized attention has been provided to a large degree, there are still other means of providing it that have not been considered. Inspection of the types of personalized attention that instructors do not intend to use indicates the inclusion of some that might prove to be beneficial

to many students. Specifically, over 50 percent of all instructors indicated they did not intend to use at any time in the future such methods as programmed texts, workbooks with answers, practice sets with keys, programmed or non-programmed filmstrips, audio tapes or video tapes.⁶ In two instances, which included programmed filmstrips and video tapes, over 75 percent of the instructors indicated no intention to use these methods for providing personalized attention. In still another instance, over 83 percent of the instructors indicated no intent to use non-programmed filmstrips at any time in the future. A final observation disclosed that over two-thirds of the instructors would not consider using an instructor on duty in the library.

The responses illustrated in TABLE VI deal with those means of personalizing attention considered most effective by the accounting faculties. The type most often noted was individual meetings, whether by one-to-one "help" sessions or individual counseling. Since very few instructors had previously indicated an intent to use methods including programmed texts and films, and audio and video tapes, among others of this type, it was not surprising these methods

⁶ See pages 45-49 in the Review of the Literature for results of previous studies indicating that programmed texts (instruction) are at least as effective as traditional methods of instruction.

TABLE VI

Most Effective Means of Personalizing Attention

Educational Philosophy	Responses	%
25a. What methods do you believe are the most effective means of personalizing attention?		
a. One-to-one "help" sessions	5	42
b. Group "help" sessions	1	8
c. Individual counseling	2	18
d. Group counseling	1	8
e. Availability of instructor	1	8
f. Student assistants	1	8
g. Subject-matter handouts	1	8
25b. What methods do you believe are the second most effective means of personalizing attention?		
a. One-to-one "help" sessions	3	25
b. Group "help" sessions	2	18
c. Individual counseling	2	18
d. A good, solid text	1	8
e. Weekly quizzes	1	8
f. Advising	1	8
g. Not sure	1	8

were not included in the responses as providing effective means of personalizing attention.

A review of the least effective means of personalizing attention (See TABLE VII) indicates that the overhead projector was considered the least effective means of providing personalized attention. A detailed examination of these three respondents' individual questionnaire, however, indicates that two of these parties still use this media

TABLE VII

Least Effective Means of Personalizing Attention

Educational Philosophy	Responses	%
26a. What methods do you believe are the least effective means of personalizing attention?		
a. Overhead projector	3	25
b. Tapes of all types	2	17
c. Programmed filmstrips	1	8
d. Case studies	2	17
e. "Do-it-yourself" attitude	1	8
f. All personalized attention is effective	2	17
g. Not determinable	1	8
26b. What methods do you believe are the second least effective means of personalizing attention?		
a. All self-instructional materials	1	10
b. All personalized attention is effective	2	20
c. Computer problems	1	10
d. Programmed texts	1	10
e. Workbook with answers	2	20
f. Office hours	1	10
g. Open-end, open-exit enrollment	1	10
h. Not determinable	1	10

extensively. Of the two instructors who indicated that audio tapes were the least effective means of personalizing attention, one had never used this method. A similar observation was also made regarding the question on the second least effective means of providing personalized attention. Two respondents believed that workbooks with answers were very inefficient, yet one of the parties had never used this approach. One observation is certain from the foregoing

responses: there is a tendency on the part of some of the accounting instructors to judge the effectiveness and/or ineffectiveness of certain methods of personalizing attention before personally experimenting with specific techniques.

An examination of the responses in TABLE VIII indicates that definite, planned individual counseling seldom takes place in the community college with the accounting students. Informal and unscheduled individual counseling does appear to be the predominant manner of initiating this technique based on the needs or desires of the student and perhaps the faculty concerned.

TABLE VIII

Providing Individual Counseling

Educational Practice	Yes Responses	%	No Responses	%
27. If you provide individual counseling as defined in the introduction to this questionnaire, please indicate below.				
a. Beginning of the fall term only	3	25	9	75
b. Beginning of each term	2	17	10	83
c. End of fall term only	-	-	12	100
d. End of each term	3	25	9	75
e. At what other time?	10	100	-	-
1. As requested or needed	(9)	(90)		
2. During the term	(1)	(10)		

As illustrated in TABLE IX instructor reaction to personalized attention was quite favorable. This was especially true regarding its ability to increase student interest in the subject, its ability to help the student more easily learn the course objectives, and its tendency to help the instructors better understand the learning problems of the student. The instructors (83% of all respondents) also strongly maintained that the conventional method of instruction, plus personalized attention allowed more students to complete the three-term accounting sequence. Their reasons to support this view were "Personalized attention helps to center on the specific problem," "It allows greater freedom to ask questions," "It increases (student) interest," and "It allows greater feedback." The two instructors who disagreed that personalized attention had any additional effect said that "It depends on the instructor's ability to make the course worthwhile and interesting," and that "In the final analysis it all depends on the student's own motivation."

Seven (58%) of the instructors believed that they could do an even more effective job in the classroom by providing additional personalized attention. On the other hand, five (42%) of the instructors felt they would be no more successful by providing additional personalized attention. Seven of the ten respondents to question 33 expressed the view that instructors using various means of personalized attention tended to organize their materials more carefully, and therefore, probably helped the students to learn more easily and quickly. On the other hand, those opposing this viewpoint believed that personalized attention did not guarantee more careful organization. One instructor

TABLE IX

Teacher Reaction to Personalized Attention

Educational Philosophy	Strongly Agree		Agree		Disagree		Strongly Disagree	
	"f"	%	"f"	%	"f"	%	"f"	%
28. I believe that personalized attention increases student interest in accounting.	6	50	6	50	-	-	-	-
29. I believe that personalized attention helps the student learn the objectives of the course more quickly and easily.	5	42	7	58	-	-	-	-
30. I believe that by using personalized attention that I can better understand the problems students have when learning accounting.	5	42	7	58	-	-	-	-
31. I believe that I can help more students complete the three-term sequence of transfer accounting by providing additional personalized attention.	5	42	2	16	5	42	-	-
32. I believe that just as many students will complete the college transfer accounting sequence who have been instructed solely by the conventional methods of instruction (lecture, chalkboard, and general discussion),								

TABLE IX (continued)

Educational Philosophy	Strongly Agree		Agree		Dis-agree		Strongly Disagree	
	"f"	%	"f"	%	"f"	%	"f"	%
as those students who have been instructed by the conventional method PLUS various types of personalized attention.	-	-	2	17	7	58	3	25
33. I believe the instructor who provides personalized attention tends to more carefully organize his material, and therefore, probably helps the student to more quickly and easily learn the subject matter.	1	10	6	60	2	20	1	10

also expressed the view that the time used to organize the personalized material may detract from the quality of the regular lectures.

As expected (See TABLE X), most instructors encouraged evaluation of their instruction and made definite efforts to improve their presentations by utilizing the comments made by the students. Only one instructor indicated otherwise. This individual added, however, that he intended to encourage student evaluations at a later date.

Registrar Responses

The following reviews the enrollment and completion figures for all students enrolled in the college transfer accounting sequence

TABLE X

Teacher Reaction to Personalized Attention
(Concluded)

Educational Practice	Yes		No	
	Responses	%	Responses	%
34. I encourage the students to evaluate my instruction.	11	92	1	8
35. If you answered yes to number 34, would you please indicate whether or not you use these evaluations to improve future instruction.	11	100	-	-
36. If you answered no to number 34, would you please indicate whether or not you intend to encourage student evaluation in the near future.	1	100	-	-

in the eleven community colleges in Oregon. Subsequent reviews examined these same figures by geographical area within the state and personal characteristics of the students enrolled, including age, sex, marital status, high school graduate or GED certificate, major, class, full- or part-time student, and veteran status. In addition, the review includes the percentages of students completing one term of accounting and enrolling in the next one in the sequence, as well as the percentages of students who completed each term, but who did not enroll in the subsequent term. Finally a comprehensive review was made of the students, by major, who were required to take all three

terms of the accounting sequence but who did not, and those students, also by major, who were not required to complete the sequence, yet who did.

Overall Analysis. The overall statistics for the eleven community colleges in Oregon during the two-year period studied are illustrated in TABLE XI.

TABLE XI

Overall Analysis of Student Enrollment and
Completion of Principles of Accounting
(1970-1972)

Enrollment and Completion	BA 211	BA 212	BA 213	Three-term Sequence
Enrolled	1737	988	609	1737
Completed	1228	735	495	495
Percent of completion	70.69	74.39	81.28	28.49

The above figures show that of the 1737 students who enrolled in BA 211 during the two-year period, only 1228, or 70.69% completed the first term. Of the 1228 students completing the first term, only 988 of these students enrolled in the second term, BA 212. (In the vast majority of the cases most of the 988 students were those who had just completed the preceding term, although a very small minority of the 988 included new students who had taken the first term at some time in the past.) Of this figure, 988, only 735

students, or 74.39%, had completed the second term. Of the 735 students completing BA 212, only 609 of these students enrolled in the third term, BA 213, and of this group only 495 students, or 81.28%, completed the third term. The final column "Three-term Sequence" indicates the number of students who first enrolled in BA 211, 1737 students, and of this number how many of them had completed BA 213, and thereby had completed the three-term sequence. In this instance there were 495 students who had done so. This figure represented 28.49% of the original group, 1737, who had first enrolled in BA 211 in the fall term of the respective years. The data in TABLE XII shows these same statistics on an annual basis and should be interpreted in the same manner.

TABLE XII

Overall Analysis of Student Enrollment and Completion
of Principles of Accounting
Yearly Analysis

Enrollment and Completion	BA 211	BA 212	BA 213	Three-term Sequence
(1970-1971)				
Enrolled	835	448	276	835
Completed	608	356	239	239
Percent of completion	72.81	79.46	86.59	28.62
(1971-1972)				
Enrolled	902	540	333	902
Completed	620	379	256	256
Percent of completion	68.73	70.18	76.87	28.38

A recapitulation of the foregoing percentages of completion is illustrated in TABLE XIII.

TABLE XIII
Recap of Analysis of Student Enrollment and
Completion of Principles of Accounting

Enrollment and Completion	BA 211	BA 212	BA 213	Three-term Sequence
Overall: 1970-1972	70.69	74.39	81.28	28.49
Yearly: 1970-1971	72.81	79.46	86.59	28.62
1971-1972	68.73	70.18	76.87	28.38

The foregoing figures indicate that on an overall, statewide basis 71.51% (100% minus 28.49%) of all students who had enrolled in BA 211 in the fall term of the respective years of the study had not completed the entire three-term sequence. The reasons for not completing the respective terms, as well as the three-term sequence, would have been quite difficult to measure objectively. These results do, however, clearly indicate that student attrition occurs at two definite times throughout the three-term sequence. The first occurs at some time during a specific term and then occurs again between the respective terms.

Geographical Analysis. Another practical study and comparison was made by conducting a geographical analysis of the data received

from the various community colleges. The colleges were divided into areas common to their location throughout the state. These areas were then compared to each other, and then compared to the combined state figures for 1970-1972.

The colleges were classified as Groups I, II, III, and IV. The following breakdown indicates the community college and its location within each group.

Group I--Eastern Oregon (rural, agricultural environment)

Blue Mountain--Pendleton
Treasure Valley--Ontario
Central Oregon--Bend

Group II--Metropolitan Portland (urban, industrial environment)

Mt. Hood--Gresham
Portland--Portland
Clackamas--Oregon City

Group III--Willamette Valley (urban, semi-rural, industrial-agricultural environment)

Lane--Eugene
Linn-Benton--Albany
Umpqua--Roseburg

Group IV--Coast (semi-urban, commercial fishing, shipping environment)

Southwestern Oregon--Coos Bay-North Bend
Clatsop--Astoria

The figures for these geographical areas are shown in TABLE XIV.

The figures shown in TABLE XV provide a much broader comparison of the success of accounting students in Oregon community

TABLE XIV
Geographical Analysis
(1970-1972)

Enrollment and Completion	BA 211	BA 212	BA 213	Three-term Sequence
<u>Group I</u>				
Enrolled	259	152	111	259
Completed	192	126	96	96
Percent of completion	74.13	82.89	86.48	37.06
<u>Group II</u>				
Enrolled	607	298	173	607
Completed	381	225	141	141
Percent of completion	62.76	75.50	81.50	23.22
<u>Group III</u>				
Enrolled	691	427	255	691
Completed	521	311	204	204
Percent of completion	75.39	72.83	80.00	29.52
<u>Group IV</u>				
Enrolled	180	111	70	180
Completed	134	73	54	54
Percent of completion	74.44	65.76	77.14	30.00

TABLE XV
Combined Recap Analysis of State and Geographic Areas
(1970-1972)
(By Percentage)

Area Analysis	BA 211	BA 212	BA 213	Three-term Sequence
State	70.69	74.39	81.28	28.49
Group I	74.13	82.89	86.48	37.06
Group II	62.76	75.50	81.50	23.22
Group III	75.39	72.83	80.00	29.52
Group IV	74.44	65.76	77.14	30.00

colleges by comparing the 1970-1972 statewide overall percentages with those for the geographical areas for this same period.

Examination of the figures in TABLE XIV indicates that in Group I--Eastern Oregon--a considerably higher percentage of students completed the three-term sequence of accounting than any of the other groups. In this area there was also a higher percentage of completion when compared with the state average. Another interesting statistic shows that the percentage of completion figure for Group II--Metropolitan Portland--was considerably lower than the state average. Although any conclusions would obviously be pure conjecture, it is interesting to note that two of the schools in Group I had definite prerequisites for students enrolling in the accounting sequence, whereas none of the other schools throughout the state had established any restrictions. One of the two colleges allowed only sophomore college-transfer business students to enroll. It had a completion rate of 35.71% for the two-year period, 1970-1972. The other school allowed only those students to enroll in the sequence who had at least one year of either high school or college bookkeeping and/or sufficient business experience. Its completion rate was even more remarkable with a 49.42%.

The prerequisites established by these schools may not be the cause for the success of its students, but the statistics do lend support in this direction.

Another review examined the figures for the three community colleges in Group II--Metropolitan Portland. (Specific community colleges within each group were not divulged as per agreement with the administration of each college to ensure anonymity.) Two of the three large schools had only an 18% rate of completion, and although one of these two schools declined to provide the enrollment and completion figures for all its sections because of the secretarial time involved, it did provide a random selection of the data requested for two of its some 12 sections. Upon this basis the investigator accepted these sample figures as characteristic of the normal pattern of enrollment and completion for this particular community college. The low percent of completion does suggest a negative correlation between the size of the school and its students' chances of completing the sequence. In any event the extremely low completion figures for this group (II) were below the state average, and definitely below the average for Group I.

