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THESIS

RELATIONSHIP BETWEEN INNOVATIVE TEACHERS AND STUDENT ACHIEVEMENT AND CAREER ASPIRATIONS

Submitted by

Sheldon R. Mendelson

In partial fulfillment of the requirements

for the Degree of Doctor of Philosophy

Colorado State University

Fort Collins, Colorado

November, 1973

COLORADO STATE UNIVERSITY

November 1973

WE HEREBY RECOMMEND THAT THE THESIS PREPARED UNDER OUR SUPERVISION BY Sheldon R. Mendelson ENTITLED Relationship Between Innovative Teachers and Student Achievement and Career Aspirations BE ACCEPTED AS FULFILLING IN PART REQUIREMENTS FOR THE DEGREE OF Doctor of Philosophy.

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ABSTRACT

RELATIONSHIP BETWEEN INNOVATIVE TEACHERS AND STUDENT ACHIEVEMENT AND CAREER ASPIRATIONS

The purpose of the study was concerned with identifying the type of innovative teacher who made the most significant impact on student achievement and career choice, and whether or not the use of innovative ideas and methods was effective in helping the students achieve better and choose a career.

The investigator gathered general and demographic information from a limited sample of teachers as well as information about the types of innovative ideas and methods employed by the teachers. Analysis of variance was used to test any significant differences between factors identified by the Instructor's Recordkeeping Inventory (IRI) and student achievement scores, identified by the Recordkeeping Achievement Inventory (RAI).

Since the investigation was limited in scope in terms of not having a large random sample, the investigator had to rely on teachers who were willing to participate in this exploratory type of study in a course in recordkeeping. Consequently the investigator found that a variety of teacher factors made no significant impact on student achievement including years of teaching experience, years

of salaried work experience, years of teaching recordkeeping and percent of time devoted to teaching recordkeeping. However, the investigator did find a significant positive relationship between the frequency of adoption of innovative ideas and methods by the teacher and student achievement.

The students indicated that the teachers who employed classroom assignments, job simulation and their own work experiences made more of an impact on student career choice than counseling and career tests.

Since the investigator's conclusions were limited to the teachers and their students identified in the study, further research is recommended employing a more rigorous design in determining the population so any further results may be more conclusive.

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CHAPTER I

INTRODUCTION TO THE PROBLEM

It is fair to assume that something more than the American sense of compromise in education is at work within the current educational community. There has developed a climate in which there has evolved a willingness to alter the existing state of the educational community--even to work at altering it.

The Committee for Economic Development (21:10) has stated that this fact has been brought about by three developments since mid-century which can be listed as crucial in producing an aroused awareness of education as a basic element of American society. First, changes in the technology and values of American society have put a premium on educational attainment as the criterion for entry into the labor force and for assessing a person's worth to society. Second, the rise of racial protest and other minority demands and expectations have led to the recognition of the shortcomings of public education. And third, the national reaction to Sputnik has produced a concern with quality and curriculum in higher education, leading in turn to an interest in innovation at the elementary and secondary level.

As a result, one effect of these developments has been to look at the traditional role of the teacher and the changes this role has been undergoing. That the role is changing is axiomatic, but identifying teachers who are attempting to meet the challenge of these developments is a matter of concern. A variety of innovative educational ideas and methods should be made available to and employed by the teacher in order to effectively meet the learning needs of so many different students. The teacher who is willing to try contemporary educational innovations in order to facilitate student learning and achievement is the type of individual school personnel should be seeking out.

Education has been criticized as being slow when it comes to implementing changes. Miles (54:318) points out that from the research stage to the implementing stage, the classroom, it is often 10 or 20 years or sometimes even longer. Consequently, people are needed in education, in general, and in teaching, in particular, who will not perpetuate this philosophy, but rather take the initiative and make education a viable, exciting and worthwile experience for as many students as possible. Therefore, it is of paramount importance that school administrators and members of the community as well take a long, hard look at the kind of person who they want to teach in their schools. The effect may be significant in terms of student achievement and student occupational aspirations.

The Problem

There is a real need to determine and identify teachers who are self-starters, enthusiastic and seriously concerned about each of his student's learning and achievement. Many teachers are very flexible and exhibit, as Zimmerman (77:6462-6463) notes, such innovative characteristics as assertiveness, imagination and venturesomeness.

On the other hand, even with society's overwhelming concern with improving the school's learning environment and ultimately student achievement, the teacher often finds himself (1) a victim of institutional concerns with maintaining the traditional role of the school or (2) attitudinal concerns which prevent the teacher himself from attempting innovations in the classroom.

Oettinger (58:10) states that without external pressures or alliances the schools themselves rarely initiate innovation or often adopt evasive tactics which take the form of innovating without commitment to its substance. Furthermore, Nasatir (57:295) claims that the school system has a mission woven into its objectives to educate children to behave accordingly. This view is held not only by the school administration, but by the community as well. And this view tends to make school personnel staunch traditionalists with a firm resolution to support the status quo. Evidence of this view is supported by a recent study in which Sieber (70:10) points out that the Bureau of Applied Research found that most parents do not share the educational goals

of their children's teachers. In fact, 56 percent of the parents supported a goal for the school that was different from the goal expressed by the teacher of their children.

Michael (52:268) states that the attitude of the teacher towards education and his relationship to the system is an inhibiting factor towards attempting innovations in the classroom. Many teachers view their job as custodial rather than innovative. Some teachers view innovations with disdain and alarm. They regard the move towards innovation as being motivated by an administrator's preoccupation with success in terms of money and status for himself and not for better education.

Sieber (70:10-12) indicates that the self-image of professionalism projected by the teacher often inhibits innovation because (1) innovation by the teacher will enlarge the discrepancy between their real status and their level of aspirations, (2) teachers often lack an adequate base of knowledge and a limited set of skills, (3) teachers often focus energies into status enhancement activities such as union activitiy, rather than on educational innovations, (4) innovations that are proposed by the administration imply restrictions on professionalism and (5) the difficulty of measuring educational outcomes tends to demoralize some teachers who are not equipped with a great deal of personal self confidence.

Therefore, the problem of this study was concerned with identifying the type of teacher who could overcome these

institutional and attitudinal inhibitors most effectively in terms of student achievement. Specifically, to develop a profile of the innovative teacher who makes the most significant impact in terms of student achievement and career choice.

Purpose of the Study

One premise on which accountability in education is based is whether or not every dollar being spent on education for classroom instruction and curriculum is providing a dollar's worth of benefits in terms of student learning and achievement. In view of this concern, the purpose of this study was to provide professional educators and lay people with specific, tangible evidence of the type of teacher who is providing these benefits and is most successful doing it.

Need for the Study

Although a teacher helps to plan and develop the curriculum, the impact of the curriculum on each of his students is often mixed. This is so because each student brings to the classroom different kinds of abilities and interests which often provide a background for each student to react differently to how the teacher implements the curriculum. So the teacher is often disappointed if student learning and achievement are not what he anticipates.

Therefore, the teacher must modify and adjust the curriculum in order to provide as many students with the chance to experience successful learning and achievement.

He can help to facilitate this by adopting and discovering which educational innovations are interesting to the students as well as being compatible with their interests and abilities.

Consequently, there appears not only to be a need to identify the type of teacher who is making a significant impact in terms of student achievement, but whether or not the adoption of innovative ideas and methods is contributing to student achievement and career choice as well.

Delimitations

1. The study is limited to teachers who specifically teach recordkeeping as well as other high school business subjects from throughout the country.

2. The study utilizes data about the participating teachers as well as students enrolled in a recordkeeping class.

3. The findings cannot be generalized to the population. Conclusions can only be drawn about the teachers and students who participated in the study.

4. The criterion for measuring student achievement will be an administered recordkeeping achievement examination prepared by the investigator.

Assumptions

The investigator made the following assumptions:

1. The teachers will follow the directions for responding to the data gathering instruments.

2. The teachers will follow the directions for administering and handling the Recordkeeping Achievement Inventory and Business Career Choice Inventory.

3. The data received about the recordkeeping instructors and the students will not be affected by small variations in conditions and procedures that may have taken place during the administration of the instruments.

4. The contents of the Recordkeeping Achievement Inventory, distributed by the investigator to each teacher in the study, will be valid and reliable.

Objectives of the Study

1. To provide school administrators with one yardstick in measuring a teacher's suitability for teaching business education courses.

2. To justify the incorporating of innovative ideas and methods in a course in recordkeeping in order to effectively meet student abilities and interests.

3. To justify writing and publishing of innovative ideas and methods from which all business teachers can benefit.

4. To develop a profile of the most effective innovative recordkeeping teacher in terms of student achievement and career choice.

Definition of Terms

The investigator has defined the following terms related to the study:

BCCI--The Business Career Choice Inventory which is designed to identify whether or not the teacher has influenced the student in selecting a career in a business occupation.

Career--The future employment aspirations of each student in the study.

Innovation--Something new, a departure from prevailing practice. An adaption to a changing situation (35:12).

Innovator--A person who adopts new ideas relatively early compared to the rest of his social system (35:12).

IRI--The Instructor Recordkeeping Inventory which is used to obtain general information about the recordkeeping teachers.

ITMI--The Instructor Teaching Methods Inventory which is designed to identify the frequency of adoption of innovative ideas and methods by the recordkeeping teacher.

IWIAI--The Instructor Willingness to Initiate Action Inventory and is designed to identify what kind of innovative ideas and methods the recordkeeping teacher had adopted and was currently using. It is designed to show whether he would have an inclination to adopt and use other innovative ideas and methods.

Newsletter--The format used to provide the instructor with additional innovative ideas and methods for use in the recordkeeping class.

Performance Clinic--Supplemental innovative curriculum material used in conjunction with the recordkeeping textbook chosen by teachers in the study.

Performance Tryout--Supplemental innovative curriculum material which measures achievement used in conjunction with the performance clinic.

RAI--The Recordkeeping Achievement Inventory used to measure the learning and achievement of each student in the study.

Recordkeeping--The course in a high school business education curriculum which is usually offered to students with low achievement and motivational levels. It includes consumer-oriented topics such as taxes, banking, preparation of sales invoices and purchase orders, and insurance. It usually includes an introduction to data processing and accounting as well. It is offered primarily to those students who will eventually seek entry-level jobs and who want to become more knowledgeable consumers.

Student Achievement--The numeric score received by each student on the Recordkeeping Achievement Inventory (RAI).

TOS--The Teacher Opinion Survey designed to determine the degree of innovativeness of each recordkeeping teacher in the study.

CHAPTER II

REVIEW OF RELATED LITERATURE

Introduction

The investigator examined the Reader's Guide to Periodical Literature, Education Retrieval Information Center (ERIC) materials, the Dissertation Abstracts, the Business Education Indexes and the Education Indexes in order to present to the reader a summary of the research and professional literature related to the research study.

Since many of the sources reported similar research findings and opinions, only representative samples are presented in this study. The chapter is organized under the following five major headings:

1. History of Curricular Innovations
2. Strategies for Introducing Curricular Innovations
3. Characteristics of Innovators
4. Teacher Characteristics and Student Achievement
5. Student Career Choice

History of Curricular Innovations

The history of educational innovations is replete with educators wanting to make changes to the curriculum. The strategy of many of the early educational reformers was to organize schools and eventually develop and demonstrate their ideas through practice. In 1620 Bacon (31:4) wrote the

Novum Organum in which he stated that there was a growing revolt against the attitude of mind involved in the practice of the schools and universities. He insisted that it was not in books, but in experience that truth was to be found. All ideas which do not come from experience are ideas which darken men's minds and conceal the true nature of things. In 1775 Pestalozzi (31:23), another European educational reformer, established a school in Neuhof, Switzerland, in order to teach the children of the very poor so they could look upon work as a means of self help and a source of personal freedom rather than as a sign of dependence and degradation. In 1896, John Dewey (76:36) put into practice many of his educational ideas at the University of Chicago.

Not until 1920 was an attempt made to reorganize the curriculum on a broad overall basis. Bobbit (9:7-8) discussed the fact that the curriculum should be developed which should include as its main purpose those activities, which he called educational objectives, to prepare an individual for adulthood. Hopkins (37:22) wanted to provide students with assurances that they would function creatively in an integrated society. He (37:201) suggested that one way of doing this and promoting a better situation for each student would be to have the teacher relate the subject matter of one subject to that of another whenever possible. Charters (17:35) emphasized the use of job analysis in teaching by using (1) introspection (a person who is already

familiar with the job whose duties are to be analyzed), (2) interviewing (asking the individual on the job to give a list of his duties), (3) working on the job (having an individual work and experience the job until he knows it thoroughly) and (4) questionnaires.

However, the problem of installing a course of study which in early educational reform was prepared by scholars presented certain difficulties. It was feared by the members of a community that the curriculum would be influenced by a small group of people who did not have a stake in the education of the children of their community. But, as Saylor and Alexander (2:13-16) mention, with the growing professionalization of teachers after World War I and their involvement in curriculum planning, some of the fears of the community people were allayed.

In the 1940's the group dynamics movement emerged focusing attention on the processes of change rather than on the type of change itself. Miel (53:10-11) pointed out that curriculum change is something more subtle than revising statements written down on paper. To change the curriculum of the school is to change the factors interacting to shape that curriculum, including changes in people's desires, beliefs, attitudes, knowledges and skills. In short, curriculum change is a type of social change, a change in people, not a mere change on paper.

Central to much of the curricular revision in the 1940's were efforts to reorganize the subject matter. Whitehead (73:27-28) stated that the organic curriculum should include the need and relevance of a subject as an important criteria for introduction into the curricula. He (74:29) also concluded that if a subject serves as a foundation for other subjects, it should be included in the curriculum. For instance, Latin is worthy of a place in the curriculum because it enables the student to acquire an exact appreciation of the meaning of words--whether he uses Latin or not.

After World War II there was a noticeable lack of curricular innovation. Miles (54:325) pointed out that Paul Mort studied characteristics of school systems and communities associated with curricular innovations and concluded that the spread of an innovation through the American school system proceeded at a very slow pace.

During the 1950's the educational system came under intense criticism. Bestor (6:2) stated that American education had become nothing more than a game because the educators had failed to sponsor programs and ideas which imparted good citizenship and the ability to think to each student. Rickover (61:6) had enough foresight to realize that people must be properly educated because of the terrific requirements of America's spiraling scientific and industrial civilization. He (61:16) concluded that the educational system was suffering from "intellectual Toryism" or an inflexibility

which does not prepare young people for life in a constantly changing world--especially for the talented and creative people. These and other criticisms fostered a climate which paved the way for curriculum changes in the late 1950's and 1960's.

A number of innovative projects and activities were initiated in the 1950's which sought to reform the subject fields. As Miles (54:2) noted, all sorts of innovations including set theory, team teaching and trimester plans were advocated vigorously, installed and sometimes evaluated. But not until 1957 with the orbiting of Sputnik did resources start flowing towards the schools for reforming the curriculum.

In the 1960's there was an effort on the part of a great variety of groups, especially outside the school system, to create curricular innovations. One example was the federal research laboratories which, as Gideonse (29:131-133) pointed out, were designed to conduct basic research related to the field of education in such disciplines as psychology, sociology, history, political science, economics and philosophy.

Strategies for Introducing Curricular Innovations

This section deals with (1) The Perception of Innovations, (2) The Characteristics of Innovations, (3) The Adoption Process of Innovations and (4) The Acceptance of Innovations.

Perception of Innovations--Rogers (62:303) noted the concept of perception is a key dimension in understanding the dissemination of innovative ideas and methods. He pointed out that an innovation may be regarded as advantageous by one teacher and not another. This is so because it does not matter whether or not an innovation is better or worse than the one it is going to replace, but whether or not the teacher perceives it to be better or worse. House and Clinton (19:32) support Rogers' contention by stating that how a teacher perceives a new idea or thing is as important as the thing or idea itself. Innovation appears initially to be a mental process followed by a physical act of implementation. In fact, Daughty (22:2724) found that teachers perceived themselves as relatively independent, autonomous, professional individuals who felt their efforts almost entirely determined the success of the innovation.

Rebueno (60:1808), using Minninberg's innovative activity questionnaire, also drew the same conclusion about teacher independence. He pointed out that teachers who expressed a high need for independence exhibited a greater degree of innovativeness. He also concluded that if a teacher perceived a high degree of participating in decision making about an innovation, he would be more likely to use the idea.

Smith (72:64) suggests that perceiving is considered as part of all conscious behavior and is recognized as the first step in any learning act. In this sense, perceiving means to identify with.

House and Clinton (19:20), in their review of literature, turn to the field of psychiatry and draw on the opinion of Hartley Cantril. Cantril points out that how a person perceives an innovation depends in large part on (1) the assumptions he brings to a particular situation in the classroom, (2) whether he feels the innovation serves a purpose and (3) how the innovation is directly related to how he perceives the world.

The Characteristics of Innovations--The characteristics of an innovation have a great deal to do with whether or not it is adopted. Or as Rogers (62:134-135) points out, it is the characteristic of an innovation as perceived by the potential adopter that really matters.

Wasson (73:52-56) utilized case examples to show that the ease or difficulty of introducing innovations depends basically on the nature of the "new" in the innovation--the "new" is what the person views as the outcome of the introduction of the innovation.

Ross (64:16-32) attempted to determine reasons for the rapid adoption of driver education programs by high schools. He pointed out that it takes 15 years for an educational innovation to be adopted by the first three percent of the public schools while 87 percent of the schools in the study adopted driver training in the first 15 years. He noted that driver education was adopted so rapidly because of promotion by car dealers, insurance companies, and the

American Automobile Association. The need for driver education had also been brought to national attention by high accident rates. He therefore concluded that the seriousness of a need for an innovation is an indication of the relative advantage of the new idea.

Menzel (51:704-713) did an analysis of several attributes of innovations in the medical field in order to find criteria for classifying innovations. He found the best description of the characteristics of innovations to be communicability and awareness.

Clinton and House (19:23) found that it was possible to select the best predictors of acceptance of innovations from a set of attribute variables. Efficiency of an innovation was perceived as the single most important attribute looked for in acceptance of an innovation. However, Rogers (62:124) seems rather apprehensive in discussing what dimensions of an innovation are relevant and emphasizes the need for a comprehensive set of characteristics of innovations which are mutually exclusive and as universally relevant as possible.

The Adoption Process of Innovations--In the adoption process, Rogers (62:81-86) claims every individual passes through five steps before adopting a new idea.

(1) The Awareness Stage. During this stage an individual or group may be exposed to a new idea without being exposed to complete details.

(2) The Interest Stage. During this stage the individual or group has indicated some interest in the innovation and seeks more information about it.

(3) The Evaluation Stage. During this stage the individual mentally applies the innovation and decides whether or not to try it.

(4) The Trial Stage. During this stage the innovation is used on a small scale.

(5) The Adoption Stage. During this stage the decision is made whether or not to continue using the innovation.

Rogers (62:82) further contends that most researchers have conceptualized the awareness stage as a random or nonpurposive act. That is, a teacher becomes aware of an innovation by accident and does not seek out an innovation which he does not know exists. Hassinger (33:52-53), however, has criticized this assumption of the nonpurposiveness of the awareness stage. He argues that awareness must be initiated by the teacher and is not a passive act. He points out that information about innovative ideas does not create awareness unless the teacher has a problem or need that the innovation promises to solve.

Barnett (3:18) takes a different point of view by stating that if a teacher is aware of a new idea then this creates a need for the innovation. Subsequently, the teachers relates to an innovation by identifying with the

innovation or by establishing a mental configuration of the innovation. If he is not successful, then he will usually not adopt the innovation.

Dionne (24:120-121) applies Barnett's ideas to explain the reluctance of the teacher to adopt innovations in a school system. He provides a conceptual framework outlining four specific segments and how each is used to eventually solve the problem as shown below.

Goal Attainment	Adaptive
Integrative	P.M.T.R.

1. The Goal Attainment segment contains all those processes which the teacher sees in his own mind as the approach to establishing and accomplishing goals.

2. The Adaptive segment represents the manner in which the teacher is able to conceptualize how to accomplish the goals.

3. The Pattern Maintenance Tension Reduction (P.M.T.R.) segment is whether or not the teacher is successful in establishing a mental configuration about the innovations he is going to use to accomplish the goals.