Personal Characteristics Analysis. The following analysis outlines the results of success rates by the following characteristics: sex, age, marital status, high school graduate/GED certificate, veteran/nonveteran, class, full-time/part-time student, and major.

Sex. TABLE XVI provides a basis for an overall analysis by sex for 1970-1972. The figures indicate that males were considerably

TABLE XVI
Overall Analysis by Sex
(1970-1972)

Enrollment and Completion	BA 211	BA 212	BA 213	Three-term Sequence
MALE				
Enrolled	1256	696	450	1256
Completed	854	537	366	366
Percent of completion	67.99	77.15	81.33	29.14
FEMALE				
Enrolled	481	292	159	481
Completed	374	198	129	129
Percent of completion	77.75	67.80	81.13	26.81

less successful at completing the first term of accounting (67.99%) than the women (77.75%), but that they had been more successful at completing the three-term sequence (29.14%) than the women (26.81%).

Age. TABLE XVII illustrates the success rates of the students when broken down into five age groupings. The categories were chosen on the assumption that each would provide unique information. The results indicate that although more students (187) ages 19-21 had completed the sequence than the other categories, that on a percentage basis (25.86%) they were less successful than any of the other groups. This group was also lower than the overall average rate of 28.49%. Students age 31 and over, however, were considerably more

successful (35.38%) than all other categories, as well as the overall state average.

TABLE XVII
Overall Analysis by Age
(1970-1972)

Enrollment and Completion	BA 211	BA 212	BA 213	Three-term Sequence
<u>18 and Under</u>				
Enrolled	242	140	90	242
Completed	181	103	70	70
Percent of completion	74.79	73.57	77.77	28.92
<u>19-21</u>				
Enrolled	723	380	226	723
Completed	482	270	187	187
Percent of completion	66.66	71.05	82.74	25.86
<u>22-25</u>				
Enrolled	416	244	157	416
Completed	294	189	124	124
Percent of completion	70.67	77.45	78.98	29.80
<u>26-30</u>				
Enrolled	161	92	53	161
Completed	114	69	45	45
Percent of completion	70.80	75.00	84.90	27.95
<u>31 and Over</u>				
Enrolled	195	132	83	195
Completed	157	104	69	69
Percent of completion	80.51	78.78	83.13	35.38

Marital Status. This characteristic is examined in TABLE XVIII. Each category was selected in the hope that a definite pattern would be detected for students most likely to successfully complete

the total sequence. The Other category included those students who were divorced, separated, or widowed. It was possible, however, that not all students who had once been divorced indicated this; they may have indicated they were single for various reasons. An examination of the data indicates the married students were more successful (32.78%) than either the single (26.65%) or other (23.33%) categories.

TABLE XVIII
Overall Analysis by Marital Status
(1970-1972)

Enrollment and Completion	BA 211	BA 212	BA 213	Three-term Sequence
SINGLE				
Enrolled	1163	640	392	1163
Completed	800	465	310	310
Percent of completion	68.78	72.65	79.08	26.65
MARRIED				
Enrolled	543	330	208	543
Completed	408	259	178	178
Percent of completion	75.13	78.48	85.57	32.78
OTHER				
Enrolled	30	17	9	30
Completed	20	10	7	7
Percent of completion	66.66	58.82	77.77	23.33

High School Graduates vs. GED Certificates. TABLE XIX

illustrates that high school graduates were approximately as successful completing the sequence as all students combined (29.17% to

28.49%). Students earning a General Education Development (GED) Certificate, however, had a completion rate (20.40%) considerably lower than the overall state average. The other category, which included all other special students, including those not graduating from high school and those still in high school or on special programs, was far below the overall average with a percentage of 16.66% to 28.49%. Although the sample size of this group was indeed small, 36 students, it does suggest that students not earning at least the equivalent of a high school education before enrolling in the accounting

TABLE XVIX

Overall Analysis by Pre-College Graduation
(1970-1972)

Enrollment and Completion	BA 211	BA 212	BA 213	Three-term Sequence
HIGH SCHOOL GRADUATES				
Enrolled	1652	953	586	1652
Completed	1180	706	482	482
Percent of completion	71.42	74.08	82.25	29.17
GED CERTIFICATE				
Enrolled	49	26	19	49
Completed	34	21	10	10
Percent of completion	69.38	80.76	52.63	20.40
OTHER				
Enrolled	36	9	4	36
Completed	14	8	3	6
Percent of completion	38.88	88.88	75.00	16.66

sequence may experience difficulty with the course work, and thereby, be less likely to complete the sequence than those students who do have this equivalency.

Military Service. The figures in TABLE XX indicate that veterans were more successful (35.15%) than non-veterans (26.60%). The veteran group included only two female veterans. The non-veteran group, therefore, included all other male and female students. Since the females experienced a less successful completion rate than the male students, according to TABLE XVI, it would appear that the non-veteran group had the lower completion rate (26.60%) as a result of this factor, plus the fact that males in general were more

TABLE XX

Overall Analysis by Military Service
(1970-1972)

Enrollment and Completion	BA 211	BA 212	BA 213	Three-term Sequence
NON-VETERAN				
Enrolled	1353	740	441	1353
Completion	950	532	360	360
Percent of completion	70.21	71.89	81.63	26.60
VETERAN				
Enrolled	384	248	168	384
Completion	278	203	135	135
Percent of completion	72.39	81.85	80.35	35.15

successful at completing the sequence. Three hundred eighty-two males were no longer in the non-veteran category, since they were classified as veterans.

Class. A minority of the reports from the registrars of the various colleges did not include information about the class of the student when he enrolled in the accounting sequence. The total responses were large enough, however, to give ample insight regarding the success of these students. An examination of TABLE XXI indicates that the freshmen had a 26.14% rate of success compared to a 34.63% rate of success for the sophomores.

TABLE XXI
Overall Analysis by Class
(1970-1972)

Enrollment and Completion	BA 211	BA 212	BA 213	Three-term Sequence
FRESHMEN				
Enrolled	807	404	252	807
Completed	530	310	211	211
Percent of completion	65.67	76.73	83.73	26.14
SOPHOMORE				
Enrolled	511	306	210	511
Completed	380	251	177	177
Percent of completion	74.36	82.02	84.28	34.63

Full-time/Part-time Status. As with the Class category, the number of responses from the registrars of the various colleges was slightly limited; however, the total responses were still large enough to indicate the trend of success for full-time and part-time students. The figures in TABLE XXII indicate that although more full-time students completed the three-term sequence (218 vs. 38), the part-time students had a more favorable percentage of completion (35.15% vs. 26.60%).

TABLE XXII

Overall Analysis by Full-time/Part-time Students
(1970-1972)

Enrollment and Completion	BA 211	BA 212	BA 213	Three-term Sequence
FULL-TIME				
Enrolled	729	447	271	729
Completed	549	334	218	218
Percent of Completion	75.31	71.89	81.63	26.60
PART-TIME				
Enrolled	173	88	46	173
Completed	106	65	38	38
Percent of completion	72.39	81.85	80.35	35.15

Major. Because of the vast number of majors outlined and offered by the eleven community colleges included in the study, it was not believed practical to list each individually. To provide for all mentioned, however, they were classified into eight categories. The

rates of success for each of these categories are included in TABLE XXIII. (See the APPENDIX for a complete list of all majors and how they were classified.)

TABLE XXIV provides some interesting figures to the study of majors by ranking the eight categories by the percent of their completion of the three-term sequence. This ranking clearly shows that those students who had declared themselves accounting majors definitely had the better percentage of completion. A surprising statistic, however, was found in the area of secretarial science majors. Of the eight groups, they were the lowest with an 18.03 percent rate of completion for the three-term sequence. Since this major is required to complete three terms of accounting to obtain their degree, it appears likely that many of these students changed their career objectives at some time during the time they were studying accounting. This is not to imply, however, that the course itself was the factor responsible for this high attrition because it is quite possible that many had gained sufficient job skills to accept employment and had done so.

Analysis of Student Attrition During and Between Terms

The data in TABLE XXV illustrates a comprehensive view of those points in time throughout the three-term sequence when student attrition occurred. As would be expected student attrition occurred at various times during the term. This observation is made clear by

TABLE XXIII
Overall Analysis by Major
(1970-1972)

Enrollment and Completion	BA 211	BA 212	BA 213	Three-term Sequence
BUSINESS				
<u>College Transfer</u>				
<u>Accounting:</u>				
Enrolled	131	86	63	131
Completed	103	73	49	49
Percent of completion	78.62	84.88	77.77	37.40
<u>Business Administration:</u>				
Enrolled	739	430	283	739
Completed	523	334	236	236
Percent of completion	70.77	77.67	83.39	31.94
<u>Secretarial Science:</u>				
Enrolled	61	37	15	16
Completed	47	20	11	11
Percent of completion	77.04	54.05	73.33	18.03
<u>Vocational</u>				
<u>Business:</u>				
Enrolled	81	39	21	81
Completed	50	23	15	15
Percent of completion	61.73	59.00	71.43	18.52
ALL OTHER MAJORS				
<u>College Transfer</u>				
Enrolled	323	179	104	323
Completed	222	127	85	85
Percent of completion	68.73	70.95	81.73	26.32
<u>Vocational (not including bus. or secretarial sci.)</u>				
Enrolled	31	14	10	31
Completed	19	10	9	9
Percent of completion	61.29	71.43	90.00	29.03
<u>Independents</u>				
<u>Data Processing:</u>				
Enrolled	119	76	50	119
Completed	95	59	37	37
Percent of completion	79.83	77.63	74.00	31.09
<u>Undeclared Majors:</u>				
Enrolled	252	127	63	252
Completed	168	89	53	53
Percent of completion	66.66	70.07	84.12	21.03

TABLE XXIV

Rank Order of Success Ratios by Majors
(1970-1972)

Major	Rank (%)
College Transfer--Accounting	37.40
College Transfer--Business Administration	31.94
Independents--Data Processing	31.09
All Other Majors--Vocational (other than business and secretarial science majors)	29.03
All Other Majors--College Transfer	26.32
Independents--Undeclared Majors	21.03
Vocational--Business	18.52
College Transfer--Secretarial Science	18.03

noting that (1) over 29% of the 1737 students enrolled in BA 211 did not complete the term, (2) over 25% of the 988 students enrolled in BA 212 did not complete it, and (3) that over 19% of the 609 students enrolled in BA 213 did not complete it. Somewhat less expected, although certainly recognized as usually taking place, however, was the fact that of the 1228 students completing BA 211 only 988 enrolled in BA 212. Some 240 students, or 19% of the students qualified to take the second term of accounting, did not take it for one reason or another. In addition, of the 735 students completing BA 212 only 609 enrolled in BA 213. Thus, some 126 students, or 17% of those students qualified to take the third term failed to do so.

TABLE XXV

Student Attrition During and Between Terms
(1970-1972)

Enrollment and Attrition		Percent	
<u>Student Attrition During Terms</u>			
Students enrolled in BA 211	1737		
Students completing BA 211	<u>1228</u>		
Student attrition during the term		509	29%
Students enrolled in BA 212	988		
Students completing BA 212	<u>735</u>		
Student attrition during the term		253	25%
Students enrolled in BA 213	609		
Students completing BA 213	<u>495</u>		
Student attrition during the term		114	19%
<u>Student Attrition Between Terms</u>			
Students completing BA 211	1228		
Students enrolling in BA 212	<u>988</u>		
Student attrition between BA 211 and BA 212		240	19%
Students completing BA 212	735		
Students enrolling in BA 213	<u>609</u>		
Student attrition between BA 212 and BA 213		126	17%

The data suggest a tendency to be able to hold more students in the sequence once they have enrolled in the second term of the course. This statement is made clearer by noting that student attrition is over 29% during the first term BA 211, but only a little over 25% during the second term BA 212. In addition student attrition is over 19% between

the first and second term, but reduces to 17% between the second and third term.

The first term of the accounting sequence, then, appears to be the most important time during the three-term sequence for the instructor to recognize his responsibility to encourage more students to enroll in and complete additional terms of the accounting sequence.

This observation logically leads to an examination of the number of students who were required to take three terms of accounting and who actually completed the sequence, as opposed to those students not required to take at least three terms, yet who did complete the sequence.

Completion Rates by Terms of Accounting Required

TABLES XXVI and XXVII indicate the categories of majors requiring three or less terms of accounting who completed the three-term sequence. The figures in TABLE XXVI indicate that students required to have at least three terms have a 31.71% completion rate of the sequence. The statistic is larger than the overall statewide completion rate of 28.49% and considerably larger than the 23.58% rate of completion for those students not required to have at least three terms of accounting (See TABLE XXVII.) Since in most cases these latter students are required to have no more than one term of accounting (or perhaps none at all), the 23.58% completion rate

TABLE XXVI

Completion Rates by Majors Requiring Three Terms of Accounting
(Forestry Majors Excluded)
(1970-1972)

Major	Three-term Sequence		Percent of Completed to Enrolled
	Enrolled	Completed	
BUSINESS--College Transfer			
Accounting	131	49	
Business Administration	739	236	
Secretarial Science	<u>61</u>	<u>11</u>	
Total	931	296	31.79
DATA PROCESSING			
Data Processing/Programming	<u>119</u>	<u>37</u>	
Total	119	37	31.09
BUSINESS AND DATA PROCESSING (Combined)			
Business--College Transfer	931	296	
Data Processing/Programming	<u>119</u>	<u>37</u>	
Total	<u>1050</u>	<u>333</u>	<u>31.71</u>

indicates a successful retention of these students. The alternative could likely have been an even smaller rate of completion.

Summary of the Findings of the Statewide Study

A review of the accounting instructors' responses to the questions included on the questionnaire sent to all community colleges in Oregon indicates that (a) accounting instructors do not have enough information about the accounting student's reading level, how he

TABLE XXVII

Completion Rates by Majors with No Sequence Requirements
(1970-1972)

Major	Three-term Sequence		Percent of Completed
	Enrolled	Completed	to Enrolled
<hr/>			
ALL OTHER MAJORS			
(Other than Business and			
Data Processing)			
College Transfer	323	85	
Vocational (Other than			
Business)	31	9	
Vocational (Business)	81	15	
Undeclared Majors	<u>252</u>	<u>53</u>	
Total	<u>687</u>	<u>162</u>	<u>23.58</u>

views himself as a scholar, and his level of interest in the subject;
 (b) accounting instructors generally agreed on the responsibilities
 that each has as an instructor; (c) accounting instructors who viewed
 the principles course as a freshman-level course at the community
 college level are divided regarding the advantages of grouping, and
 tend to favor class meetings of three times per week for fifty minutes
 per meeting; (d) accounting instructors still preferred lecture-oriented
 subject presentations, used the chalkboard and the overhead projector
 extensively, were equally divided regarding the value of research pro-
 jects in the course, and were similar by the fact that none used televi-
 sion monitors and/or programmed texts, while tending not to require

laboratory sessions; (e) accounting instructors relied heavily on the use of individual and group counseling and "help" sessions while seldom using practice sets with keys, filmstrips of any type, and tapes of any type; (f) accounting instructors seldom provided formally scheduled counseling sessions; (g) accounting instructors strongly believed that personalized attention fosters student interest and learning in accounting and also helps the instructor to more carefully organize his materials for the course; and (h) accounting instructors almost unanimously encouraged student evaluations of their instruction to help them improve their subsequent presentations.