4. The Integrative segment represents ultimately the total integration of the innovation into the curriculum.

Lionberger (46:89) states that time and influence considerations are important in the individual adoption process because individuals do not ordinarily try or adopt new practices as soon as they learn about them. He says that the potential innovator has to be "exposed" to different media such as journals and mass communication in order to create a sense of awareness and an interest in educational innovations. Subsequently, the potential innovator then must relate the idea to his own situation and evaluate it.

The Acceptance of Innovations--Adopting an innovation allows the innovator to work towards acceptance of it as represented by the mental configuration. Thus, the process of adopting the innovation first involves the attempt to implement an innovative idea in the classroom. If the process is successful then the innovation is accepted.

Characteristics of Innovators

Since there is a myriad of research studies concerned with the characteristics of innovators, the following is a small, but representative, sample of these studies.

Ramer (59:782-783A) studied the relationship of belief systems and personal characteristics of chief school administrators and attitudes toward educational innovations. The sample for this study consisted of all the chief school administrators of public schools in the eight counties of western New York State. The data used in the study was derived from the Educational Innovation Attitude Scale, developed by Ramer, and the Dogmatism Scale, developed by

Rokeach, which measured the extent to which belief systems are open or closed. The last instrument was a personal data sheet. He found that age and amount of formal education of the administrator was significantly related to receptiveness to innovations.

Childs (18:622A) examined the relationship between the nature of belief systems of individuals in school districts and the adoption of new educational practices. The study included eight school districts selected by an innovativeness scale based on data reported to the Michigan Department of Public Instruction in the Five-Year Survey of Progress on Michigan School Districts. He hypothesized that a greater number of open belief system teachers are in innovative school districts than is the case with teachers in non-innovative school districts. He concluded the hypothesis was true.

Lawrence (43:1397A) studied personality characteristics of school superintendents who implement innovations. He used Cattrell's Sixteen Personality Factor Questionnaire with the superintendent's score on an innovation scale. A significant correlation was found between personality and willingness to innovate. Those personality characteristics that contributed to this significance were (1) emotional stability, (2) serious mindedness, (3) venturesomeness, (4) tough mindedness, (5) trustingness and (6) ability to relax.

Jenkins (40:903) examined the characteristics associated with innovative behavior in teachers. Two criteria, one innovative and the other non-innovative, were selected by a modified Q-sort technique. Standardized tests and personal data sheets served as sources of data for the study. The test instruments were selected in terms of their ability to measure teacher's attributes including (1) personality, (2) need achievement, (3) non-intellectual traits and (4) self concept. In all, there were twelve variables which appeared most likely to discriminate between innovative and non-innovative teachers. Jenkins concluded that innovative teachers differ from non-innovative teachers in terms of certain personality and intellectual characteristics. They appear to be clearly superior to non-innovative teachers in originality and ideas. They also display a superior knowledge of the principles of "good" educational practices and have a more thorough grounding in a variety of academic disciplines. Innovative teachers appear to be considerably more dominant, adventurous, disorderly, radical, flexible and more complex than non-innovative teachers.

McLimans (48:2952-2953) randomly selected teachers from six matched school systems in Wisconsin in order to see if there was any relationship between teacher's innovative characteristics and (1) the degree to which they implemented curriculum change, (2) the extent to which their perceptions of the decision-making structure in their school systems were in agreement, and (3) the degree to which they felt

that they were involved in the decision-making process in the school system.

The data was gathered through the use of the Decision Point Analysis Instrument, the Curriculum Implementation Index used in the U.S.O.E. project Number 5-043, and a teacher innovativeness scale developed by McLimans. He concluded that (1) travel out of the community and number of leadership positions held had a significant positive relationship to curricular implementation, (2) female teachers ranked higher than male teachers in curricular implementation and innovativeness, and (3) teachers who had been employed by the school system from nine to fourteen years were the most likely to be innovative and to implement the curriculum.

Herlig (35:2950A) investigated differences between innovators and non-innovators in education from a population of 154 teachers from two suburban Kansas City senior high schools. Administrators and teachers rated teachers at each school in terms of their behavior relative to four behavioral characteristics distilled from the literature on innovation. The administrator's ratings and the teacher's ratings were combined to produce a composite rating score. The fifteen lowest ranking teachers became the innovative group and the fifteen highest became the non-innovative group.

Herlig concluded, after testing five hypotheses, that (1) innovators showed a lesser degree of conforming to educational statements on an agree-disagree continuum,

(2) innovators expressed different opinions about educational statements on a latent innovator scale, (3) innovators displayed a greater knowledge and use of selected educational practices than non-innovators, (4) innovators tend to be more adventurous as identified by the Choice Dilemna Form, (5) innovators tend to be younger than non-innovators, and (6) innovators can be expected to have taught fewer years in their present school system and taught in fewer school systems than non-innovators.

Zimmerman (77:6462-6463) identified the personality characteristics and school-related perceptions that differentiated the innovative secondary school teacher from the non-innovative teacher. His population was rural high school district teachers in North Dakota who had participated in the North Dakota Statewide Educational Needs Assessment Study.

Zimmerman used the Purdue Teacher Opinionaire as a measure of the teacher's school-related perceptions, the Teacher Form as a means of selecting groups of innovative and non-innovative teachers and the Sixteen Personality Factor Questionnaire to assess the characteristics of the teacher's personalities. He found that innovative teachers were more venturesome, imaginative, and assertive than non-innovators.

The factors of satisfaction with teaching and approval of school facilities as well as morale were positively

correlated with innovative teachers. Rapport with peers was found to be negatively correlated with innovativeness.

Those individuals that were identified as innovators were younger, had more teaching experience and a better salary.

Grant (30:676A) explored certain personality characteristics of 253 secondary high school teachers located at seven consecutive school building sites visited by the Wisconsin Audio Visual Education Demonstration Project team. He hypothesized that there was no significant difference for fourteen personality traits among male and female high school teachers classified as acceptors or rejectors of the newer educational media as measured by the Edwards Personal Preference Schedule.

After administering the Wisconsin Audio Visual Education Demonstration Utilization Scale to determine the acceptor and rejector categories, he found that there was a higher number of acceptors than rejectors at school sites located in the rural areas. There was a substantial number of both acceptors and rejectors in the larger metropolitan areas.

Forman (28:3087) investigated significant personality and situational measures between 157 teachers who applied for and received a mini-grant from the State of New Jersey in the teacher innovation program and 157 who applied for and did not receive the grant. The former group he defined as most innovative and the latter as least innovative. Using a sixteen one-way analysis of variance and chi-square to

test his hypotheses, he concluded that the most innovative teachers were more satisfied with their jobs, were more custodial and were more abstract in open climates than the least innovative teacher.

Russell (65:3884) was concerned about the identification of vocational teachers who were likely to be the first to implement changes in the instructional program. From a sample of 250 vocational educators, in which 125 comprised the early adopter group and 125 comprised the laggard group, eight attitude subscales were designed to measure specific change orientation of vocational teachers relating to specific goals and functional areas of vocational education. The responses to the attitude statements were factor analyzed to determine the most efficient items for measuring change orientation.

Russell concluded that change orientation is measurable by identifying 21 items that were a powerful discriminator between the early adopter and laggard groups. Teachers who had high change orientation scores were less dogmatic, less conservative and more cosmopolitan in their points of view, as well as having twice as many unusual or unique features in their instructional programs.

Teacher Characteristics and Student Achievement

A great deal of research on the effectiveness of the teacher in the classroom is based on the notion that whether a teacher is effective or not can be measured by student

achievement. Another prevailing idea is the fact that the teacher who makes an impact on learning in one skill area will do the same in another skill area. Mitzel (55:1481-1486) points out that the evidence supports the idea that teaching effectiveness is multi-dimensional.

In 1945 Helfritch (34:194-199) completed a study and drew conclusions to support Mitzel. He measured 24 teacher traits for 7th and 8th grade teachers including mental ability, certain personality traits, supervisory ratings, knowledge of subject matter, social attitudes and teaching attitudes to see if there was any single variable that related significantly to student achievement. He found evidence that the amount pupils learn appears to be unrelated to any single variable.

However, subsequent studies appear to refute Helfritch's findings. Guthrie (32:30) did a review of literature of the effectivensss of teachers and found conclusions to the contrary. Guthrie (32:33) found, that in a study conducted under the supervision of Samual Goodman in 1945, that among a number of characteristics it was found that teachers with five or more years of employment in the school district as well as those who attempted to relate the subject matter under consideration to the interests and abilities of the students had related significantly to student performance scores.

In 1951 Ryans (66:1486-1491) concluded that experience is associated with effective teaching, with the 5-9 year

experience group being significantly higher in effectiveness in terms of student achievement than teachers with more or less experience. Bohn, et. al., (10:8) did a study with 110 elementary science teachers and agreed with Ryans that 9 years of teaching experience related positively with success in teaching an innovative science curriculum. They concluded by pointing out that more experienced teachers are more intuitive about children's thought processes and as a result, better able to judge what learning has taken place.

Guthrie (32:37) also reviewed the study by James Coleman and his staff who attempted to control statistically for the student's home background and community environment in order to determine the effect of the teacher on the achievement scores of the students. Coleman and his staff concluded that achievement score results increased in relation to the verbal ability of the teacher. He defined verbal ability as the general intelligence level of the teacher. The more verbal ability skilled the instructor was, the more adept he was at such tasks as finding ways to motivate students, to adapt materials to the student's ability levels and to communicate in ways which made the subject matter more understandable. Mayberry (50:2125) appeared to reach the same conclusion as Coleman by stating that students with the highest achievement scores had an instructor with positive attitudes towards students and towards course material.

Guthrie (32:41-43) also reported on a study done by Bowles which was based on a sample of 12th grade black male students constructed from data compiled by the Coleman Commission. Bowles found that the average amount of time a teacher spends in guidance activities was significantly related with student scores on tests of verbal ability. Bowles, using Project Talent Information, also found a significant relationship between the amount of teacher's graduate preparation and the student's performance on a reading test. Bowles also co-authored a study with Henry Levin in which they attempted to correct some of the Coleman reports procedures. Again, the analysis was conducted with 12th grade black students. They concluded that teachers' salaries and teachers' verbal ability were significantly related to student achievement.

Guthrie (32:44) also reported on a study done by Erik Hanushek at the Massachusetts Institute of Technology. The latter concluded that there was a significant relationship between the achievement scores of 471 white elementary school and 242 black elementary school children and the teachers' verbal ability and years of teaching experience.

Student Career Choice

Numerous studies have identified a host of variables which have some significance on student career choice or aspirations. The following studies identify some of these variables.

Shann (69:197-205) focused on the differences of interest patterns as a career determinant of 569 all male vocational high school students who were classified according to the trade for which they were enrolled. Data bout interest patterns were obtained using a 1-9 self rating scale on a Kuder General Interest Survey. Using Jones Discriminant Analysis technique, she concluded that the study of the interest patterns as a predictor of actual trade choice was of no practical value.

Berman (5:173-177) studied 545 graduating all-girl public high school students in New York City. He distributed a questionnaire to determine the ethnic group of each student and whether or not each was on the honor roll. He found that those who were not on the honor roll, which included mostly black and Puerto Rican girls, desired to enter an occupation where status was acquired with a minimum of education. On the other hand, the honor roll students, which included more than 75 percent Chinese and white students, had occupational aspirations that were different. They showed a preference for more college-oriented occupations. He therefore concluded that socio-cultural factors, such as ethnic group membership, limited perspectives of occupational goals both in the range of occupational choice and in the desire for higher occupational status.

Using Holland's classification system, Williams (75: 39-46) attempted to show the relationship among 145 randomly

selected male students at the University of North Dakota. Data for life values was collected using the Allport-Vernon Lindzey (AVL) study of values. Data for work values was collected using the Occupational Values Indicator (OVI) and data for personality characteristics was collected using the Sixteen Personality Factor Questionnaire. Using discriminant analysis she found that the subjects had life, work and personality values significantly related to occupational choice. She concluded that the findings supported Holland's position that a person, in making a vocational choice, searches for environments which satisfy personal orientations and needs.

Slocum (71:142) reviewed the ideas of sociologists and focused particularly on occupational decision making. In particular, he discussed the imagining or the process of "playing at" an occupational role. This is how an individual imagines the requirements and rewards of a particular role are. He concluded by pointing out that it is largely a covert process and does not necessarily mean the person assumes the role of another person; but that it only helps the individual to select one role from alternative roles.

Schultz and Blocker (68:595-598) wanted to determine if a relationship existed between occupational choice of 135 12th grade boys and self satisfaction or how a person identifies with his ideal self concept. Data about occupational choice was collected using the Occupational Level (OL) Scale of the Strong Interest Blank. Data about self

satisfaction was collected using a 180-item list of words and phrases using Cattrell's trait clusters.

Using the product-moment correlation coefficient to compute the relationship between OL scores and transformed self-satisfaction scores, they concluded that a person's level of occupational choice and his evaluation of himself were significantly related.

CHAPTER III

PROCEDURES

Introduction

Since the study employed a considerable amount of time and involved periodic mailings to the teachers, the investigator prepared an activity chart in order to present to the reader a clear and concise sequence of events. A copy of the activity chart is illustrated in Figure 1.

This chapter is divided into four main topics which are noted on the activity chart. They include:

1. Preparatory Activities
2. Developmental Activities
3. Process Activities
4. Summary Activities

Preparatory Activities

In February, 1972, the investigator spoke with his adviser about the possibility of sending recently-developed innovative material to recordkeeping teachers throughout the United States as part of this study. The innovative materials had been developed as supplemental materials to be used in conjunction with teaching recordkeeping.

The investigator secured a list of 92 recordkeeping teachers from throughout the United States as possible

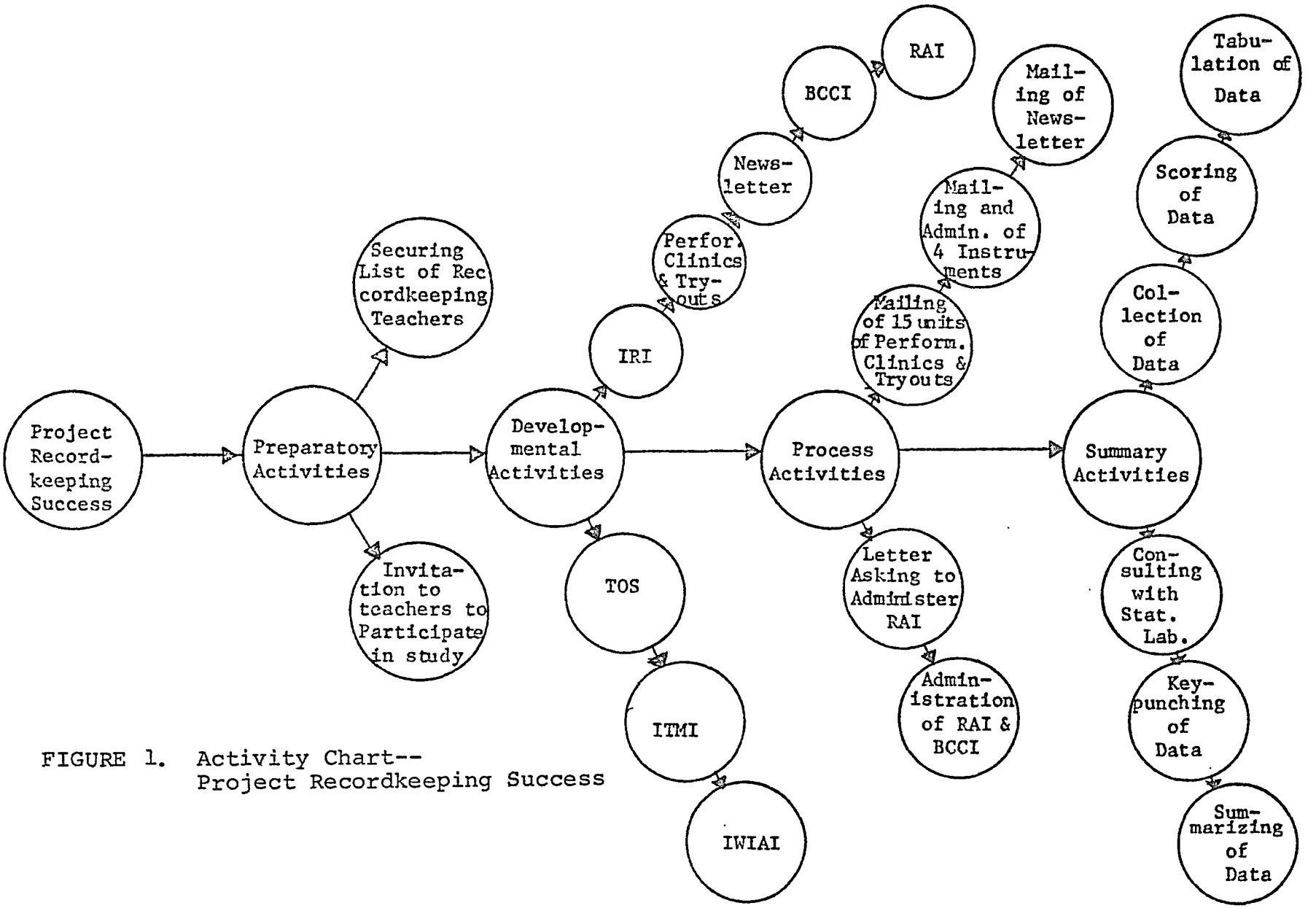

FIGURE 1. Activity Chart--
Project Recordkeeping Success

participants in the study. Each one was invited, by letter, to participate in the study. The letter also mentioned that supplemental innovative materials and tips and suggestions would be sent free. A copy of the invitation letter can be found in Appendix A.

In addition, a questionnaire, the IRI, was sent to each teacher asking for demographic and general information about themselves, as well as about the recordkeeping course. The IRI also included a place for the teachers to indicate if they would accept the invitation. The IRI can be found in Appendix B. A summary of the teachers responding favorably to the invitation to participate is reported in Table 1.

TABLE 1

NUMBER OF INSTRUCTORS, BY STATES, RESPONDING FAVORABLY TO INVITATION TO PARTICIPATE IN THE STUDY

STATE	NUMBER OF TEACHERS
Arizona	3
California	3
Colorado	4
Florida	1
Maine	1
Massachusetts	3
New Jersey	2
New York	1
Ohio	1
Oregon	4
Pennsylvania	2
TOTAL	25

After the list of teachers was summarized, each one was sent a letter thanking him for accepting the invitation. The letter included the fact that performance clinics and tryouts would be sent periodically along with tips and suggestions. Each teacher, in turn, would be expected to fill out and return an instrument which would be enclosed with the materials. A copy of the letter can be found in Appendix C.

On October 16, 1972, the investigator sent a follow-up letter asking each teacher to fill out an instrument which was enclosed. A copy of this letter can be found in Appendix D. It was expected that any teacher who did not return the instrument sent in the previous "batch" of materials would not receive any subsequent materials.

On November 7, a second follow-up letter was sent requesting the teachers to fill out an enclosed instrument. A copy of this letter can be found in Appendix E.

The investigator found that some of the teachers who elected to participate initially did not elect to continue after being sent the first batch of materials. The investigator did not choose to determine the reason why and thus decided to continue with eighteen teachers. A summary of the teachers who elected to participate after the second follow-up letter is reported in Table 2.

TABLE 2

NUMBER OF TEACHERS BY STATES WHO EVENTUALLY PARTICIPATED IN THE STUDY

STATE	NUMBER OF TEACHERS
Arizona	3
California	1
Colorado	4
Florida	1
Maine	1
Massachusetts	3
New Jersey	1
Oregon	3
Pennsylvania	1
TOTAL	18

Developmental Activities

Instructor's Recordkeeping Inventory--The purpose of the Instructor's Recordkeeping Inventory was to obtain demographic and general information about the recordkeeping teachers, as well as how the teacher felt about the recordkeeping course. The instrument included years of teaching experience, years teaching recordkeeping, percent of teaching load devoted to recordkeeping, preference in teaching assignments, how important each teacher felt recordkeeping was to the various business majors, etc. The instrument (16:133) was adopted and modified from Carsten's Instructor Business Mathematics Inventory. A copy of the Instructor's Recordkeeping Inventory can be found in Appendix B.

Performance Clinics and Tryouts--The performance clinics were supplemental innovative materials that were developed and used to improve student learning and achievement. The performance tryouts were supplemental innovative materials used in conjunction with the performance clinics to measure student achievement. Each teacher received enough performance clinics and tryouts for each student for 15 units. A teacher's key was also included. A copy of one clinic and one tryout and a teacher's key can be found in Appendix F.