A similar review of the responses from the offices of the registrars of the various community colleges indicates that the average percent of successful completion of the three-term sequence is 28.49%. On a geographical comparison the community colleges in rural eastern Oregon were more successful than the state average, while at the same time the colleges in the Portland metropolitan area were considerably below the state average. The coastal and mid-Willamette Valley community colleges had completion rates very similar to the overall state average.

An analysis of attrition by the personal characteristics of the students indicates that a larger percentage of the students completing the sequence tend to be (a) male, (b) age 31 or older, (c) married, (d) high school graduates, (e) veterans, (f) sophomores, (g) part-time

students, and (h) accounting majors. Students tending to be less successful are (a) female, (b) age 19-21, (c) divorced, separated, or widowed, (d) without either a high school diploma or GED certificate, (e) non-veterans, (f) freshmen, (g) full-time students, and (h) college transfer secretarial science majors.

A final analysis of the registrars' reports indicates that the students required to have at least three terms of accounting had a 31.71 percent rate of completion of the sequence compared to a 23.58 percent rate of completion for those required to have one term or fewer terms of accounting.

V. ANALYSIS AND PRESENTATION OF THE FINDINGS:
The Linn-Benton Community College Study

This chapter examines and measures the effects of personalized attention on the success of first-year accounting students at Linn-Benton Community College. In order to decide whether or not the nine hypotheses outlined in Chapter Three were valid, the following areas of interest were studied:

- (1) Differences on student scores received on the AICPA Orientation Test between the day classes of 1970-71 and 1971-1972.
- (2) Differences on student scores received on the AICPA Orientation Test between the evening classes of 1970-1971 and 1971-1972.
- (3) Differences on student scores received on the AICPA Achievement Test between the day classes of 1970-1971 and 1971-1972.
- (4) Differences on student scores received on the AICPA Achievement Test between the evening classes of 1970-1971 and 1971-1972.
- (5) Differences on student enrollment and completion figures between the day classes of 1970-1971 and 1971-1972.
- (6) Differences on student enrollment and completion figures between the evening classes of 1970-1971 and 1971-1972.

- (7) Correlation on student scores existing between the AICPA Orientation and Achievement Tests for all classes.
- (8) Results measuring the equality of correlation values existing between the day classes of 1970-1971 and 1971-1972.
- (9) Results measuring the equality of correlation values existing between the evening classes of 1970-1971 and 1971-1972.

Results of the AICPA Orientation Test, Revised, Form B

Day Classes, 1970-1971 vs. 1971-1972. At the end of the two-year period the complete test results for the AICPA Orientation Test, Form B, Revised were examined to decide whether or not the day classes of the control year (1970-1971) and the experimental year (1971-1972) had entered the study with the same basic aptitude for learning accounting. The test results were provided in three forms. First, the raw scores the student received on the quantitative section were provided. This was then followed by the raw scores the student received on the verbal portion of the test. The last form was a composite of these two raw scores. Only composite scores were examined for the purpose of this study. The data were examined by the procedures shown in TABLE XXVIII to arrive at a value for the "t" test that would measure any significant statistical differences at the 95% level of confidence.

The "t" value of .10 for the day classes of the two years

TABLE XXVIII

ORIENTATION TEST

Statistical Tests to Measure Significant Differences at the 95% Confidence Level for All Day Classes in 1970-1971 and 1971-1972

Explanation	1970-1971	1971-1972
Sample size	63	63
Sum of raw scores	3,705	3,677
Sum of raw scores squared	245,281	249,927
Mean of raw scores	58.8	58.4
Estimate of the population's standard deviation	21.02	23.87
Standard error of the mean	2.648	3.000
Standard error of the difference of the means of the scores	4.0015	
"t" value	.10	

strongly indicated no significant statistical differences between the mean scores of the two years on the AICPA Orientation Test, Form B, Revised. For a significant difference to have existed, the "t" value would have had to have been larger than ± 1.96 . The derived result insured that the basic accounting abilities of the day classes for these two years were statistically similar at the time they began the accounting sequence. Therefore, Hypothesis I was not rejected, because there was no significant difference between the accounting aptitude of the day classes enrolled in accounting in the control and experimental years.

Evening Classes, 1970-1971 vs. 1971-1972. The procedures used to evaluate the results of the evening classes for this period were identical to those for the day classes. These figures are shown in TABLE XXIX.

TABLE XXIX

ORIENTATION TEST

Statistical Tests to Measure Significant Differences at the 95% Confidence Level for All Evening Classes in 1970-1971 and 1971-1972

Explanation	1970-1971	1971-1972
Sample size	25	45
Sum of raw scores	1,590	2,987
Sum of raw scores squared	115,576	224,063
Mean of raw scores	63.60	66.37
Estimate of the population's standard deviation	24.52	24.21
Pooled standard deviation squared	591	
Standard error of the difference of the means of the scores	6.063	
"t" value	-.456	

The "t" value of $-.456$ fell well within the range for not rejecting Hypothesis II, which stated that there was no significant statistical differences between the mean scores of the evening classes for the two years on the AICPA Orientation Test, Form B, Revised. For the hypothesis to have been rejected the value would have had to have exceeded ± 1.96 .

In summary, then, prior to beginning the study of Principles of

Accounting there appeared to be no significant statistical differences in the accounting aptitude between the day classes of both years or the evening classes of both years. Any subsequent significant statistical differences on the AICPA Achievement Test, Level I, Form E-S, therefore, could probably be attributed to the effects of the personalized attention provided the students in the day and evening classes of the experimental year.

Results of the AICPA Achievement Test, Level I, Form E-S

Day Classes, 1970-1971 vs. 1971-1972. At the end of the two-year period, the completed test results of the AICPA Achievement Test, Level I, Form E-S were studied in order to decide whether or not the day classes of the control and experimental years had completed the three-term accounting sequence with the same degree of accumulated knowledge. The "t" value shown in TABLE XXX indicates that no significant statistical difference existed, although a tendency to move in that direction was indicated by the value of -1.211. For a significant difference to have existed at the 95% confidence level the value would have had to have equalled or been greater than ± 1.96 . Since this was not the case, Hypothesis III could not be rejected. Specifically, it appeared there was no significant statistical differences between the Achievement Test scores for the day classes for each year.

TABLE XXX

ACHIEVEMENT TEST

Statistical Tests to Measure Significant Differences at the 95% Confidence Level for All Day Classes in 1970-1971 and 1971-1972

Explanation	1970-1971	1971-1972
Sample size	20	21
Sum of raw scores	299	365
Sum of raw scores squared	5,115	7,309
Mean of raw scores	14.95	17.38
Estimate of the population's standard deviation	5.831	6.928
Pooled standard deviation squared	41.1794	
Standard error of the difference of the means of the scores	2.005	
"t" value	-1.211	

To insure that significant differences truly did not exist, a supplementary "t" test was conducted of the Orientation Test results for just those students in the day classes of the two years who had taken the Achievement Test. The purpose of this additional test was to protect against the possibility that these particular students had entered the three-term sequence with a significant statistical difference between the means of their raw scores on the accounting aptitude test. The results of this test are illustrated in TABLE XXXI.

The "t" value of $-.870$ indicates no significant statistical differences of the entry level of accounting aptitude for the day classes of the two years. The effect of this supplementary test, then, insured

TABLE XXXI

ORIENTATION TEST

Statistical Test to Measure Significant Differences at the 95% Confidence Level for the Day Students Completing the Sequence and Taking the AICPA Achievement Test, Level I, Form E-S in 1970-1971/1971-1972

Explanation	1970-1971	1971-1972
Sample size	20	21
Sum of raw scores	1,134	1,332
Sum of raw scores squared	71,880	100,966
Mean of raw scores	56.7	63.4
Estimate of the population's standard deviation	20	28.7
Pooled standard deviation squared	617	
Standard error of the difference of the means of the scores	7.7	
"t" value	-.870	

that each day class entered the study with a similar aptitude for the subject, and therefore the results of the "t" test that measured the differences of the mean scores of their Achievement Test can be relied upon as being valid.

These results also indicate that Hypothesis III cannot be rejected, because there was no significant statistical difference between the means of the raw scores for the Achievement Test for the day classes of each year.

Evening Classes, 1970-1971 vs. 1971-1972. The procedures used to evaluate the results of the evening classes for the above

period were identical to those for the day classes. These results are illustrated in TABLE XXXII.

TABLE XXXII

ACHIEVEMENT TEST

Statistical Tests to Measure Significant Difference at the 95% Confidence Level for All Evening Classes in 1970-1971 and 1971-1972

Explanation	1970-1971	1971-1972
Sample size	9	15
Sum of raw scores	117	304
Sum of raw scores squared	1,591	6,800
Mean of raw scores	13.0	20.2
Estimate of the population's standard deviation	3.000	6.782
Pooled standard deviation squared	32.54	
Standard error of the difference of the means of the scores	2.403	
"t" value	-2.996	

The resulting "t" value of -2.996 indicates that Hypothesis IV probably should be rejected. Specifically, the test scores indicate a significant difference between the means of the raw scores of the evening students for the two years on the AICPA Achievement Test, Level I, Form E-S. The obvious conclusion was that the variables of personalized attention provided had contributed the difference, since both groups had started the sequence with no statistically significant differences in their basic accounting aptitudes (See TABLES XXIX). However, since the evening students in the experimental year had not

participated in the voluntary "help" sessions and had not had the opportunity to counsel individually with the instructor (although they had received personalized attention in the form of completing the opinionnaire at the beginning of each term), it was not believed the personalized attention, per se, had been the only factor responsible for the significant difference.

At this point the investigator decided to re-examine the remaining students' aptitude test scores, as had been done with the remaining students for the day classes. This necessitated another supplementary "t" test be made of the raw scores these evening students had received on the AICPA Orientation Test, Form B, Revised, as had been done with the day classes for both years. The purpose of this test, once again, was to insure the validity of the results of the Orientation Test of the evening classes for the two years as illustrated in TABLE XXIX. (The $-.456$ "t" value for the original sample of evening classes had indicated that there was no significant differences of the accounting aptitude between these two groups.)

The resulting "t" value of -2.68 (See TABLE XXXIII) for the supplementary test indicates that there had been a significant statistical difference between the mean scores on the Orientation Test for those students who had completed the three-term sequence in the evening classes for the two years. This result suggested that the two groups had indeed come from different populations, and,

TABLE XXXIII

ORIENTATION TEST

Statistical Test to Measure Significant Differences at the 95% Confidence Level for the Evening Students Completing the Sequence and Taking the AICPA Achievement Test, Level I, Form E-S in 1970-1971/1971-1972

Explanation	1970-1971	1971-1972
Sample size	9	15
Sum of raw scores	459	1,160
Sum of raw scores squared	27,949	97,180
Mean of raw scores	51	77.3
Estimate of the population's standard deviation	23.62	23.10
Pooled standard deviation squared	543	
Standard error of the difference of the means of the scores	9.82	
"t" value	-2.68	

therefore, a significant difference in their Achievement Test scores was to be expected.

The foregoing results indicate that the two variables of personalized attention (mandatory individual counseling and voluntary "help" sessions) probably were not responsible for the significant differences between the mean scores on the Achievement Test for the evening classes for the two years. More likely the difference represented the difference in the entry level accounting aptitude of the two groups. Consequently, Hypothesis IV was withdrawn from the study since the two groups had been drawn from different populations, and thus could not be compared on an equal basis.

Results of Student Enrollment and Completion for the Sequence

Day Classes, 1970-1971 vs. 1971-1972. The number of students enrolled in the day classes in the fall term of the control year was 74 compared to 70 students enrolled during the experimental year. This initial difference seemed to indicate that more students would complete the sequence in the control year. As shown in TABLE XXXIV this result did not occur. Instead, only 21 students completed the sequence in the control year compared to 25 students for the experimental year.

TABLE XXXIV

DAY CLASSES

Student Enrollment and Completion of the Accounting Sequence

Enrollment and Completion	1970-1971	1971-1972
Enrolled	74	70
Completed	21	25
Percent of completion	28.37	35.71

Based on a simple comparison of percentages it at first appeared that the students in the experimental year had been more successful in completing the sequence than the students in the control year. To insure that the percentages were significantly different before arriving at this conclusion, however, and thereby rejecting

Hypothesis V, a Z test for comparing the proportions was computed. The results of the test shown in TABLE XXXV indicate a probability factor of $p = 0.344$. This value suggests that the proportion of students who had dropped for each year was not significantly different, and therefore, the difference between the percentages of completion for the two years was probably due to chance. Hypothesis V, therefore, was not rejected.

TABLE XXXV
DAY CLASSES
Z Test for the Comparison of Proportions

Proportion Analysis	1970 Control Year	1971 Experimental Year	Total
Dropped	53	45	98
Completed	21	25	46
Total Enrolled	$N_1 = 74$	$N_2 = 70$	144
Proportion Dropped	$P_1 = 71.63$	$P_2 = 64.29$	$P = 68.06$
Therefore: $z = 0.945$, and $p = 0.344$			

For a significant difference to have existed between the control and experimental years, the value of p (probability) would have had to have been equal to or less than 0.05.

Evening Classes, 1970-1971 vs. 1971-1972. The number of evening students enrolled in the fall term of the control year was

considerably smaller than the number enrolled in the fall term of the experimental year. In 1970-1971 there were 25 students enrolled compared to 45 students enrolled in 1971-1972. This difference suggested that more students should have completed the sequence in the latter year, which, in fact, they did. If the total number of students to complete the sequence had been the only criteria to measure success of the experiment, Hypothesis VI would have been rejected since 15 students in the experimental year had completed the sequence compared to only eight who finished the sequence in the control year (See TABLE XXXVI).

TABLE XXXVI

EVENING CLASSES

Student Enrollment and Completion of the Accounting Sequence

Enrollment and Completion	1970-1971	1971-1972
Enrolled	25	45
Completed	8	15
Percent of completion	32.00	33.33

The number of students completing the sequence, however, was not the only criteria used to measure success, nor were simple percentages. To insure objectiveness in measuring for differences, the Z test for comparing the proportions between the two years was computed since its results would indicate whether the derived statistic

was reliable. The results of this test are shown in TABLE XXXVII.

This test indicates a probability factor of $p = .932$ which strongly suggests that no significant difference existed between the proportion of students who dropped during the two-year period. The number and the percentage of students completing the three-term sequence were, therefore, determined to be due simply to chance. Consequently, Hypothesis VI was not rejected, since there did not appear to be any significant differences between the proportion of evening students completing the sequence for the two years.

If a significance difference had existed between the proportions for the two years, the probability factor, p , would have had to have been equal to or less than 0.05.

TABLE XXXVII
EVENING CLASSES
Z Test for the Comparison of Proportions

Proportion Analysis	1970 Control Year	1971 Experimental Year	Total
Dropped	17	30	47
Completed	8	15	23
Total Enrolled	$N_1 = 25$	$N_2 = 45$	70
Proportion Dropped	$P_1 = .68$	$P_2 = .67$	$P = .671$
Therefore: $z = 0.085$, and $p = 0.932$			

Results of Correlating Student Scores Received on the AICPA
Orientation and Achievement Tests

Before discussing the results of the correlations found between the Orientation and Achievement Tests, it seemed wise to establish a guideline for interpreting the results. To aid in this matter an examination was made of Garrett and Woodworth's text (13, p. 176) entitled Statistics in Psychology and Education. Their interpretation of the correlation values are outlined in the following table:

TABLE XXXVIII
Interpretations of Correlation Values

Correlation	Interpretations
$\pm .70$ to ± 1.00	High to very high relationship
$\pm .40$ to $\pm .70$	Substantial or marked relationship
$\pm .20$ to $\pm .40$	Present, but slight relationship
$.00$ to $\pm .20$	Negligible relationship

With these relationships as a basis for comparing the following correlations, the values had a stronger statistical basis for reaching a more objective interpretation of the findings.

Correlations Noted. An examination of the figures in TABLE XXXIX shows that the correlations for all classes, including both day

TABLE XXXIX

Correlation of AICPA Orientation and Achievement
Tests for All Classes
(1970-1971/1971-1972)

Class Analysis	1970-1971	1971-1972
Day Classes	.659	.684
Evening Classes	.714	.506

and evening, for both years indicated a marked and substantial relationship between the raw scores these students received on the AICPA Orientation Test, Form B, Revised and those they received on the AICPA Achievement Test, Level I, Form E-S. Considering these results, Hypothesis VII was not rejected, since there was no significant differences between the scores the students in all classes received on the AICPA Orientation Test and those they received on the AICPA Achievement Test.

If a significant difference had existed between the scores of the two tests, the correlations noted would have indicated a negligible relationship.

Measuring the Equality of the Correlation

A final test of the data measured the equality of the correlations for the day and evening classes of both years. The purpose of the

test was to insure that the correlations of both years were true, i. e., the correlations measured the same significant relationships of the results of the Orientation Test to the Achievement Test. The results of the test are shown in TABLE XL and XLI.

TABLE XL
DAY STUDENTS
Measuring the Equality of the Correlation

Class	Students	r	z	1/(n-3)
1970-1971	20	.659	.791	.055
1971-1972	21	.684	<u>.837</u>	<u>.059</u>
		Difference = 0.046		Sum = 0.114
$d_{z_1 - z_2} = \sqrt{.114} = 0.339$		$= \frac{-0.046}{.339}$		$= -.135$
Therefore: p (probability) = 0.8926				

The p value of 0.8926 for the day classes for the two years strongly indicates that the correlation values were true, and that these values did indeed measure the same significant relationships of the results of the Orientation Test to the Achievement Test. The p value of 0.4992 for the evening classes for the two years also indicates that the correlation values were true, but to a lesser degree. For a significant difference to have existed, the value of p would

TABLE XLI
EVENING STUDENTS
Measuring the Equality of the Correlation

Class	Students	r	z	1/(n-3)
1970-1971	9	.714	.895	.167
1971-1972	15	.506	.557	.083
		Difference =	0.338	Sum = 0.250
$d_{z_1 - z_2} = \sqrt{0.250} = .5$		=	$\frac{.338}{.500}$	= 0.676
Therefore: p (probability) = 0.4992				

have had to have been equal to or less than 0.05. If this had occurred, the conclusion would have had to have been made that the correlations for the two groups for the respective years had not measured the actual relationship between the two tests. Since this was not the case, Hypothesis VIII and IX were not rejected.

Summary of the Findings of the Linn-Benton
Community College Study

The purpose of the study at Linn-Benton Community College was to learn whether or not mandatory individual counseling of all college transfer accounting students at the beginning of each term of the three-term sequence and voluntary "help" sessions available

throughout this time period would result in significant statistical differences in the students' scores on the AICPA Achievement Test at the end of the college year. In addition, the study attempted to determine whether or not the above two variables of personalized attention would increase the proportion of students who would complete the three-term sequence in the experimental year when compared to the proportion who had completed the sequence in the control year.

The day and evening classes of the control year (1970-1971) were compared to the respective day and evening classes of the experimental year (1971-1972). To ensure adequate control the AICPA Orientation Test was given to detect significant differences in the students' initial aptitude for the subject. None were detected. At the end of the two-year period the students' scores received on the AICPA Achievement Test were compared between the day classes of the control year and those of the experimental year. In like manner no significant differences were noted. When comparing these same scores for the evening classes of the two years, however, significant differences were detected. Before concluding that the above two variables had been responsible for the difference, an additional test was made of the Orientation Test scores for the students in the evening classes who had also taken the Achievement Test. The resulting "t" value indicated that the initial aptitude levels of the two groups had been significantly different, and therefore, it was unlikely that the

variables of personalized attention had contributed to the difference.

To test for a statistically significant difference in the proportions of students completing the three-term sequence for the day classes of both years, as well as the evening classes of both years, a comparison of proportions test was conducted. No significant differences were noted. Therefore it was concluded the two variables had no effect on the number of students completing the three-term sequence.

A correlation test was also made between the AICPA Orientation Test and the AICPA Achievement Test for the day and evening classes of both years. The results of the test indicated a marked and substantial relationship between the two tests for all classes.

A final test was made to measure the equality of the correlation computed for the day classes of the control year to those of the experimental year, as well as for the evening classes of the control year to those of the experimental year. The results indicated the correlations were equal, and therefore the correlations had measured the same significant relationships of the Orientation Test to the Achievement Test.

VI. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This chapter presents a summary of the investigator's findings, conclusions, and recommendations as they relate to (1) the prevailing trends and methods of instruction in accounting currently taking place throughout the Oregon community colleges, (2) the extent to which attrition exists among first-year accounting students at Oregon community colleges, and (3) the effects of personalized attention, including individual counseling and voluntary "help" sessions, on the success of first-year accounting students at Linn-Benton Community College.

SUMMARY

The Statewide Study

Trends and Methods of Instruction

A review of TABLE I indicates that the majority of accounting faculty in Oregon community colleges did not have adequate background information about (a) the reading and comprehension level skills of their students, (b) how the student views himself as a scholar, and (c) the student's level of interest in accounting when he enters the first term of the accounting sequence. The faculties did appear to have adequate background information about the student's reason(s) for taking accounting and his bookkeeping background.

These same faculties generally appeared to agree on their

responsibilities as they related to (a) informing the student about the value of accounting early in the course, (b) building the student's self-confidence, as well as (c) building the instructor's self-confidence, (d) reviewing solutions to homework in class, (e) providing the student with the best text available on the market, and (f) using all input available to better understand how to improve their instruction.

Although all colleges in the study allowed both freshmen and sophomores to enroll in the accounting sequence, fifty percent of the respondents indicated a tendency to prefer grouping of some type, including consideration of high school and/or college grade-point average, results of aptitude tests, major, prior bookkeeping experience and/or related job experience. In addition, the faculties preferred class sizes of 25 or less, and that the classes continue to meet no more than three times per week, and no more than fifty minutes per meeting.

All instructors presently used some form or combination of the traditional teaching method of lecture and discussion. To supplement this method the instructors make extensive use of the chalkboard and secondary use of the overhead projector. None of the instructors used television monitors or a programmed text as the required text. Two-thirds of the colleges do not have regularly required laboratory sessions, and of the remaining one-third (four colleges) only one required laboratory sessions for the students in the college-transfer accounting

sequence. The sum effect of this observation is that ten of the eleven community colleges do not require laboratory sessions for the transfer accounting student. The colleges were at a stalemate regarding the value of a research project for the accounting students; fifty percent of the faculties were in favor of the activity and fifty percent generally did not encourage it.

The majority of the respondents presently provided personalized attention in the form of office hours, individual counseling, and one-to-one and group "help" sessions. A minority of the faculties provided other types of personalized attention in the form of informal discussions, convenient times to visit with the instructors, voluntary and mandatory laboratory sessions, subject-matter handouts and student assistants.

These same respondents, however, have failed to offer other types of personalized attention that might provide other valuable assistance to the students. Examples of types not presently being provided, or seriously being considered, included programmed texts, workbooks and practice sets with keys, programmed and/or non-programmed filmstrips, audio and/or video tapes, and accounting instructors available to assist students in the library.

The instructors felt the one-to-one "help" sessions and individual counseling activities were the two most effective means of personalizing attention for the accounting students. On the other

hand, they indicated that no one method of personalizing attention can be determined as being the least effective means of personalizing attention at the present time.

Although most instructors stated they provided individual counseling, they indicated it was not provided at a regularly scheduled time. When and if individual counseling did take place, it was usually done at a time requested by the student or at the discretion of the instructor.

The faculties were generally in favor of providing personalized attention because it tends to (a) enhance student interest in the subject; (b) help students more easily learn the course objectives and subject matter; (c) help more students complete the accounting sequence; (d) help instructors better understand the learning problems of their students; (e) encourage instructors to more carefully organize their presentations; and (f) encourage instructors to continually evaluate their own progress in order to make necessary changes in their method of instruction.

Report from the Registrars' Office

A review of TABLE XI indicates that on a statewide basis (a) 70.69 percent of all students enrolled in BA 211 completed it, (b) 74.39 percent of all students enrolled in BA 212 completed it, and (c) 81.28 percent of all students enrolled in BA 213 completed it;

significantly enough, however, only 28.49 percent of all the students first enrolled in BA 211 completed the entire three-term sequence.

An examination of the information in TABLE XXV indicates the reason for this low rate of completion for the sequence. Specifically, of the 1228 students completing BA 211, only 988 returned to enroll in BA 212. Thus 19 percent of the students were lost between these two terms. In addition, a similar rate of loss, 17 percent, existed between BA 212 and BA 213. These figures show that attrition definitely exists between each term as well as within the term.

TABLE XIV illustrates a definite difference of completion rates for the three-term sequence among the geographical areas within the state. Generally, community colleges in the three-less populated areas appeared to have students who were more likely to complete the accounting sequence. For example, Group I (Eastern Oregon) had a 37.06 percent completion rate, Group III (Willamette Valley) had a 29.52 percent completion rate, and Group IV (Coast) had a 30 percent completion rate, whereas the one major metropolitan area in the state had only a 23.22 percent rate of completion.

The foregoing figures also indicate more successful completion rates from one less populated area to another, e.g., Group I had a considerably larger completion rate than either Group III or Group IV. Further examination identified the reason for this phenomenon. Two of the three colleges in Group I had a 35.71 percent and

a 49.42 percent completion rate. Additional review of the responses of these two colleges' questionnaire indicate that both required definite prerequisites for students entering the accounting sequence: (1) only sophomore business majors are allowed to enroll at one of the colleges, and (2) only students having had high school bookkeeping or related business experience are allowed to enroll at the other. None of the other community colleges in any of the other groups had any restrictions for entry.

The analysis of completion rates of the students enrolled in BA 211 for the two-year study by personal characteristics indicates that a larger percentage of the students completing the sequence tended to be (a) male, (b) age 31 or older, (c) married, (d) high school graduates, (e) veterans, (f) sophomores, (g) part-time students, and (h) accounting majors. Students tending to be less successful were (a) female, (b) age 19-21, (c) divorced, separated, or widowed, (d) without either a high school diploma or GED certificate, (e) non-veterans, (f) freshmen, (g) full-time students, and (h) college transfer secretarial science majors.

A final analysis was made of the completion rates between those students required to complete at least three terms of accounting, excluding forestry majors, and those required to have one or fewer terms of accounting. The review indicates that the students required to have at least three terms of accounting had a 31.71

percent rate of completion of the accounting sequence compared to a 23.58 percent rate of completion for those required to have one or fewer terms of accounting.

The Linn-Benton Community College Study

Prior to participating in the Linn-Benton study, all students enrolling in BA 211 in the fall classes of 1970-1971 and 1971-1972 were required to take the AICPA Orientation Test, Form B, Revised. This test measured the entry-level aptitudes of the students who were about to begin the study of accounting. The results of the testing showed no statistically significant differences between the day classes of 1970-1971 and 1971-1972, or between the evening classes for the two years. The effect of these observations suggested that any subsequent statistically significant differences on the AICPA Achievement Test, Level I, Form E-S, or between the percentages of students completing the three-term sequence was the direct result of the effect of the two variables of personalized attention (mandatory individual counseling and voluntary "help" sessions) introduced to the experimental classes in 1971-1972, the experimental year.

The results of the AICPA Achievement Test given to the control and experimental groups at the end of each respective year indicated no statistically significant differences between the day classes of 1970-1971 and 1971-1972. Between the evening classes of the two

years, however, a statistically significant difference did exist, which was difficult to explain since none of these students had participated in the face-to-face individual counseling or voluntary "help" sessions. To help account for this difference, the AICPA Orientation Test, Form B, Revised scores of only those students taking the AICPA Achievement Test were compared by testing for the "t" value. The results showed that with these more select groups a statistically significant difference did exist. Obviously then the difference on the AICPA Achievement Test had not been the result of the two variables of personalized attention. More likely the difference existed because of the dissimilarity in the entry-level aptitude for these two groups, and because these two groups came from different populations.

To test for a statistically significant difference between the proportions of students completing the three-term sequence for the day classes of both years a comparison of proportions was made. No significant differences were noted. The same test was also applied to the evening classes for both years. Once again there was no statistically significant difference..

To measure the ability of the AICPA Orientation Test, Form B, Revised, to predict student success in the first year of accounting, a correlation test was made on the scores the students received on this test and those they received on the AICPA Achievement Test, Level I, Form E-S. The results indicated a marked and substantial

relationship between the two tests for the day and evening classes of both years

A final statistical test measured the equality of the correlation computed for the day classes of the control year with those of the experimental year, as well as for the evening classes of the control year with those of the experimental year. The resulting computed values indicated that the correlations were equal, and the correlations had therefore measured the same significant relationships of the Orientation Test to the Achievement Test.