Newsletter--Supplemental innovative tips and suggestions were developed, published and distributed to the teachers in a newsletter format. Some ideas included involving other students, businessmen and school staff members in activities related to recordkeeping topics. Another idea included hanging a mirror on the wall so each student could see what kind of image he was projecting to potential employers and improve it, if necessary. Other tips and suggestions included having students write out a furniture inventory of their home and filling out an employment application. A copy of the newsletter can be found in Appendix G. The teachers were also sent a letter which provided room for them to "jot" down an innovative idea or suggestion which could be shared by all the teachers. Enough suggestions were submitted for one newsletter. A copy of the letter and the newsletter can be found in Appendix H.

Teacher Opinion Survey--The purpose of the Teacher Opinion Survey was to obtain information about the degree

of innovativeness of each teacher in the study. The instrument was developed by Dr. Earl Bell Russell at The Ohio State University in 1971 and specifically shows the degree of change orientation or predisposition towards change of vocational teachers. Dr. Russell determined that the change orientation of vocational teachers is reliably measurable. He pointed out that a 21 item statement general factor scale, developed by factor analyzing over 2,500 responses by vocational teachers to specific attitude statements, was a powerful discriminator between early adopters and laggards. A copy of the Teacher Opinion Survey can be found in Appendix I.

Instructor Willingness to Initiate Action Inventory--The purpose of the Instructor Willingness to Initiate Action Inventory was to identify whether or not the teacher had adopted and was using specific innovative ideas or methods, and whether he would have an inclination to do so in the future. The instrument identified a variety of innovative activities including using self-evaluation forms, class survey questionnaires, flowcharts and business machines. It also included having students relate work experiences to other members of the class. The instrument was developed from a variety of sources dealing with motivation of students. A copy of the instrument can be found in Appendix J.

Instructor Teaching Methods Inventory--The purpose of the Instructor Teaching Methods Inventory was to identify

the frequency of adoption of innovative methods and ideas by the teachers. The instrument identified such innovative methods as role playing, games, cartoons and projects, as well as making students aware of different recordkeeping jobs and the relevance of the work students are asked to do. The teachers were also asked to indicate how many students they had in their class. A summary of these responses is reported in Table 3. A copy of the instrument can be found in Appendix K.

TABLE 3

SUMMARY OF NUMBER OF STUDENTS PARTICIPATING IN THE STUDY

STATE	NUMBER OF TEACHERS	NUMBER OF STUDENTS
Arizona	3	155
California	1	30
Colorado	4	185
Florida	1	70
Maine	1	50
Massachusetts	3	75
New Jersey	1	50
Oregon	3	132
Pennsylvania	1	35
TOTAL	18	782

Business Career Choice Inventory--The purpose of the Business Career Choice Inventory was to identify whether or not the instructor had influenced each student in selecting a career in a business occupation. The Business Career Objective Scale, developed by Carstens (16:123-125) was adopted to gather data from the recordkeeping students about their career plans.

After consulting with business education teachers at Poudre High School, Fort Collins, Colorado, the instrument was modified so the questions would be applicable to the high school business education students. The teachers then agreed to administer the instrument to a business education class. After administration, a discussion was held with the teachers in order to incorporate any additional changes. Using these changes, based on the recommendations of both the students and the teachers, the final draft of the instrument was prepared. A copy of the instrument can be found in Appendix L.

Recordkeeping Achievement Inventory--In December, 1972, each instructor was asked by letter if he would administer a recordkeeping achievement examination to each student. From the responses to the letter, the investigator determined that approximately 620 students would take the examination. This figure varies considerably from the original 782 students who participated in the study (See Table 3). This is due, in part, to a number of reasons. A few teachers could not complete 15 chapters of the recordkeeping textbook and were

reluctant to administer the examination. Some students dropped the course and the course was offered in some schools on a one-semester basis. One teacher in Oregon simply refused to return the examinations after administration so the investigator did not send him the examinations. A teacher in Colorado started the course in January and the investigator felt it would be unfair to ask her to administer the examination.

Subsequently, the investigator prepared the initial draft of the examination. The examination included one problem from each of the fifteen units of the performance tryouts. After preparation it was submitted to a business education teacher at Fairview High School in Boulder, Colorado, for his review and comments. When the original draft was returned, the investigator noted the comments and suggestions and made appropriate changes. The final draft was then drawn up and copies were distributed to each teacher. The number of students receiving the examination is summarized in Table 4. A copy of the Recordkeeping Achievement Inventory can be found in Appendix M.

Process Activities

The teachers who responded favorably to the invitation to participate in the study were sent the first five units of the performance clinics and tryouts and an instrument to fill out and return. A newsletter followed a few weeks later. The teachers were directed to fill out the instrument and return it in a stamped pre-addressed envelope.

TABLE 4

SUMMARY OF THE NUMBER OF STUDENTS RECEIVING THE RECORDKEEPING ACHIEVEMENT INVENTORY

STATE	NUMBER OF TEACHERS	NUMBER OF STUDENTS
Arizona	3	135
California	1	40
Colorado	3	100
Florida	1	70
Maine	1	60
Massachusetts	3	66
New Jersey	1	35
Oregon	2	77
Pennsylvania	1	37
TOTAL	16	620

In order for the teachers to receive subsequent performance clinics and tryouts as well as the newsletter, the instrument enclosed in the previous batch of materials had to be filled out and returned to the investigator.

Eventually the investigator sent performance clinics and tryouts for 15 units as well as four newsletters to most of the teachers. The investigator, in turn, received four instruments filled out by most of the teachers including the IRI, the ITMI, the IWIAI and the TOS.

Included in the last batch of materials (Units 11-15) was a letter asking each teacher to indicate if he would administer a recordkeeping achievement examination covering

Units 1-15. A stamped pre-addressed envelope was included for the teacher to return the letter. A copy of the letter can be found in Appendix N.

In March, 1973, those teachers who said they would administer the examination were sent the Recordkeeping Achievement Inventory and Business Career Choice Inventory for as many students as they indicated in the letter, as well as a letter of instructions which can be found in Appendix O.

Also included in these materials was a letter thanking each teacher for their continued interest and participation in the study. A copy of this letter can be found in Appendix P.

Summary Activities

The investigator received the final batch of Recordkeeping Achievement Inventories and Business Career Choice Inventories on June 16, 1973. A summary of the number of examinations returned to the investigator can be found in Table 5.

In conjunction with personnel from the statistical laboratory at Colorado State University, scoring of each instrument for statistical analyses was then begun. The following paragraphs are a summary of the procedures involved in scoring each instrument.

TABLE 5

SUMMARY OF THE NUMBER OF RECORDKEEPING ACHIEVEMENT INVENTORIES RETURNED TO THE INVESTIGATOR

STATE	NUMBER OF TEACHERS	NUMBER OF STUDENTS
Arizona	3	59
Colorado	2	43
Florida	1	15
Maine	1	47
Massachusetts	2	34
New Jersey	1	27
Oregon	2	71
Pennsylvania	1	26
TOTAL	13	322

Instructor's Recordkeeping Inventory--Coding by the investigator was not necessary for the numeric responses to the IRI by the teachers. Coding was only necessary for non-numeric reponses. For example, if the teacher rated the satisfaction and enjoyment from teaching recordkeeping as great, then this response was coded 4. If the teacher rated it average, then this response was coded 3, and so forth. When coding salaried work experience, the investigator used a similar format. A response to none was coded 6. A response to 1-6 months was coded 5, and so forth.

The investigator had to modify one section of the instrument so it could be adopted for analysis. When coding the preferences in teaching assignment, the teacher was categorized as either preferring to teach the clerical, secretarial, or bookkeeping/accounting sequence. This was determined by the teacher's first preference in teaching assignment. The sequences (56:257-261) were selected from Principles of Business Education by Tonne and Nanassy.

Teacher Opinion Survey--The numeric responses to the TOS were summed and a total numeric TOS score was obtained for each teacher. The higher the numeric score, the greater the degree of innovativeness of each teacher.

Instructor Willingness to Initiate Action Inventory--The responses to the IWIAI were coded 1 if the teacher was currently using an innovative idea or method, coded 2 if the teacher might use the innovative idea or method and coded 3 if the teacher was not using the innovative idea or method. The responses were then summed and a total IWIAI score was obtained for each teacher. The higher the numeric score the higher the teacher's willingness to adopt educational innovative ideas and methods.

Instructor Teaching Methods Inventory--The teachers responded to a one through five continuum scale regarding the frequency of adoption of an innovative idea or method. A one meant never and a five meant often. For example, if the teacher circled a 1, this meant the teacher never adopted the idea or method. If the teacher circled a 2

this meant the teacher adopted the idea or method rarely, and so forth. The responses were then summed and a total ITMI score was obtained for each teacher. The higher the numeric score the higher the teacher's frequency of adoption of innovative ideas and methods.

Recordkeeping Achievement Inventory--The RAI consisted of 15 problems. The teachers were directed to test their students on only those parts of the examination that they had covered in the course. Many teachers "skipped around" emphasizing particular chapters, and other teachers simply were not able to finish all 15 chapters because of time and/or student limitations.

The investigator found that most students did not complete all 15 problems. Therefore, the investigator determined the number of problems each student did complete and marked each test accordingly. Each test was based on 100 percent regardless of the number of problems completed. A numeric RAI score for each student was then obtained.

Business Career Choice Inventory--Most of the responses to the BCCI were non-numeric and therefore required coding by the investigator. The exceptions were the student's age and the salary each student initially expected to receive when he entered the occupation of his choice. The latter still had to be coded either a 1, 2, 3, or 4, depending on the student's selection, for analysis purposes.

All other responses were coded 1-4. No response was left blank. When the student selected high school business courses that he had completed or will have completed by the time he finished high school, the responses were coded a 1. No response was left blank. Similarly, when the student indicated particular innovative ideas and methods used by the teacher to influence his career choice these were also coded a 1. No response was left blank.

When the coding for all instruments was completed, the investigator discussed with personnel from the statistical laboratory the method(s) for analyzing the data. Simple correlation coefficients and analysis of variance were the statistical methods employed to test the relationships and hypotheses developed by the investigator.

The investigator then turned the coding sheets over to the statistical laboratory for keypunching and analysis. The results of the statistical as well as descriptive analyses are reported in Chapter 4.