CONCLUSIONS

The following conclusions were drawn based on and supported by data presented in this investigation.

Statewide Study

Trends and Methods of Instruction

1. The majority of the accounting instructors in Oregon community colleges do not have adequate background information about the abilities and aptitudes of the students enrolling in the first-year accounting course entitled Principles of Accounting.
2. The majority of the accounting instructors agree on their basic responsibilities to the students regarding:

- a. Informing the students early in the course of the value of accounting
 - b. Building the student's self-confidence
 - c. Building their own self-confidence
 - d. Reviewing solutions to homework in class
 - e. Providing the students with the best text available, and
 - f. Using all input available to improve their instruction.
3. Since the majority of the community colleges in Oregon do not have prerequisites for those students enrolling in the first-year accounting course, the accounting faculties should at least provide an environment more conducive to learning by grouping the accounting students by one of the following means: sophomore standing, gpa, or some aptitude or vocational interest test score.
 4. The majority of the accounting instructors in Oregon community colleges continue to use exclusively the lecture method of presenting the subject matter, although they repeatedly acknowledge that this method plus some form of personalized attention may be more beneficial to the student.
 5. The majority of the accounting instructors presently provide a wide variety of informal opportunities to personalize the subject of accounting, e.g., office hours, individual counseling, and one-to-one and group "help" sessions.
 6. These same faculties, however, have been quite reticent in

providing more formal opportunities for personalizing the subject matter by seldom using programmed texts, programmed film-strips, workbooks and/or practice sets with keys, and audio and video tapes.

7. The majority of the accounting instructors are in favor of providing various types of personalized attention because it
 - a. Helps to enhance student interest in the subject
 - b. Helps the students to more easily learn the subject matter
 - c. Helps the student to complete the accounting sequence
 - d. Helps the instructor to better understand why the student is experiencing learning difficulties.
 - e. Encourages instructors to more carefully organize their materials, and
 - f. Encourages more instructors to continually evaluate their method of instruction, and thereby make any changes indicated.

Registrar Data on Students Enrolled

1. The average community college in the state of Oregon can expect only about 30% of all students enrolled in the first term of Principles of Accounting to complete all three terms of the sequence.
2. The average community college in the state of Oregon can expect only about 32% of all students required to have at least three terms of elementary accounting, and who enroll in the first term,

to complete the three-term sequence.

3. The average community college in the state of Oregon can expect only about 24% of all students required to have at least one term of elementary accounting, and who enroll in the first term, to complete the three-term sequence
4. The average community college in the metropolitan Portland area can expect only about 23% of all students enrolled in the first term of elementary accounting to complete the three-term sequence.
5. The profile of the personal characteristics of those students who tend to be more or less successful in completing the three-term sequence of accounting should be used only as a guide. Instead each student should be judged as success-oriented or not based on a variety of sources, including prior high school and/or college gpa, aptitude test scores and personal interviews.

The Linn-Benton Community College Study

1. Even when students enrolled in the Principles of Accounting course at Linn-Benton Community College are required to counsel individually with their instructor at the beginning of each term and are given the opportunity to attend voluntary "help" sessions, they will probably:
 - a. Seldom attend the "help" sessions

- b. Not score significantly higher on the AICPA Achievement Test,
or
 - c. Be more likely to complete the three-term sequence than those
students not having had these two types of personalized attention.
2. It appears that additional research must be conducted at Linn-Benton Community College to discover how to improve the communication gap that appears to exist between the accounting instructor and student.
 3. The AICPA Orientation Test is a valid measurement of the degree of success the student can expect upon completion of the three-term sequence.
 4. The students who enroll in the evening classes of Principles of Accounting have a wide range of abilities and aptitude from one year to the next.
 5. Personalized attention in its present form at Linn-Benton does not appear to be effective in guaranteeing the successful completion of the three-term sequence of first-year accounting.

RECOMMENDATIONS

Statewide Study

Trends and Methods of Instruction

1. In order to help the accounting instructor to (a) better understand the student's verbal and quantitative abilities as they relate to the study of beginning accounting, (b) better understand the student's ability to work with individuals or groups, and (c) better understand the student's degree of interest in various occupations, it is recommended that all students enrolling in BA 211 should be required to take one or all of the following tests:
 - a. The AICPA Orientation Test (the form will vary at the discretion of the AICPA Testing Project Office),
 - b. The Minnesota Multi-Phasic Inventory Test, and
 - c. The Strong Vocational Interest Blank (for men or women as the circumstances may dictate.)
2. Since non-grouping of accounting students has produced only a 28.49% rate of completion throughout the state, it does not appear that grouping of these students would be less successful. In fact it might be more successful. Therefore it is recommended that grouping be implemented.
 - a. The AICPA Orientation Test is recommended for use in

deciding how best to group the students.

- b. In addition, once grouping is agreed upon, it is also recommended that the class size be limited to 25 students.
3. Since the majority of the accounting instructors seem likely to continue teaching by the lecture-type method of instruction, it is recommended that additional means be used to improve the channels of communication that exist between the instructor and the students. Three techniques which might accomplish this objective, either individually or collectively, include:
 - a. A pretest of all students entering BA 211 which might well include topics that would be discussed during the term. The test would help the instructor to better understand the student's background in accounting, and would help him to identify those areas needing to be covered in greater depth.
 - b. Mandatory individual counseling which might be used with the intent to more quickly learn about the student's background and goals and how best to help him accomplish these objectives.
 - c. Mandatory laboratory sessions which might be used to maintain and insure effective channels of communication throughout the term and sequence.
4. Although many informal types of personalized attention are presently being offered by the accounting faculties throughout the

state, it is recommended that more formal and somewhat programmed means of personalizing attention also be introduced. These means might include such types as programmed texts, workbooks and practice sets with keys, programmed filmstrips, audio tapes, and video tapes.

Registrar Data on Students Enrolled

1. Since the percentage of completion of the three-term sequence for those students required to have at least three terms of accounting was small, 31.71%, it is recommended that a closely controlled study be made of these students by implementing the forementioned battery of tests, including the pretest, scheduling mandatory individual counseling sessions, and requiring mandatory laboratory sessions. These techniques would then be supplemented by post-withdrawal interviews by the college counselor with those students who had dropped, in order to learn more about the student's reaction to the course and why he had dropped from the program.
2. Since the percentage of completion of the three-term sequence for those students enrolled in accounting in the metropolitan Portland area was also quite small, 23.22%, it is also recommended that a closely controlled study be made of these students. The study

would be implemented in the manner indicated in the previously mentioned recommendation.

3. Since those colleges in the study having prerequisites for entry into the Principles of Accounting course had larger percentage rates of completion for the three-term sequence than the state average, it is recommended that prerequisites of some form be introduced into all community colleges. The following criteria might well be considered:
 - a. All students enrolling in the principles course must be sophomore business students.
 - b. Students who are not sophomore business students must have had at least one year of high school or college bookkeeping.
 - c. Students who are not sophomore business students must have had at least one year of related business experience.
4. Although the profile of personal characteristics of those students most likely to be or not to be successful in completing the three-term accounting sequence is interesting, the instructor should not allow it to help him formulate any preconceived idea about whether or not any particular student will or will not be successful. Instead, it is recommended that the instructor rely more heavily on the results of the battery of tests, and the information learned about the student while working with him in the mandatory individual counseling and laboratory sessions.

The Linn-Benton Community College Study

1. In order to more quickly learn about each student's strengths and weaknesses in accounting, it is recommended that all students enrolling in Principles of Accounting at Linn-Benton Community College be required to take a battery of tests including:
 - a. The AICPA Orientation Test
 - b. The Minnesota Multi-Phasic Inventory Test
 - c. The Strong Vocational Interest Blank Test
2. In addition, in order to improve the channels of communication between the instructor and students, it is recommended that mandatory individual counseling and mandatory laboratory sessions be implemented.
3. It is further recommended that the AICPA Achievement Test be continued in order to detect significant changes in the students' achievement.
4. Considering that the students who enroll in the evening classes of Principles of Accounting have a wide range of abilities and aptitudes from one year to the next, it is strongly recommended that the academic and work experience backgrounds of these students be carefully studied in order to introduce the course to them at a point somewhat more advanced if their backgrounds so indicate.
5. Additional investigation is also recommended to determine the

usefulness of carefully prepared programmed texts, workbooks and practice sets with keys, programmed filmstrips, and audio and video tapes with students at Linn-Benton Community College.

6. Quite possibly all of the foregoing suggestions to improve the present completion rate may prove to be of no avail if the student has problems of disciplining and motivating himself, as well as failing to clearly identify his reasons for being in college. It is recommended, therefore, that additional research be conducted in this area in order to clearly identify problems of these types. Once this has been accomplished, the previously mentioned plans to help students be more successful in completing the accounting sequence will more likely occur.

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APPENDICES

APPENDIX A

COURSE OUTLINES

APPENDIX A1

LINN-BENTON COMMUNITY COLLEGE

Principles of Accounting

BA 211

Business Division
September, 1971

3 Credits/3 Hours
Fall, Winter, Spring
and Summer

DESCRIPTION: The course is designed as an introduction to beginning accounting and covers such topics as why accounting is the basis for making business decisions, and how to account for the business' sales, purchases, inventories, and operating expenses. This information is then used to prepare statements of earnings and financial condition.

PREREQUISITE: Although the course is designed primarily for sophomore students in business, other students expressing an interest in the subject may enroll in it. Students are advised to be sure they have what they feel is an adequate ability in reading, reasoning, and arithmetical skills if they wish to be successful in the course.

COURSE OBJECTIVES:

1. To learn why accounting is the basis for making modern business decisions.
2. To understand what effect takes place when there are changes in the financial condition of the firm.
3. To learn how to determine a company's revenue for the period.
4. To learn how to account for those items needing end-of-the-period adjustments.
5. To learn how to account for the period's purchases and sales.
6. To learn about data-processing systems and how they relate to special books of entry.
7. To learn how accounting transactions and books are prepared for the different types of business organizations found in our economy.
8. To learn how to account for the common accounting problems found in corporations.
9. To learn how to do a complete set of books for a business corporation.

TEXT AND REFERENCES:

Text: Financial Accounting by Meigs, Johnson, and Mosich (1970)

Study Guide: Self-Study Guide for Use with Financial Accounting, by Meigs, Johnson, and Mosich (1970)

COURSE CONTENT:

- I. ACCOUNTING IS THE BASIS FOR BUSINESS DECISIONS
 - A. The purpose and nature of accounting
 - B. Financial statements; the starting point in the study of accounting
 - C. How financial statements are used by internal management and outside users.
- II. HOW TO RECORD CHANGES IN FINANCIAL CONDITION
 - A. The ledger
 - B. The journal
 - C. The trial balance
 - D. How the ledger, journal and trial balance relate to one another.
- III. HOW TO MEASURE BUSINESS INCOME
 - A. How to determine what is revenue and what are expenses.
 - B. The adjusted trial balance
 - C. Financial statements
 1. The income statement
 2. The balance sheet
 3. Special financial reports
 - D. Closing the books
- IV. END-OF-PERIOD ADJUSTMENTS
 - A. The purpose of adjusting entries
 - B. How to recognize when they must be made
 - C. The worksheet
 1. Its purpose
 2. How adjusting entries relate to the worksheet
- V. ACCOUNTING FOR PURCHASES AND SALES OF MERCHANDISE
 - A. The difference between accounting for a service business and a merchandise business is discussed.
 1. Purchase account
 2. Inventory account
 - B. Methods of taking inventory
 - C. Inventory control

VI. DATA PROCESSING SYSTEMS AND SPECIAL BOOKS OF ENTRY

- A. Manual, mechanical and electronic data-processing systems
- B. Special books of entry
 - 1. Sales journal
 - 2. Purchases journal
 - 3. Cash receipts journal
 - 4. Cash payments journal
 - 5. Control accounts

VII. FORMS OF BUSINESS ORGANIZATION

- A. Accounting in single proprietorships
- B. Accounting in partnerships
- C. Accounting in corporations

VIII. CORPORATIONS: RETAINED EARNINGS, DIVIDENDS, AND BOOK VALUE

- A. How to report the results of corporate operations
- B. Dividends and stock splits
- C. Treasury stock
- D. Book value per share of capital stock

IX. THE PRACTICE SET

- A. What is a practice set?
- B. Completing a practice set?
- C. Evaluating how working the practice set helped the student to learn the objectives of the course.

METHODS OF INSTRUCTION: Initial instruction of topics new to all students in the class will be presented by lectures, lectures and discussion, regularly scheduled "help" sessions, audio tapes, video tapes, and office visits with the instructor at the request of the instructor and/or student.

Additional instruction will be provided the student by counseling with him at the beginning of each term for a regularly scheduled "meeting" to let the student express his objectives and interest, discuss his reactions to what he has learned in the course to date, and whether or not he believes he has accomplished the goals he originally set out for himself.

Each student, at the option of each teacher, will be given a practice set. This set will include a complete set of books for a typical corporation. The student will be asked to take charge and record the transactions, post them, complete a worksheet, drawup the financial statements, and close the books.

Again at the option of each instructor, each student will be asked to research and write a brief report on a selected accounting topic. A

final aid to instruction will be to invite guest speakers to the class at least once during the year, and preferably once each quarter, to discuss a current trend in the field of accounting.

METHODS OF EVALUATION: The number of examinations will be left to the discretion of each instructor. It appears likely, however, that at least two examinations will be given. This will provide an examination after the first half of the material has been covered. The purpose of the first examination will be to learn whether or not the student has grasped the initial treatment of the study of accounting. The second test will be given to learn whether or not the initial treatment has finally been learned, and whether or not the student has grasped the material presented in the latter half of the course.

To enable each student the opportunity to be sure he fully understands the material covered in the elementary course, each student (at the discretion of each instructor) will have the opportunity to complete a practice set. This activity will include analyzing transactions, journalizing them, posting them, making a trial balance, completing a work sheet, completing the financial statements, closing the books, and making an after-closing trial balance. The teacher will grade each set, making appropriate notations and give it back to the student.

Each student will be asked to write a critique on the guest speaker, his topic, what they learned, and what they felt was irrelevant.

Each student will be given the opportunity to request an Incomplete grade if he feels he should be allowed additional time to complete the work to his satisfaction.

BEHAVIORAL OBJECTIVES:

1. The student will be able to distinguish between bookkeeping and accounting.
2. The student will be able to identify the types of financial statements, how they are used, and who uses them.
3. The student will be able to distinguish the difference between internal and external management reports.
4. The student will be able to chart the flow of original documents from source to ultimate final filing.
5. The student will be able to indicate his knowledge about the bookkeeping process by doing assorted problems at various points in the cycle, and concluding by doing a practice set for a moderately difficult set of books for a corporation (the latter to be assigned at the discretion of the instructor.)
6. The student will be able to explain the difference and use of the three methods of processing data.