Summary

The review of the literature pointed out that there had been a considerable number of research studies dealing with innovative teachers and student achievement. However, the investigator was not able to identify any specific studies dealing with innovative teachers and student achievement.

Consequently, the investigator developed the following null hypotheses and tested each one for significance of differences using analysis of variance.

1. There is no significant difference between the mean scores achieved on the RAI by the high school recordkeeping students and the total number of years teaching recordkeeping.

2. There is no significant difference between the mean scores achieved on the RAI by the high school recordkeeping students and the total number of years teaching.

3. There is no significant difference between the mean scores achieved on the RAI by the high school recordkeeping students and the teacher whose first teaching preference is the secretarial sequence.

4. There is no significant difference between the mean scores achieved on the RAI by the high school recordkeeping students and the teacher whose first teaching preference is the clerical sequence.

5. There is no significant difference between the mean scores achieved on the RAI by the high school recordkeeping students and the teacher whose first teaching preference is the bookkeeping/accounting sequence.

6. There is no significant difference between the mean scores achieved on the RAI by the high school recordkeeping students and how important the teacher feels recordkeeping is to the various business majors.

7. There is no significant difference between the mean scores achieved on the RAI by the high school recordkeeping students and how much satisfaction and enjoyment the teacher gets from teaching recordkeeping.

8. There is no significant difference between the mean scores achieved on the RAI by the high school recordkeeping students and the years of salaried work experience of the teacher.

9. There is no significant difference between the mean scores achieved on the RAI by the high school recordkeeping students and the percent of time devoted to teaching recordkeeping.

The Pearson Product Moment Correlation Coefficient was also employed to test the following relationships:

10. Between total years teaching experience and the mean TOS score of the teachers.

11. Between total years teaching recordkeeping and the mean TOX score of the teachers.

12. Between the percent of time devoted to teaching recordkeeping and the mean TOS score of the teachers.

13. Between total years teaching experience and the mean RAI score of the students.

14. Between total years teaching recordkeeping and the mean RAI score of the students.

15. Between the percent of time devoted to teaching recordkeeping and the mean RAI score of the students.

16. Between the mean TOS score and the mean ITMI score of the teachers.

17. Between the mean TOS score and the mean IWIAI score of the teachers.

18. Between the mean TOS score of the teachers and the mean RAI score of the students.

19. Between the mean ITMI score of the teachers and the mean RAI score of the students.

20. Between the mean IWIAI score of the teachers and the mean RAI score of the students.

21. Between the mean ITMI score and the mean IWIAI score of the teachers.

22. Between the total years teaching experience and the mean IWIAI score of the teachers.

23. Between the total years teaching recordkeeping and the mean ITMI score of the teachers.

24. Between the total years teaching recordkeeping and the mean IWIAI score of the teachers.

25. Between the percent of time devoted to teaching recordkeeping and the mean ITMI score of the teachers.

26. Between the mean IWIAI score and the TOS score of the teachers.

27. Between the mean IWIAI score and the mean ITMI score of the teachers.

28. Between the mean ITMI score and the mean TOS score of the teachers.

29. Between the percent of time devoted to teaching recordkeeping and the mean IWIAI score of the teachers.

30. Between the years total teaching experience and the ITMI score of the teachers.

In addition, tables are included to report the results of statistical and descriptive analyses. When reporting descriptive analyses, the teachers will be categorized according to the degree of innovativeness as measured by the TOS score. The tables and their explanation are given in Chapter 4.

CHAPTER IV

FINDINGS

This chapter contains the statistical analyses, description and interpretation about the teachers and their impact on student achievement. The investigator also employed descriptive analyses to point out and describe noteworthy relationships about the teachers and their students in terms of student achievement and student occupational aspirations.

Therefore, the investigator divided the chapter into two main sections--statistical and descriptive. The findings are also reported in a similar fashion.

Statistical Analyses

The investigator found a great deal of variability existed within the teachers and students. In terms of teaching experience and the percent of time devoted to teaching recordkeeping there was considerable variation within the teachers. Similarly, student scores were extreme. It appeared the examination was too easy for some students while others had a great deal of difficulty answering the problems.

The results seemed to indicate that the teachers could not be identified with any particular business

education subject or area, although they did have a preference for particular subjects. In addition to teaching recordkeeping, some taught accounting while others taught secretarial and/or clerical subjects. Some teachers preferred to teach recordkeeping while others did not. Some teachers felt recordkeeping was extremely worthwhile to other business areas while others seemed rather apprehensive.

The students also appeared to vary in their ability as well as their desire for the course. Scores on the examination ranged from 100 down to 10. Some of the mistakes should not have been made by capable high school business students. It therefore seems that the students were taking the recordkeeping course for a variety of reasons. These may have included being "shoved" into the course with really no desire and/or ability while others were more capable and were taking the course to give them the opportunity to become familiar with the world of business as well as consumer economics.

Although the responses to the IRI indicated the teachers received satisfaction and enjoyment from teaching recordkeeping, their responses were mixed. This might indicate that the teachers were teaching recordkeeping for a variety of reasons, too. Some teachers may have been new staff members, many of whom teach recordkeeping. Others may have been assigned the course without having a voice in course choice.

These facts and speculations about the students and teachers may provide some reasons for the great degree of variability within the groups. It may also account for the non-significance of the hypotheses. Nevertheless, the investigator employed the analysis of variance to test the following null hypotheses. Each hypothesis, its description and interpretation, is presented in the following paragraphs.

--Hypothesis 1: There is no significant difference between the mean scores achieved on the RAI by the high school recordkeeping students and the total number of years teaching.

The investigator divided the teachers into total years of teaching experience using the scheme shown below.

Group 1	Group 2	Group 3
1-6 years of teaching experience	7-8 years of teaching experience	9-30 years of teaching experience
5 teachers	4 teachers	3 teachers

The students were then assigned to each group and the mean RAI scores were calculated for each group as shown below:

Group 1 had a mean RAI score of 67.97
Group 2 had a mean RAI score of 71.43
Group 3 had a mean RAI score of 65.41

The analysis of variance was then employed to test hypothesis 1 and the results are summarized in Table 6.

The investigator failed to reject the null hypothesis at the .05 level and concluded that the total number of years teaching experience did not make a significant

TABLE 6

ANALYSIS OF VARIANCE SUMMARY FOR SIGNIFICANCE OF DIFFERENCES AMONG THE SCORES ON THE RAI AND THE TOTAL NUMBER OF YEARS TEACHING EXPERIENCE

SOURCE	ss	df	MS	F
Among Teacher Groups	1556.923	2	778.48	.3422*
Within Teacher Groups	20482.90	9	2275.88	
TOTAL	22039.823	11		

*Not Significant at the .05 level of confidence.

impact on student achievement. However, the teachers in Groups 1 and 2 had the highest mean student scores which agrees with Ryans (66:1486-1491) findings that teachers who have taught 5-9 years have students who achieve significantly higher than teachers who have taught fewer or more years.

--Hypothesis 2: There is no significant difference between the mean scores achieved on the RAI by the high school recordkeeping students and the total number of years teaching recordkeeping.

The investigator used a scheme similar to the one used in hypothesis 1 to categorize the teachers. Group 1 had five teachers who had taught recordkeeping for 0-2 years, Group 2 had three teachers who had taught 3-5 years and Group 3 had four teachers who had taught 6-8 years. The investigator then tested the hypothesis and the results are summarized in Table 7.

TABLE 7

ANALYSIS OF VARIANCE SUMMARY FOR SIGNIFICANCE OF DIEFERENCES AMONG THE SCORES ON THE RAI AND THE TOTAL NUMBER OF YEARS TEACHING RECORDKEEPING

SOURCE	ss	df	MS	F
Among Teacher Groups	3623.55	2	1811.78	.8854*
Within Teacher Groups	18416.31	9	2046.26	
TOTAL	22039.86	11		

*Not Significant at the .05 level of confidence.

The investigator failed to reject the null hypothesis at the .05 level and therefore concluded that the total number of years teaching recordkeeping did not make a significant impact on student achievement. However, the investigator observed that those teachers who taught recordkeeping 3-5 years had the highest mean RAI score of 71.43. This might suggest that these teachers have had time to develop more effective innovative ideas and methods, or they might have more capable students in terms of ability and/or desire.

--Hypothesis 3: There is no significant difference between the mean scores achieved on the RAI by the high school recordkeeping students and the teacher whose first teaching preference is the secretarial sequence.

The investigator divided the teachers into three distinct groups. Teachers whose first preference was teaching secretarial subjects was Group 1, teachers whose second preference was teaching recordkeeping became Group 2,

and so forth. The investigator then tested the hypothesis which is summarized in Table 8.

TABLE 8

ANALYSIS OF VARIANCE SUMMARY FOR SIGNIFICANCE OF DIFFERENCES AMONG THE SCORES ON THE RAI AND THE TEACHER WHOSE FIRST TEACHING PREFERENCE IS THE SECRETARIAL SEQUENCE

SOURCE	ss	df	MS	F
Among Teacher Groups	3195.69	2	1597.85	.763*
Within Teacher Grps.	18844.18	9	2093.79	
TOTAL	22039.87	11		

*Not Significant at the .05 level of confidence.

The investigator failed to reject the null hypothesis at the .05 level, and concluded that the group of teachers whose first teaching preference is secretarial subjects did not make a significant impact on student achievement. But, this group did have the highest mean RAI score of 72.36. This was compared to Group 2 which had 66.94 and Group 3 which had 64.99. The investigator infers that this gives the school administrator in charge of hiring some tenous evidence that business teachers who prefer teaching secretarial subjects may be more innovative in terms of providing different teaching ideas and methods. It may also be inferred that this group had more capable students in terms of ability and/or desire.

--Hypothesis 4: There is no significant difference between the mean scores achieved on the RAI by the high school recordkeeping student and the teacher whose first teaching preference is the clerical sequence.

Again the investigator divided the teachers into three distinct groups in a fashion similar to hypothesis 3 and employed the statistical test to measure significance of differences in mean scores.

TABLE 9

ANALYSIS OF VARIANCE SUMMARY FOR SIGNIFICANCE OF DIFFERENCES AMONG THE SCORES ON THE RAI AND THE TEACHER WHOSE FIRST TEACHING PREFERENCE IS THE CLERICAL SEQUENCE

SOURCE	ss	df	MS	F
Among Teacher Groups	4803.16	2	2401.58	1.254*
Within Teacher Grps.	17236.70	9	1915.18	
TOTAL	22039.86	11		

*Not Significant at the .05 level of confidence.

Since the F value of 1.254 was less than the critical value of 4.26, the investigator failed to reject the null hypothesis at the .05 level. He concluded that the teachers whose first teaching preference is the clerical subjects made no significant impact on student achievement. However, the group whose third preference was teaching clerical subjects had the highest mean RAI of 76.529. It might be inferred that this latter group had more capable students

in terms of ability and/or desire, or this group of teachers had used more effective learning techniques.

--Hypothesis 5: There is no significant difference between the mean scores achieved on the RAI by the high school recordkeeping students and the teacher whose first teaching preference is the bookkeeping/accounting sequence.

The investigator again divided the teachers into three distinct groups in a fashion similar to the secretarial and clerical groups. The hypothesis was then tested and the results summarized, as shown in Table 10.

TABLE 10

ANALYSIS OF VARIANCE SUMMARY FOR SIGNIFICANCE OF DIFFERENCES AMONG THE SCORES ON THE RAI AND THE TEACHER WHOSE FIRST TEACHING PREFERENCE IS THE BOOKKEEPING/ACCOUNTING SEQUENCE

SOURCE	ss	df	MS	F
Among Teacher Groups	1172.43	2	586.22	.2528
Within Teacher Grps.	20867.43	9	2318.60	
TOTAL	22039.86	11		

*Not Significant at the .05 level of confidence.

The investigator failed to reject the null hypothesis at the .05 level, and concluded that the group of teachers whose first teaching preference is the bookkeeping/accounting sequence had no significant impact on student achievement. Although the investigator was somewhat perplexed by this result, since recordkeeping falls within this sequence,

he can only speculate that variation within the groups may have affected the outcome. The teachers whose second preference is teaching within this sequence had the highest mean RAI score. This was 71.64. This score may have been attributed to more capable and/or motivated students or the teacher had used more effective teaching methods and ideas.

--Hypothesis 6: There is no significant difference between the mean scores achieved on the RAI by the high school recordkeeping students and how important the teacher feels recordkeeping is to the various business majors.

The investigator found there was no significant difference between the mean RAI scores and how important the teacher felt recordkeeping was to the various business majors as identified in the IRI. Consequently, the investigator reported the results of general business in Table 11 as representative of all the business majors identified by the IRI. The results of the other business areas were reported in narrative form.

TABLE 11

ANALYSIS OF VARIANCE SUMMARY FOR SIGNIFICANCE OF DIFFERENCES AMONG THE SCORES ON THE RAI AND HOW IMPORTANT THE TEACHER FEELS RECORDKEEPING IS TO GENERAL BUSINESS AND RELATED FIELDS

SOURCE	ss	df	MS	F
Among Teacher Groups	428.50	1	428.50	.2175*
Within Teacher Groups	2166.75	11	1969.79	
TOTAL	2595.25	12		

*Not Significant at the .05 level of confidence.

The investigator failed to reject the null hypothesis at the .05 level, and concluded that how important a teacher feels recordkeeping is to general business and related fields does not make a significant impact on student achievement. The investigator suspects that since many of the students are not highly motivated, the teacher's affective influence or his attitudes, values, and biases about the recordkeeping course may be minimal in terms of achievement. The cognitive skills or how the teacher combines and synthesizes innovative ideas and methods may be more significant since often these types of students need to be doing "something". The more variety the teacher offers the student in terms of different innovative ideas and methods, the more opportunities he is providing the student to achieve. In other words, the teacher should be thinking in terms of student-directed rather than teacher-directed learning.

Results of the analysis of the other business majors produced similar findings. Each teacher expressed his feelings about how important he felt recordkeeping was to typing, shorthand, bookkeeping and accounting, office machines, office practices and cooperative education. A brief conclusion follows: The investigator can only tenuously conclude that the cognitive rather than the affective skills of the teacher are more effective in terms of providing students with the opportunity to achieve. In

addition, student ability may be a significant factor. It also seems to the investigator that another significant factor may be student motivation. If the student does not want to do something, then the opportunity for the student to perform and achieve successfully probably will not come to fruition.

--Hypothesis 7: There is no significant difference between the mean scores achieved on the RAI by the high school recordkeeping students and how much satisfaction and enjoyment the teacher gets from teaching recordkeeping.

In Table 12 the investigator found that the degree of satisfaction and enjoyment the teachers received from teaching recordkeeping was not significant in terms of student achievement.

TABLE 12

ANALYSIS OF VARIANCE SUMMARY FOR SIGNIFICANCE OF DIFFERENCES AMONG THE SCORES ON THE RAI AND HOW MUCH SATISFACTION AND ENJOYMENT THE TEACHER GETS FROM TEACHING RECORDKEEPING

SOURCE	ss	df	MS	F
Among Teacher Groups	15.368	1	15.368	.0086*
Within Teacher Grps.	19621.24	11	1783.74	
TOTAL	19636.608	12		

*Not Significant at the .05 level of confidence.

The investigator failed to reject the null hypothesis at the .05 level. This result proved rather disappointing since one might expect the teacher who enjoys teaching a recordkeeping course to provide the students with many opportunities to achieve. Again, this might be due to the variability within the teacher groups, or a lack of ability and/or motivation on the part of the students. This result does, however, provide some evidence, though tenuous, that the affective domain of the teacher again does not play as big a part in student achievement as perhaps the types of methods and ideas the teacher is actually using to generate successful student learning.

--Hypothesis 8: There is no significant difference between the mean scores achieved on the RAI by the high school recordkeeping students and the years of salaried work experience of the teacher.

As shown in Table 13, the investigator found that the total number of years salaried work experience was not significant in terms of the impact on student achievement.

TABLE 13

ANALYSIS OF VARIANCE SUMMARY FOR SIGNIFICANCE OF DIFFERENCES AMONG THE SCORES ON THE RAI AND THE YEARS OF SALARIED WORK EXPERIENCE OF THE TEACHER

SOURCE	ss	df	MS	F
Among Teacher Groups	796.88	3	265.62	.100*
Within Teacher Grps.	21242.98	8	2655.37	
TOTAL	22039.86	11		

*Not Significant at the .05 level of confidence.

The investigator failed to reject the null hypothesis at the .05 level. The result was rather unexpected, though it might be inferred that work experience provides a person with substantive knowledge only and not a great deal of opportunity to develop a repertoire of innovative ideas and methods to implement in the classroom.

--Hypothesis 9: There is no significant difference between the mean scores achieved on the RAI by the high school recordkeeping students and the percent of time devoted to teaching recordkeeping.

The investigator divided the teachers into three distinct groups according to the percent of time devoted to teaching recordkeeping. Group 1 teachers devoted 0-20% of their time to teaching recordkeeping, Group 2 devoted 21-40% and Group 3 gave 41-100% of their time. The investigator then tested hypothesis 9. The results of that test are shown in Table 14.

TABLE 14

ANALYSIS OF VARIANCE SUMMARY FOR SIGNIFICANCE OF DIFFERENCES AMONG THE SCORES ON THE RAI AND THE PERCENT OF TIME DEVOTED TO TEACHING RECORDKEEPING

SOURCE	ss	df	MS	F
Among Teacher Groups	1719.78	2	859.89	.3809*
Within Teacher Grps.	20320.08	9	2257.79	
TOTAL	22039.86	11		

*Not Significant at the .05 level of confidence.

The investigator failed to reject the null hypothesis at the .05 level, and concluded that the percent of time devoted to teaching recordkeeping did not have a significant impact on student achievement. However, Group 3 teachers had the highest mean score of 69.71 while Group 2 had 69.24 and Group 1 63.96. These results may be attributed to better students in terms of ability and/or motivation or more effective teaching methods.

The investigator noted that Group 3 did not make a significant impact on student achievement. This may be attributed to the variation within the groups. This result does have implications for school business education supervisors and department chairmen when assigning business courses to teachers. It might indicate that the effectiveness of the teacher is not a function of how much time he devotes to preparation but rather what types of innovative ideas and methods he will be using.

The investigator also employed correlation to express and measure any significant relationships between the scores of the instruments administered to the teachers and students as well as the demographic information about the teachers. Since there was a considerable number of non-significant findings, Tables 15 and 16 identify only the significant and near-significant relationships.

In Table 15 the investigator noted that the only positive significant relationship was .7364, and it was

TABLE 15

CORRELATION EXPRESSING RELATIONSHIP BETWEEN ITMI SCORE AND RAI AND IWIAI SCORES

	ITMI Score
RAI Score	.7364*
IWIAI Score	-.7154*

*Significant at the .05 level of confidence.

between the ITMI mean scores and the RAI mean scores. If one were attempting to make predictions concerning student achievement he might suggest that the teacher who employs a variety of innovative teaching ideas and methods provides students with a greater opportunity for achieving in school.

A significant negative relationship of 0.7154 was noted between the ITMI mean score and the IWIAI mean score. In terms of the effect on student achievement, one might predict that as the teacher increases his repertoire of innovative teaching methods and ideas and finds those that are effective he is reluctant to try unproven innovative methods and ideas.

TABLE 16

CORRELATION EXPRESSING RELATIONSHIP BETWEEN TOTAL YEARS TEACHING EXPERIENCE AND TOS AND IWIAI SCORES

	TOTAL YEARS TEACHING EXPERIENCE
TOS Score	.4644**
IWIAI Score	-.5940*

*Significant at the .05 level of confidence.
**Near Significant at the .05 level of confidence.

Table 16 expresses a near significant positive relationship of .4644 between the years total teaching experience and the mean TOS score. The investigator notes, with caution, that even though the relationship is not significant it is worthwile to point out that enough correlation exists to infer some kind of tenuous relationship. One might state that as the teacher gains experience in teaching he may become more venturesome and imaginative in terms of introducing different innovations into the classroom. In other words, his predisposition towards change increases.

On the other hand, the investigator noted a significant negative relationship of -.5940 between the total years teaching experience and the mean IWIAI score. One might also infer that as one gains more experience in teaching he becomes reluctant to actually adopt new innovative ideas and methods. At first glance, this inference appears to be contradictory to the conclusion in the preceding paragraph. However, the investigator suspects that even if the instructor has an increased predisposition towards change and innovation he may not be willing to initiate change or innovations because of attitudinal and/or institutional inhibitors.