7. The student will be able to do problems dealing with the common special books of entry, including sales journals, purchases journals, cash receipts journals, cash disbursements journals, and voucher register.
8. The student will be able to do problems in accounting for single-owner businesses, partnerships, and corporations.

APPENDIX A2

LINN-BENTON COMMUNITY COLLEGE

Principles of Accounting

BA 212

Business Division
September, 1971

3 Credits/3 Hours
Winter, Spring, and
Summer

DESCRIPTION: A continuation of BA 211 which helps the students to gain knowledge regarding how to control cash flows, age accounts receivables and account for bad debts, control inventories, account for the development of costs for long-term assets, control liabilities, and gain insight into the nature of problems dealing with corporation accounting.

PREREQUISITE: Students wishing to take the course should have had BA 211, the first term of the sequence. However, if a student wants to take the course, and can show evidence why he need not take BA 211, he may enroll.

COURSE OBJECTIVES:

1. To gain knowledge about controlling cash operations and the responsibilities of the bookkeeper and accountant.
2. To learn how excess cash can be used to make wise investments.
3. To learn about the roles of the receivables accounts.
4. To learn how to account for inventories.
5. To learn how to account for the company's numerous liability accounts.
6. To learn how to account for the company's many long-term assets.
7. To learn of the importance of consolidations and how to account for them.
8. To learn common methods of analyzing financial statements.
9. To learn about the importance of taxes as they relate to the economic entity, and how the accountant must consider them.

TEXT AND REFERENCES:

Text: Financial Accounting by Meigs, Johnson, and Mosich
(1970)

Study Guide: Self-Study Guide for Financial Accounting by Meigs,
Johnson, and Mosich (1970)

COURSE CONTENT:

- I. CASH AND INVESTMENTS IN SECURITIES
 - A. How to account for cash
 - B. Basic requirements for internal control
 - C. Cash and reconciling the bank statement
 - D. Cash investments in corporate securities
- II. RECEIVABLES
 - A. Accounts receivable
 - B. Notes receivable
- III. INVENTORIES
 - A. Inventory valuation and the measurement of income
 - B. Types of inventory reporting to determine cost
 - C. The importance of consistency in reporting inventory cost
- IV. LIABILITIES
 - A. Notes payable
 - B. Accounts payable
 - C. The Voucher system
 - D. Payroll accounting
 - E. Long-term payables
- V. PLANT AND EQUIPMENT, DEPRECIATION, NATURAL RESOURCES, AND INTANGIBLES
 - A. Plant and equipment
 1. Assets are delayed costs
 2. The effect of depreciation on income measurement
 3. Types of expenditures
 - B. Natural resources
 - C. Intangible assets
- VI. CONSOLIDATED FINANCIAL STATEMENTS
 - A. Nature and advantages of corporate consolidations
 - B. Common methods of accounting for and preparing consolidated statements
 - C. Who uses consolidated statements?
- VII. ACCOUNTING PRINCIPLES AND THE PUBLICLY OWNED CORPORATION
 - A. The need to establish principles
 - B. Authorities who establish principles
 1. American Institute of Certified Public Accountants
 2. American Accounting Association
 3. Others

VIII. ANALYSIS OF FINANCIAL STATEMENTS

- A. Tools of analysis
- B. Funds statements
- C. Cash flow statements

IX. TAXES AND THEIR EFFECT ON BUSINESS DECISIONS

- A. The nature and importance of taxes, and how to plan for them
- B. The Federal income tax
- C. Property taxes
- D. Sales and excise taxes

METHODS OF INSTRUCTION: Typical methods of instruction will be by lecture, lecture and class discussion, lecture and class question and answer periods, overhead projector overlays to introduce new material and provide solutions to problems previously assigned, "help" sessions for one or more students (these sessions will be made available at least twice a week at times common to most students), individual counseling at the beginning of each term, audio tapes, video tapes, self-study guides, and other techniques as they seem appropriate.

Individual instructors may choose to use guest speakers at least once per term and have the class go on carefully selected field trips to enhance their learning experiences as they deal with the study of accounting and the science of management.

Some instructors may assign each student a topic to research and analyze, and then write a brief report summarizing their findings and drawing conclusions about their reactions to their observations.

METHODS OF EVALUATION: Each instructor will attempt to find out the entry-level ability of each student as soon as possible early in the course. Based upon this knowledge each will try to assign grades to each student based upon what he accomplishes after completing each section of the course.

Some common methods of evaluation that will probably be used by one or more of the instructors will be unit tests, a mid-term examination, and a final examination. Other methods of evaluation will be to review student homework, critiques students have made on the guest speakers, field trips, and written reports, and oral evaluations made by the instructor after counseling individually with each student.

BEHAVIORAL OBJECTIVES:

1. The student will be able to explain what is meant by an

internal cash control system and how it protects the firm's operations.

2. The student will be able to reconcile a moderately difficult bank statement.
3. The student will be able to discuss the importance of making wise investments with a firm's excess assets and do problems relating to this activity.
4. The student will be able to distinguish the difference between accounts receivables and notes receivables and when each is used.
5. The student will be able to do problems relating to the above receivables.
6. The student will learn the importance of the inventory account.
7. The student will be able to explain how inventory valuation helps determine the accurate measurement of income for the period.
8. The student will learn various ways of costing the inventory, including FIFO, LIFO, Weighted Average, Lower of Cost or Market, Gross Profit Method, and the Retail Method.
9. The student will also be able to recognize the importance of consistency of method from year-to-year.
10. The student will be able to do problems relating to notes payable, accounts payable, and the voucher system of accounting.
11. The student will be able to do a payroll for a moderately large firm.
12. The student will be able to understand how bonds are accounted for in business firms. The relationship of bond amortization to the annual rate of bond interest and yield to maturity will be amplified.
13. Students will be able to do problems relating to capital assets, including property (real), plants and factories, equipment, natural resources, and intangible assets, e. g., amortization, goodwill, patents, copyrights, leaseholds, et al.
14. The student will be able to explain why businesses consolidate.
15. The student will be able to do at least one problem dealing with consolidation of business firms.
16. The student will learn the importance of establishing accounting principles, and exactly who contributes to this establishment.
17. The student will know why a common measuring unit in accounting is important, and therefore, why historical costing has prevailed in the accounting field.

18. The student will learn why it is important to analyze financial statements.
19. The student will do problems that help him to understand how to analyze financial statements.
20. The student will be able to understand the concepts of "cash flows" and "funds statements."
21. The student will understand the importance of tax planning and be able to do moderately difficult problems relating to the subject.

APPENDIX A3

LINN-BENTON COMMUNITY COLLEGE

Principles of Accounting

BA 213

Business Division
September, 1971

3 Credits/3 Hours
Spring and Summer

DESCRIPTION: The final term of the three-term sequence helps the student to learn how to plan and control business costs, how to plan for profit, how sales volume and profit relationships effect company costs, how product and company standards provide means of management control, how management accounting systems help to measure divisional and company performance, and how to use relevant cost analysis ratios to aid in the company's short- and long-range planning operations.

PREREQUISITE: A student wishing to take the course should have had BA 212, the second term of the sequence. The student, however, may take the course without the prerequisite if he can show good evidence why he is qualified.

COURSE OBJECTIVES:

1. To learn about the distinctive purposes of accounting for planning and control.
2. To learn how to plan for profit.
3. To learn how sales volume and profit relationships effect company costs.
4. To learn about the different types of operational costs.
5. To learn how product and company standards provide management control.
6. To learn the roles of discretionary and committed costs.
7. To learn the characteristics of responsibility accounting.
8. To learn about management accounting systems and how to measure divisional performance.
9. To help the student to learn how to make relevant cost analysis to solve management financial problems.
10. To learn about the importance of long-range planning and some of the inherent difficulties that relate to it.
11. To help the student to understand how quantitative techniques influence management accounting.

TEXT AND REFERENCES:

Text: Accounting for Management Control: An Introduction by
Horngren (1970)

Periodicals:

- Journal of Accountancy (current editions)
- Management Accounting (current editions)

COURSE CONTENT:

- I. SCORE KEEPING, ATTENTION DIRECTING, AND PROBLEM SOLVING
 - A. Distinctive purposes of accounting for planning and control
 - B. Management by exception
 - C. The role of the accountant in the organization
 - D. Economic analysis and implementation
 - E. Goal congruence
- II. THE MASTER BUDGET: PLANNING FOR PROFIT
 - A. Characteristics of budgets
 - B. The preparation of a master budget
 - C. The difficulties of forecasting sales
- III. THE EFFECT OF VOLUME-PROFIT RELATIONSHIPS ON COST BEHAVIOR
 - A. Types of costs
 - B. Introduction to cost-volume-profit analysis
 - C. Uses and limitations of cost-volume analysis
- IV. TYPES OF COSTS LOOKED AT IN MORE DETAIL
 - A. Variable costs
 - B. Types of fixed costs
 - C. Types of mixed costs
 - D. Comparison of the contribution approach of cost analysis to the traditional approach of cost analysis.
- V. STANDARDS AND FLEXIBLE BUDGETS FOR CONTROL
 - A. Need for standards and forecasting
 - B. Types of variances
 - C. The need for flexible budgets
- VI. CONTROL OF FIXED COSTS: DISCRETIONARY AND COMMITTED COSTS
 - A. What are discretionary costs and how does the manager use this information?
 - B. What are committed fixed costs and how does the manager use this information?
- VII. RESPONSIBILITY ACCOUNTING AND THE CONTRIBUTION APPROACH TO COST ALLOCATION
 - A. Characteristics of responsibility accounting
 - B. The contribution approach to cost allocation
 - C. Guides to cost allocation

- VIII. JUDGING MANAGEMENT ACCOUNTING SYSTEMS AND MEASURING DIVISIONAL PERFORMANCE
 - A. How good are management accounting systems
 - B. How to evaluate the rate of return for judging divisional performance
 - C. How to price intercompany transfers
- IX. RELEVANT COST ANALYSIS FOR PROBLEM SOLVING
 - A. The meaning of relevancy
 - B. Relevancy vs. irrelevancy
- X. THE LONG-RANGE PLANNING
 - A. The characteristics of purposes for internal accounting
 - B. What are capital budgets and how does management use them?
 - C. The problem of uncertainty and the need for sensitivity analysis
 - D. The need for and characteristics of net present value activity
- XI. INFLUENCES OF QUANTITATIVE TECHNIQUES ON MANAGEMENT ACCOUNTING
 - A. Operations research
 - B. Statistical probability theory
 - C. The characteristics of linear programming
 - D. Inventory planning and control systems
 - E. Computers, systems, and organizations

METHODS OF INSTRUCTION: Typical methods of instruction will be by lecture, lecture and class discussion, lecture and class question and answer periods, overhead projector overlays to introduce new material and provide solutions to problems previously assigned, "help" sessions for one or more students (these sessions will be made available at least twice a week at times common to most students), individual counseling at the beginning of each term, audio tapes, video tapes, self-study guides, and other techniques as they seem appropriate.

Individual instructors may choose to use guest speakers at least once per term. They may also have the members of the class go on carefully selected field trips to help them enhance their learning experiences as they deal with the study of accounting and the science of management. At other times instructors may elect to have students research a topic relating to managerial accounting and present a brief written paper on their findings. This can be made more meaningful by having the students critique the work making suggestions about how the problem discussed may be corrected or how the

author could have done a better job of writing the article to make it more valuable.

METHODS OF EVALUATION: Each instructor will attempt to find out the entry-level ability of each student as soon as possible early in the course. Based upon this knowledge each will try to assign grades to each student based upon what he has accomplished after completing each section of the course.

Common methods of evaluation used by instructors will be to give unit tests, a mid-term examination, and a final examination. Other methods of evaluation will be to review student homework, to evaluate student critiques made on the guest speaker(s), field trips, and written reports, and to make judgments based on oral evaluations of the student after counseling individually with each student.

BEHAVIORAL OBJECTIVES:

1. The student will be able to identify the three specific ways in which the accountant's duties relate to the duties of the operation.
2. The student will be able to define the major duty of each of the following:

a. Payroll clerk	g. Budgetary accountant
b. Accounts receivable clerk	h. Cost analyst
c. Cost record clerk	i. Head of special reports and studies
d. Head of general accounting	j. Head of accounting for planning and control
e. Head of taxes	k. Controller
f. Head of internal auditing	
3. The student will be able to describe the contents and benefits of preparing a master budget. In addition, he will be able to prepare one from given data.
4. The student will be able to discuss seven considerations which make it difficult to forecast sales.
5. The student will be able to do reasonably difficult problems in cost-volume-profit analysis.
6. The student will be able to freely distinguish among variable, mixed, and fixed costs for merchandising and manufacturing firms.
7. The student will be able to do a problem relating to cost behavior patterns that indicate he knows how to project costs on either the traditional (functional) approach or the contribution approach.

8. The student will be able to explain accounting standards and how they are used for forecasting.
9. The student will be able to explain the difference between standards and budgets.
10. The student will be able to show how price and quantity variances relate to cost standards.
11. The student will be able to distinguish the roles of the static budget and the flexible budget.
12. The student will be able to distinguish between discretionary fixed costs and committed costs and be able to do at least one problem dealing with each. The student will also be able to indicate how the manager uses each type of cost.
13. The student will be able to outline the characteristics of responsibility accounting and how the controller and other management personnel use this information.
14. The student will be able to distinguish when to allocate specific costs and when not to allocate them.
15. The student will be able to judge the adequacy of typical management accounting systems.
16. The student will be able to discuss clearly the role of the accountant to provide precise (accurate) and relevant (pertinent) data.
17. The student will be able to clearly indicate the requirements needed in making effective long-range plans.
18. The student will be able to understand the concepts of discounted cash flow, net present value, payback method, and the payback reciprocal by doing problems dealing with these ideas.
19. The student will be able to clearly explain what is meant by operations research and its significance to management personnel.
20. The student will be able to do a simple problem of managerial accounting dealing with statistical probability theory.
21. The student will be able to clearly indicate the characteristics of linear programming and how it is used by operating management.
22. The student will be able to understand the importance of careful inventory planning and explain simple systems of inventory control.

APPENDIX B

GLOSSARY

APPENDIX B

GLOSSARY OF TESTS CITED IN THE
REVIEW OF THE LITERATURE

American College Testing (ACT) Program Examination, I. A comprehensive intelligence test of the entry-level skills of college candidates in four areas, including English, math, social studies reading, and natural sciences reading. A composite score of these topics is also included.

American Council on Education (ACE), General Ability Test. An ability test used with first-year college students to measure their language and quantitative abilities. A third score is given which is a composite of the forementioned abilities.

American Council on Education (ACE), Psychological Examination for College Freshmen. An ability test used with freshmen college students to measure their language and quantitative abilities. A third score is given which is a composite of the forementioned abilities.

Ayres Handwriting Scale. An ability test used to measure the quality and speed of a student's handwriting.

Cooperative College Math Pretest. An ability test used to measure a student's background on topics most likely to be included in a first-year college math class.

Edwards Personal Preference Schedule. This test is used to measure a student's character and personality as it relates to his ideas on health, finances, social activities, social-psychological relations, personal-psychological relations, sex, home and family, morals, adjustments to college, the future, and curriculum and teaching procedures. The information was designed primarily for research and counseling purposes.

Kelley-Greene Reading Comprehension Test. A comprehensive test which measures four reading strengths of the student, including paragraph comprehension, directed reading, retention of details, and reading rate. A fifth score is given which is a composite of the forementioned areas.

Minnesota Multi-phasic Personality Inventory. This test is used to measure a student's character and personality. Scores are

provided relating to hypochondriasis, depression, hysteria, psychopathic deviate, masculinity and femininity, paranoia, psychothenia, schizophrenia, hypomania, social-introversion, question, lie, validity, and test-taking attitude.

Strong Vocational Inventory Blank (available for either men or women.) This test measures a student's interest level in up to 50 occupations, including 6 occupational groups and 4 non-vocational groups.

APPENDIX C

OCCA LETTER OF APPROVAL TO CONDUCT STUDY

APPENDIX C

OREGON COMMUNITY COLLEGE ASSOCIATION

685 Cottage Street, N. E.

Salem, Oregon 97301

Telephone 378-6000

December 14, 1971

Alan Schultz of Linn-Benton Community College has requested and approved authority of the OCCA in accordance with Research Code 5.1 to 5.5 for the enclosed research instrument.

In the approval process a Committee composed of two Deans of Students-Registrar people including Dr. Bob Jensen of Mt. Hood and Dick DeBisschop of Treasure Valley gave detailed review of the instrument being submitted on student information and have granted their approval. On the instrument to accounting instructional personnel the Committee members were Gordon Wehner of Lane and DeVon Wade of Chemeketa. Alan has discussed his proposed doctoral study with a number of other community college people who have assisted him in making his instruments appropriate. One of the criteria for this approval is providing an abstract back to each participating department as well as a copy of the full dissertation to this office. Upon completion, the office copy will be available for loan in any participating community college.

Your kind cooperation and participation in this study will sincerely be appreciated by Alan.

Cordially yours,

/s/ Don Shelton

Donald K. Shelton
Executive Secretary

DKS:ms
Enclosure

cc. Dr. Jensen
Dick DeBisschop
Gordon Wehner
DeVon Wade

APPENDIX D

QUESTIONNAIRE AND ACCOMPANYING COVER LETTER

APPENDIX D1

LINN-BENTON COMMUNITY COLLEGE

P. O. Box 249

Albany, Oregon 97321

503-926-6091

The Business Division at Linn-Benton Community College is quite interested in learning about the experiences other accounting instructors in Oregon community colleges are having with teaching the college transfer course Principles of Accounting (BA 211, 212, 213). Specifically, what effect has personalized attention had on student learning, and has this resulted in more students completing the three-quarter sequence?

In reviewing current literature it seems that many colleges throughout the country are experiencing a high rate of attrition. Many two and four-year colleges suffer as high as a fifty percent drop in enrollment from the first to the second term of accounting. To better understand this phenomena Linn-Benton's Business Division and I are presently completing a two-year controlled study to learn more about (1) student attrition in the first year of college accounting, and (2) whether or not those students completing the course could have learned the material more easily, and at the same time have scored higher on the American Institute of Certified Public Accountants' Achievement Test, Level I (Short Form). When the study is completed in June of 1972 we will compare our numbers of students completing the sequence and their respective AICPA scores for both the college years 1970-1971 and 1971-1972 to learn whether or not we accomplished what we set out to do. To add more depth to the study we have also made an attempt to identify the students by their age, sex, marital status, veteran status, college major, course load, class (freshman/sophomore), high school graduate or GED equivalent, and numbers of terms of Principles of Accounting they have completed.

In order to better understand the significance of our results we recognized the importance of finding out how other accounting instructors throughout the state (on the community college level) felt about personalized attention and the effect it has on their own program. To enable us to get this information we ran a pilot study of the accounting instructors at Lane, Treasure Valley, Blue Mountain, and Chemeketa Community Colleges. In this study we provided each

instructor with a copy of a questionnaire that might provide this information and asked them to make suggestions about how it could be improved upon in order that the final form of the questionnaire would allow each community college to give complete information about their accounting program. The enclosed questionnaire is the end result of everyone's effort.

Since the questionnaire is short, yet extremely relevant to improving our understanding about the accounting program at the community college level, we would appreciate it if you would have each fulltime instructor who teaches Principles of Accounting carefully and independently complete one and return it to you. Once this has been done we would appreciate it if you would return them to us in the self-addressed envelope. As soon as all schools have returned all questionnaires we will tabulate the answers, analyze the responses, draw what we believe are meaningful conclusions, and suggest recommendations we believe are indicated by these conclusions. An abstract of this preliminary research will be sent to all participating community colleges. (Chemeketa and Rogue River Community Colleges will not be included in this study since they have not yet offered college transfer accounting for at least two years.)

All names of individuals and community colleges will remain anonymous. In this way we believe each instructor will feel free to answer the questions completely, accurately, and truthfully.

As with our local study at Linn-Benton we are interested in the number of students who started Principles of Accounting in the Fall term of each of the college years 1970-1971 and 1971-1972 and whether or not they completed the three-quarter sequence. If not, we need to know which term, i. e., BA 211, 212, or 213, they completed. In order to obtain this information we are planning to contact your college's Dean of Students, _____. A preliminary investigation into this area found all five colleges contacted willing to cooperate. (Schools contacted included Lane, Blue Mountain, Treasure Valley, Mt. Hood, and Clackamas.) Student names will not be used!

The results of the study at Linn-Benton Community College and those learned from the statewide study of the community colleges will be used in the doctoral dissertation of Mr. Alan R. Schultz. This paper will be entitled "An Empirical Study of the Problem of Attrition of Students of First-Year Accounting in Oregon Community Colleges." It is being supervised under the guidance of the School of Education at

Oregon State University. The complete results of the study will be sent to all participating community colleges.

In closing, we apologize that we were not able to visit with each of you personally before giving you the questionnaire, but the distance between colleges and the time element of this part of the study almost prohibits this ideal situation. You can be assured, however, that you are an extremely important link to the success of this study, and that we are dependent on your help.

We will be contacting you in a few days to answer any questions you may have. If you have none, please have your instructors complete the form and return it to us.

Very truly yours,

Alan R. Schultz
Accounting Instructor
BUSINESS DIVISION

APPENDIX D2

QUESTIONNAIRE
for
The Accounting Program Study

The purpose of the following questionnaire is to provide information about the nature of the college transfer accounting program at selected community colleges in the State of Oregon. Specifically, the intent is to discover the effect of personalized attention on first-year accounting students and what effect, if any, this has on their success as determined by the number of students that complete the three-quarter sequence.

In order that all respondents interpret the idea of personalized attention in the manner intended it has been defined as follows:

Personalized attention is an approach to improving instruction which includes many different techniques, including both individual and group instruction outside of the formal classroom setting. Examples of ways this type instruction can be introduced include individual counseling, one-to-one "help" sessions, programmed instruction, audio tapes, et al.

Other terms needing to be defined should be interpreted as follows:

Individual Counseling. This can take place at any time in the quarter, but usually takes place at the beginning or end of the term. Its primary purpose is to get to know the student better by asking him questions about his personal and academic background, his goals while at the college and in the near future, his views on the difficulties he may be experiencing in learning accounting, how he thinks he can overcome these problems, and what he believes the instructor might do to make the topic more easily understood. This type of counseling takes place between the accounting instructor and student, and should not be confused with that type normally done by the regular counseling staff.

Advising. Individual counseling, likewise, should not be thought as "advising" which often takes place between the instructor and the student. Advising as defined in this study

is non-structured and can relate to helping give the student direction on any numbers of different problems other than accounting.

One-to-one "Help" Sessions. These sessions are provided at regularly scheduled times throughout the week and term. Their primary purpose is to allow students to obtain additional instruction from qualified accounting instructors. Although attendance at these sessions is purely voluntary, it is encouraged for those students experiencing difficulties.

TYPES OF QUESTIONS USED IN THE QUESTIONNAIRE

The following questions are examples of the types you will be asked to answer in this questionnaire. Some questions will simply ask you to respond by putting a mark (x), others will be open-ended and allow you to give the answer that is most appropriate to your own circumstances, while others will ask you to indicate certain responses and then explain why you support this view.

Example: I usually am aware of how the student views himself as a scholar. Strongly Agree ___ Agree ___ Disagree x
Strongly Disagree ___

Example: Which of the types of personalized attention below have you used at one time but are not now using, are presently using, intend to use in the near future, or will likely never use?

Audio Tapes?

Have Used ___ Am Using ___ Intend to Use x Will
Likely Never Use ___

Programmed Instruction?

Have Used x Am Using ___ Intend to Use ___ Will
Likely Never Use ___

Example: Which of the types of personalized attention indicated in the previous question have you found to be the most effective in meeting your course objectives?

Most Effective: _____

Why? _____

YOU SHOULD NOW BE READY TO ANSWER THE FOLLOWING QUESTIONS. Please turn the page.

ACCOUNTING QUESTIONNAIRE

Part A. What do I know about the student?

1. I usually know the reasons why the student enrolls in the accounting sequence.
Strongly Agree__ Agree__ Disagree__ Strongly Disagree__
2. I usually know the mathematical background of the student.
Strongly Agree__ Agree__ Disagree__ Strongly Disagree__
3. I usually know the reading and comprehension level of the student.
Strongly Agree__ Agree__ Disagree__ Strongly Disagree__
4. I usually know the bookkeeping background of the student.
Strongly Agree__ Agree__ Disagree__ Strongly Disagree__
5. I usually know how the student views himself as a scholar.
Strongly Agree__ Agree__ Disagree__ Strongly Disagree__
6. I usually know the student's level of interest in accounting when he enrolls.
Strongly Agree__ Agree__ Disagree__ Strongly Disagree__

Part B. What are the responsibilities of the accounting instructor?

7. I believe the instructor should carefully inform the students of the value of beginning accounting in the first week of the sequence.
Strongly Agree__ Agree__ Disagree__ Strongly Disagree__
8. I believe the instructor who wants his students to succeed should help to build their self-confidence early in the course.
Strongly Agree__ Agree__ Disagree__ Strongly Disagree__
9. I believe the instructor may be faced first with building his own self-confidence before being able to solve student problems.
Strongly Agree__ Agree__ Disagree__ Strongly Disagree__
10. I believe that all homework assigned should be gone over in class by the instructor.
Strongly Agree__ Agree__ Disagree__ Strongly Disagree__
11. I believe the student should have the best text available on the market if he is to gain the most benefits from the course.
Strongly Agree__ Agree__ Disagree__ Strongly Disagree__

12. I usually make an effort to use all of the above information to improve my instruction.
Strongly Agree__ Agree__ Disagree__ Strongly Disagree__

Part C. Classroom Mechanics

13. At my college only sophomore students may take the BA 211, 212, 213 college accounting sequence.
Yes__ No__ If no, please explain who does qualify to take the sequence. _____
14. I believe students in first-year accounting should be grouped according to the following plan:
- | | YES | NO |
|-------------------------------------|-------|-------|
| a. High school gpa | _____ | _____ |
| b. College gpa | _____ | _____ |
| c. Aptitude testing | _____ | _____ |
| d. Other _____ | _____ | _____ |
| e. Opposed to grouping of any type! | _____ | _____ |
15. I believe the average class size should be 25 students or less.
Strongly Agree__ Agree__ Disagree__ Strongly Disagree__
16. I believe the typical first-year accounting class should meet _____ times per week, _____ minutes per class meeting.

Part D. Classroom Instruction

17. The most frequently used instructional method in my classroom is _____
18. I use the chalkboard frequently in classroom discussions.
Yes__ No__ Comments? _____
19. I use the overhead projector frequently in classroom discussions.
Yes__ No__ Comments? _____
20. I use television monitors frequently in classroom presentations.
Yes__ No__ Comments? _____
21. In addition to class periods, I require regular laboratory sessions.
Yes__ No__ Comments? _____
22. I usually have a programmed text as the required text.
Yes__ No__ Comments? _____

23. I usually have students do a research study on some phase of accounting at least once during the three-quarter sequence.

Yes ___ No ___ Comments? _____

Part E. Personalized Attention (Including both individual and group instruction outside of the formal classroom setting.)

24. Which of the types of personalized attention listed below have you used in the past but are not using now, are presently using, intend to use at some time in the future, or do not intend to use at any time in the foreseeable future?

	Have <u>Used</u>	Am <u>Using</u>	Intend <u>To Use</u>	Don't Intend <u>To Use</u>
Individual counseling	_____	_____	_____	_____
Group counseling	_____	_____	_____	_____
One-to-one "help" sessions	_____	_____	_____	_____
Group "help" sessions	_____	_____	_____	_____
Programmed texts	_____	_____	_____	_____
Workbook with answers	_____	_____	_____	_____
Practice sets with keys	_____	_____	_____	_____
Programmed filmstrips	_____	_____	_____	_____
Non-programmed filmstrips	_____	_____	_____	_____
Audio tapes	_____	_____	_____	_____
Video tapes	_____	_____	_____	_____
Overhead projector materials	_____	_____	_____	_____
Computer problems and application	_____	_____	_____	_____
Case studies	_____	_____	_____	_____
Small group seminars	_____	_____	_____	_____
Accounting instructor on duty in the library to help students	_____	_____	_____	_____
Regular office hours (number)	_____	_____	_____	_____
Other types of personalized and innovative programs or procedures you have used	_____	_____	_____	_____

25. In referring to question 24, which of the types of personalized attention have you found to be the most effective in meeting your course objectives?

First Most Effective: _____
Why? _____

Second Most Effective: _____
Why? _____

26. Also referring to question 24, which of the types of personalized attention have you found to be the least effective in meeting your course objectives?

First Least Effective: _____
Why? _____

Second Least Effective: _____
Why? _____

27. If you provide individual counseling as defined in the introduction to this questionnaire, please indicate below.

	YES	NO
a. At the beginning of the fall term only	_____	_____
b. At the beginning of each term	_____	_____
c. At the end of the fall term only	_____	_____
d. At the end of each term	_____	_____
e. At what other time? _____	_____	_____

Part F. Teacher Reaction to Personalized Attention

28. I believe that personalized attention increases student interest in accounting.
Strongly Agree__ Agree__ Disagree__ Strongly Disagree__
29. I believe that personalized attention helps the student to learn the objectives of the course more quickly and easily.
Strongly Agree__ Agree__ Disagree__ Strongly Disagree__
30. I believe that by using personalized attention I can better understand the problems students have when learning accounting.
Strongly Agree__ Agree__ Disagree__ Strongly Disagree__

31. I believe that I can help more students complete the three-quarter sequence of college transfer accounting by providing additional personalized attention.
Strongly Agree__ Agree__ Disagree__ Strongly Disagree__
32. I believe that just as many students will complete the college transfer accounting sequence who have been instructed solely by conventional methods of instruction (lecture, chalkboard presentation, and general discussion), as those students who have been instructed by the conventional method PLUS various types of personalized attention.
Strongly Agree__ Agree__ Disagree__ Strongly Disagree__
WHY? _____

33. I believe the instructor who provides personalized attention tends to more carefully organize his material, and therefore, probably helps the student to more quickly and easily learn the subject matter.
Strongly Agree__ Agree__ Disagree__ Strongly Disagree__
COMMENTS? _____

34. I encourage the students to evaluate my instruction.
Yes_____ No_____
35. If you answered yes to question 34, would you please indicate whether or not you use these evaluations to improve future instruction.
Yes_____ No_____ Comments? _____
36. If you answered no to question 34, would you please indicate whether or not you intend to encourage student evaluations in the near future.
Yes, I plan to__ No, I do not plan to__ If no, would you please indicate why_____

YOU HAVE NOW COMPLETED THE QUESTIONNAIRE. The time and help you have given us are deeply appreciated. The answers received by all respondents will be compiled and analyzed, and conclusions drawn in order to make any necessary recommendations that may help accounting instructors in Oregon community colleges learn more about the nature of the college transfer accounting sequence, and thereby increase the numbers of students who are able to complete the first year of accounting study. An abstract of the results will be forwarded to all schools participating in the study.

APPENDIX E

COVER LETTER TO COMMUNITY COLLEGES
AND SAMPLE RETURN

APPENDIX E1

LINN-BENTON COMMUNITY COLLEGE

P. O. Box 249

Albany, Oregon 97321

503-926-6091

The accounting instructors at Linn-Benton Community College are presently conducting a two-year study to help improve the effectiveness of college transfer accounting programs, specifically Principles of Accounting (BA 211, 212, 213), at Oregon community colleges. One part of the two-part study is a controlled experiment at our campus. The second part of the study is a survey of the accounting programs at selected community colleges in Oregon.

The statewide study consists of two parts. First, the chairman of each college's business division will be asked to have each of his accounting instructors complete a copy of the questionnaire we have enclosed with this letter for your personal examination. _____

_____ at your college has already been contacted to help us. And second, in order to make the study as meaningful as possible, we need to find out certain facts about the personal characteristics of the students enrolled in BA 211-213, Principles of Accounting, during the college years 1970-1971 and 1971-1972. In addition, we need to know which of these students completed the sequence and which term those not completing the sequence dropped from the program. (Please Note! Only students who entered in the Fall term will be followed throughout the particular college year; those students enrolling in BA 211 in the Winter and Spring terms will be deleted from the study.) NO INFORMATION DEALING WITH STUDENT NAMES WILL BE REQUIRED. The only identifying feature needed, other than that already indicated, will be the student's student number. It is needed in order to note when a particular student drops from the program or completes the term, and subsequently, completes the sequence.

In summary then, we need specific information about the personal characteristics of the students enrolled in BA 211 in the Fall term of each of the college years designated, and information indicating which of these students completed the three-quarter sequence. In addition

we need to know which ones did not complete the sequence, and therefore, we would like to know which term they did not complete.

For your convenience we have provided a format showing how the data might be listed. Please indicate in the completed sequence column whether or not the student completed the term for which he registered. No personal data is required for the Winter and Spring terms; only the student number is needed and whether or not he completed the course.

SAMPLE FORMAT

COLLEGE YEAR 1970-1971

Fall Term: (BA 211)

Section One

<u>Student No.</u>	<u>Age</u>	<u>Sex</u>	<u>Marital Status</u>	<u>High School/ GED Equiv.</u>	<u>Vet</u>	<u>Major</u>	<u>Class</u>	<u>Fulltime/ Parttime</u>	<u>Completed BA 211</u>
564-34-0484	39	M	Married	GED	Yes	Bus.	Soph.	F	Yes
398-98-4567	19	F	Single	High School	No	Eng.	Frosh.	P	No
879-45-8765	22	M	Divorced	High School	Yes	Undec.	Frosh.	F	Yes

(Note! At this point you should continue to list all other students enrolled in this section.)

Section Two

(This section and any other sections of the Fall term for BA 211 should be completed in the manner outlined under Section One.)

Winter Term: (BA 212)

(Note! No personal data will be required for this term or the Spring term. Only the student number of all students who enrolled and whether or not they completed the course BA 212.)

Section One

<u>Student No.</u>	<u>Completed BA 212</u>
564-34-0484	Yes
879-45-8765	Yes

(Note! Student number 398-98-4567 will not be included in the Winter or Spring term listing because she did not complete the Fall term of BA 211.) (At this point you should continue to list all other students enrolled in this section.)

Section Two

(This section and any other sections of the Winter term for BA 212 should be completed in the manner outlined under Section One of the Winter term.)

Spring Term: (BA 213)

Section One

<u>Student No.</u>	<u>Completed BA 213</u>
564-34-0484	Yes
879-45-8765	No

(Note! Continue to list all other students enrolled in this section.)
(All other sections for this term will be completed in the same manner as this section.)

COLLEGE YEAR 1971-1972

(All terms and sections for the second year may be recorded in the same manner used for the first year.)

The procedure outlined on the preceding page should be repeated for the students enrolled in BA 211 in the following college year 1971-1972. This is extremely important. Please note that since we are still in the Winter term you will not be able to record the information for the Winter and Spring terms at this time. We will contact you on June 15 to obtain the information for these two final terms.

Regarding both college years, some students will be enrolled in the Winter and Spring terms (BA 212, 213) who were not enrolled in the Fall term (BA 211) for that college year. It will not be necessary to delete their names from the list of students enrolled. We will recognize them by their student numbers.

It is quite possible that you may not be able to give us a computer printout of this information because of one of a number of factors. If this is the situation at your school, we would like to have the opportunity to come by to gather this information. Otherwise, we would appreciate a list of this data at your earliest convenience.

The results of the study at Linn-Benton Community College and those learned from the statewide study of the community colleges will be used in the doctoral dissertation of Mr. Alan R. Schultz. This paper will be entitled "An Empirical Study of the Problem of Attrition of Students of First-Year Accounting in Oregon Community Colleges."

It is being supervised under the guidance of the School of Education at Oregon State University. The complete results of the study will be sent to all participating colleges.

We believe the overall study will help all accounting instructors and business divisions at Oregon community colleges have the opportunity to learn from our experiences. In this way we hope to develop a stronger accounting curriculum for all community college students.

We will be contacting you in a few days to help answer any questions you may have about the study.

Very truly yours,

Alan R. Schultz
Accounting Instructor
BUSINESS DIVISION

APPENDIX E2
BLUE MOUNTAIN COMMUNITY COLLEGE
Fall 1971 - BA 211 - Section 1

Student No.	Age	Sex	Marital Status	HS/GED	Vet	Major	Load	Freshman Sophomore	BA 211	BA 212	BA 213
538-46-6857	20	F	Single	Glenwood High School	No	Business	Fulltime	Sophomore	Yes		
540-50-7871	25	M	Married	Hermiston High School	Yes	Acct.	Fulltime	Sophomore	Yes		
540-28-4138	46	F	Married	St. Joseph Academy	No	Acct.	Fulltime	Sophomore	Yes		
543-62-4455	20	M	Single	McEwen High School	No	Business	Parttime	Freshman	Yes		
544-66-6668	19	M	Single	Gem State Academy	No	General	Parttime	Freshman	Yes		
543-54-9544	22	M	Married	Pendleton High School	No	Business	Parttime	Sophomore	Yes		
544-58-3220	23	F	Married	Echo High School	No	Acct.	Parttime	Freshman	Yes		
542-64-5790	20	M	Single	Pendleton High School	No	Pre-Law	Parttime	Sophomore	Yes		
544-58-3126	24	M	Married	McLoughlin High School	Yes	Business	Parttime	Freshman	Yes		
541-56-7846	19	F	Single	Ione High School	No	Business	Parttime	Freshman	Yes		
541-38-4862	35	F	Married	Pendleton High School	No	Educ.	Parttime	Sophomore	Yes		
541-60-2643	21	M	Single	Grant Union High School	No	Pre-Forestry	Parttime	Freshman	Yes		
544-60-7474	19	M	Single	Pendleton High School	No	Pre-Law	Parttime	Sophomore	No		
540-56-6993	20	M	Single	Hermiston High School	No	General	Fulltime	Sophomore	No		

Fall 1971 - BA 211 - Section 2

Student No.	Age	Sex	Marital Status	HS/GED	Vet	Major	Load	Freshman Sophomore	BA 211	BA 212	BA 213
504-54-3460	19	M	Single	Hermiston High School	No	Business	Parttime	Freshman	Yes		
544-64-2609	20	M	Single	Heppner High School	No	Business	Fulltime	Freshman	Yes		
541-70-1194	19	M	Single	Long Creek High School	No	Agri-Bus.	Fulltime	Freshman	Yes		
511-28-9877	41	F	Married	Bethany High School	No	Acct.	Fulltime	Freshman	Yes		
544-52-4581	24	M	Single	Hermiston High School	Yes	Acct.	Fulltime	Freshman	Yes		
540-58-1497	20	M	Single	Pendleton High School	No	Business	Fulltime	Freshman	No		
543-62-4922	21	M	Single	LaGrande High School	No	Business	Fulltime	Freshman	Yes		
543-62-2572	20	F	Married	Pendleton High School	No	Sec. Sc.	Parttime	Sophomore	Yes		
542-62-8383	19	F	Single	Glide High School	No	Agric.	Fulltime	Sophomore	Yes		

APPENDIX F

OPINIONNAIRE USED IN INDIVIDUAL COUNSELING

APPENDIX F1

BA 211 (Fall Term)

GET ACQUAINTED QUESTIONNAIRE

Student Name _____
(Last) (First) (Initial)

Sex: Male _____ Female _____

Classload: Fulltime _____ Parttime _____

Marital Status: Single _____ Married _____ Divorced _____ Other _____
Dependents: _____
(number)

High School Graduate? Yes _____ No _____ G.E.D.? Yes _____ No _____

Major: _____ (If undecided, please indicate.)

What are your goals for the time you will spend at LBCC? _____

What are your goals for the next five years? _____

What problems are you experiencing in learning accounting? Be specific.

1. _____
2. _____
3. _____

How do you think they can be overcome?

1. _____
2. _____
3. _____

What ways would you suggest the instructor use to help students understand the subject of accounting more easily?

The Business Department will have "help" sessions open to students needing additional instruction each noon in B-7. What is your reaction to this extra guidance provided the accounting student? _____

Do you believe you might use this "free" service? _____

APPENDIX F2

BA 212 (Winter Term)

STUDENT REACTION QUESTIONNAIRE

Student Name _____
(Last) (First) (Initial)

Did you complete the first term of accounting last term at Linn-Benton? Yes No

If yes, have your goals for taking accounting changed since enrolling in BA 211? Yes ___ No ___ If yes, what are your new goals?

Have your goals changed for the time you plan to stay at Linn-Benton? Yes No If yes, what are your new plans?

Have your goals changed for the next five years? Yes ___ No ___
If yes, what are your new goals?

If you did not complete the first term of accounting at Linn-Benton, would you please list your goals for the time you plan to spend at LBCC?

In addition, please list your goals for the next five years.

Did you learn as much about accounting in the first term (BA 211) as you expected? Yes No If not, please explain

What problems are you presently having learning accounting? Be specific! 1.

2.

How do you believe they can be corrected? Be specific!

2.

List one way you feel the instructor can help more students better understand accounting.

Last term (Fall, 1971) the Business Division offered free "help" sessions to all accounting and bookkeeping students needing additional instruction. Although the service was available every day at noon, few students used the opportunity. Why do you think more students did not use the service as expected?

Since it will be offered this term (Winter, 1972) do you believe you will use it? Yes No If not, why?

APPENDIX F3

BA 213 (Spring Term)

STUDENT REACTION QUESTIONNAIRE

Student Name _____
(Last) (First) (Initial)

Have you completed both BA 211 and BA 212 at LBCC? Yes__ No__

If you answered yes, would you indicate how your goals have been changed since enrolling in BA 211? _____

If they did not change, please mark here. ☐

If you did not take both BA 211 and BA 212 at LBCC would you please indicate your goals for coming to LBCC? _____

After leaving LBCC? _____

Are you learning as much about accounting as you would like?
Yes__ No__ If not, why? Please explain. _____

What problems are you presently having learning accounting?

1. _____

2. _____

3. _____

How do you believe they can be corrected?

1. _____

2. _____

List at least one way the instructor can help you do a better job of learning accounting.

During the last term (Winter, 1972) the Business Division offered free "HELP" sessions to all accounting and bookkeeping students needing extra help. The sessions were available M - W - F at 2:00 p.m. and T - TH at 11:00 a.m. yet very few students attended. Why do you think so few students used this service? _____

Since it is also available this term (Spring, 1972) everyday at 2:00 p.m. and few have attended to date, would you suggest that it be discontinued? _____

APPENDIX G

SPECIFIC MAJORS AND SUBSEQUENT CLASSIFICATIONS

APPENDIX G

SPECIFIC MAJORS AND SUBSEQUENT CLASSIFICATIONS

1. College Transfer--Accounting
2. College Transfer--Business
Business Administration
3. College Transfer--Secretarial Science
4. Vocational--Business, i.e.
Bookkeeping
Clerical
Business Management
General Business
5. Independents--Data Processing
6. Undeclared Majors
7. Vocational--All other majors, including

Basic Design	Medical Technology
Physical Therapy	Shop
Nursing	Welding
Mortuary Science	Industrial Arts
Law Enforcement	Automotive
Electronics	Sewage Treatment
Mechanical Science	Vocational
8. College Transfer--All other majors, including

English	Science
Art	Education
Pre-Med	History
Psychology	Journalism
Pharmacy	Forestry
Physical Science	Pre-Law
Biology	Social Science
Food Technology	Liberal Arts
Engineering	Agriculture
Electrical Engineering	General Studies
Production Technology	Home Economics
Mathematics	Fish and Game