Descriptive Analysis

The investigator also employed a considerable number of descriptive tables to express and identify noteworthy trends using teacher and student information. When teachers

were included in the tables the investigator divided the teachers into four quartiles using the TOS score. Teachers who had a score within the range of 103 to 112 were classified high innovating teachers and were included in the first or second quartiles. Teachers who had a score within the range of 90 to 102 were classified low innovating teachers and were included in the third or fourth quartiles. The description, analyses and interpretation of each table follows.

Table 17 expresses the relationship between the degree of innovativeness of each teacher and the mean RAI score and standard deviation.

TABLE 17

DEGREE OF INNOVATIVENESS OF THE TEACHERS AND THE MEAN RAI SCORE AND STANDARD DEVIATION

TEACHERS (BY STATE)	MEAN RAI SCORE	STANDARD DEVIATION
High Innovating		
Florida	48.53	24.3
Massachusetts	60.42	12.0
Massachusetts	62.50	11.7
Maine	65.97	12.2
Pennsylvania	71.33	13.8
Oregon	76.90	14.3
Low Innovating		
Colorado	61.30	13.4
Arizona	66.37	7.9
Colorado	67.32	10.2
Arizona	73.53	16.1
New Jersey	76.96	20.6
Arizona	78.57	17.4

Table 17 points out that the mean RAI scores ranged from 48.53 to 76.90 for the high innovating teachers. The mean RAI scores ranged from 61.30 to 78.57 for low innovating teachers. The low innovating teachers had higher mean RAI scores. However, except for the 48.53 mean score from the Florida teacher, the variation between mean RAI scores for low and high innovating teachers does not appear to be very pronounced. The investigator suspects student ability and/or desire as a significant factor for this variation in the mean RAI scores because of the large standard deviation scores. The standard deviation scores ranged from 7.9 to 24.3.

Therefore, it appears that the recordkeeping students are a very heterogeneous group of students whose abilities and/or motivations vary considerably. This often makes it difficult for the teacher to determine what motivates some students in terms of innovative ideas and methods. However, other students may have enough ability and/or motivation so whatever the teacher provides in the way of innovative methods and ideas may be only minimal in terms of making an impact on student achievement.

In Table 18 the investigator identified the number of students who were influenced by specific innovative ideas and methods employed by the teacher to influence the student's career choice.

TABLE 18

INNOVATIVE TEACHERS AND THE NUMBER OF STUDENTS INFLUENCED BY INNOVATIVE IDEAS AND METHODS IN THEIR CAREER CHOICE

TEACHER (By State)	TYPES OF INNOVATIVE IDEAS AND METHODS								
	None	Guest Spkrs.	Counseling	Career Tests	Field Trips	Classroom Assngt.	Tchr's. Work Exper.	Slides, Films, Etc.	Job Sim.
High Innov.									
Mass.	7*	0	3	0	0	4	2	0	4
Florida	-	-	-	-	-	-	-	-	-
Maine	13	0	1	2	0	25	4	1	0
Pennsylvania	9	0	2	1	0	10	3	0	2
Oregon	25	1	1	1	1	5	1	1	2
Mass.	1	2	1	1	2	4	1	1	3
TOTAL	55	3	8	5	3	49	11	3	11
Low Innov.									
Colorado	14	0	2	0	0	5	1	1	1
Arizona	14	0	2	2	1	6	3	4	2
Colorado	4	0	2	2	1	6	3	4	5
Arizona	5	0	1	0	0	7	3	0	0
New Jersey	19	0	1	1	3	5	1	3	1
Arizona	5	2	2	3	4	5	2	4	1
TOTAL	61	2	10	8	8	32	13	13	10

*Figure in each cell represents the number of students responding.

Table 18 points out that 101 students were not influenced by their teacher in selecting a career. Sixty-one students indicated low innovating teachers and 55 students indicated high innovating teachers did not influence their career choice. Forty-seven students indicated that high innovating teachers used classroom assignments to influence their career choice, and 32 students indicated that low innovating teachers influenced their career choice through classroom assignments. The investigator was rather puzzled that many of the other cells did not reflect more responses, however, the table does appear to indicate that teacher-directed learning in terms of classroom assignments, work experience and job simulation makes more of an impact on student career choice than innovative ideas and methods such as counseling and career tests which try to direct the student towards an appropriate career choice.

In Table 19 the investigator divided the teachers into four quartiles according to their degree of frequency of adoption of innovative ideas and methods as measured by the ITMI score. Teachers who had a score within the range of 139 to 162 were classified as high frequency adopters and were included in the first or second quartiles. Teachers who had a score within the range of 94 to 138 were classified as low frequency adopters and were included in the third or fourth quartiles. The students then identified specific types of innovative ideas and methods that the teacher employed to influence their career choice.

TABLE 19

THE FREQUENCY OF ADOPTING INNOVATIVE IDEAS AND METHODS AND THE NUMBER OF STUDENTS INFLUENCED BY INNOVATIVE IDEAS AND METHODS IN THEIR CAREER CHOICE

	TYPES OF INNOVATIVE IDEAS AND METHODS								
TEACHER (By State)	None	Guest Spkrs.	Counsel-ing	Career Tests	Field Trips	Class-room Assngt.	Tchr's. Work Exper.	Slides, Films, Etc.	Job Sim.
High Freq. of Adoption									
Oregon	25*	1	1	1	1	5	1	1	2
Maine	13	0	1	2	0	25	4	1	0
New Jersey	19	0	1	1	3	5	1	3	1
Massachusetts	7	0	3	0	0	4	2	0	4
Massachusetts	1	2	1	1	1	5	1	1	3
Arizona	5	2	3	3	4	5	2	4	1
TOTAL	70	5	10	8	9	49	11	10	11
Low Freq. of Adoption									
Arizona	14	0	2	2	1	6	3	4	2
Arizona	5	0	1	0	0	7	3	0	0
Colorado	14	0	2	0	0	5	1	1	1
Colorado	4	0	1	2	1	4	3	1	5
Pennsylvania	9	0	2	1	1	10	3	0	2
TOTAL	46	0	8	5	3	32	13	6	10

*Figure in each cell represents the number of students responding.

The totals in all the cells in Table 19, except teacher's work experience, were higher for the high frequency of adopting teachers. It should also be pointed out that the Florida teacher did not administer the BCCI which might have affected the scores between the two groups. However, the investigator suspects the differences would not have been noteworthy. Nevertheless, the totals did provide some evidence that the teachers who scored high on the ITMI appeared to influence more students in their career choice. Again, classroom assignments, 49 responses for high frequency of adopting teachers and 32 responses for low frequency of adopting teachers, appeared to influence the students the most in their career choice.

Table 20 reflects the strength of the student's career choice and the number of students influenced by innovative ideas and methods in their career choice.

In Table 20 there were 123 students who indicated that innovative ideas and methods employed by the teacher had no effect on the strength of their career choice. This fact appears understandable because the "very strong" and "strong" respondents probably have their choice of a career fairly well decided already. However, when tabulating the responses it appeared, even for the "very strong" and "strong" groups, that the students expected to be in many jobs that did not acquire a great deal of skill and/or education. This might indicate that many students either do

TABLE 20

STRENGTH OF STUDENT CAREER CHOICE AND THE NUMBER OF STUDENTS INFLUENCED BY INNOVATIVE IDEAS AND METHODS IN THEIR CAREER CHOICE

STRENGTH OF STUDENT CAREER CHOICE	TYPES OF INNOVATIVE IDEAS AND METHODS								
	None	Guest Spkrs.	Counseling	Career Tests	Field Trips	Classroom Assngt.	Tchr's. Work Exper.	Slides, Films, Etc.	Job Sim.
VERY STRONG	33*	2	5	4	3	17	5	4	4
STRONG	32	0	8	3	3	22	7	10	5
MEDIUM	37	1	4	2	3	21	5	2	4
UNDECIDED	21	0	2	1	1	17	5	4	3
TOTAL	123	3	19	10	10	77	22	20	16

*Figure in each cell represents the number of students responding.

not have the ability to pursue further training to acquire more skills or they have a poor self-image of themselves.

Of the 123 student responses that the innovative ideas and methods used by the teachers had "no influence" on their career choice, 59 respondents indicated "medium" or "undecided" in the strength of their career choice. Perhaps these students were in the process of trying to decide or the innovative methods and ideas employed by the teacher were significant.

Classroom assignments may have had a minor influence on the "very strong" and "strong" respondents, but the investigator suspects the assignments were reinforcing rather than influencing. Those who indicated "medium" or "undecided" also indicated classroom assignments as influencing their career choice. Yet, they still were not sure of their career choice.

In summary, it appears either the student already had his mind made up and the innovative ideas and methods were reinforcing his career choice, or the effects of the innovative ideas and methods were only making a minimal impact on career choice. In other words, strength of student career choice and innovative ideas and methods employed to influence student career choice appeared to be mutually exclusive.

Table 21 shows the relationship between the strength of the student's career choice and how each student felt

about recordkeeping making a contribution towards his career choice.

TABLE 21

THE CONTRIBUTION OF RECORDKEEPING TOWARDS STUDENT CAREER CHOICE AND THE STRENGTH OF STUDENT CAREER CHOICE

STRENGTH OF STUDENT CAREER CHOICE	CONTRIBUTION OF RECORDKEEPING TOWARDS STUDENT'S CAREER CHOICE			
	Excellent	Above Average	Average	Below Average
Very Strong	9*	23	12	10
Strong	4	41	14	9
Medium	7	47	8	4
Undecided	3	30	11	2
TOTAL	23	141	45	25

*Figures represent the number of students responding

Table 21 points out that many of the students considered the contribution of recordkeeping towards their career choice as being "excellent" or "above average." There were 131 students who either had "very strong," "strong" or "medium" feelings about the strength of their career choice and rated the contribution of recordkeeping towards career choice "excellent" or "above average." However, there were 33 students who were still "undecided" about the strength of their career choice, yet rated the contribution of recordkeeping towards career choice "excellent" or "above average." The investigator suspects that the recordkeeping

course is not providing these students with enough opportunity in terms of exposure to different innovative ideas and methods to exhibit any stronger feelings, or perhaps these students are still the younger group and need more time to make up their minds. By the same token, "very strong," "strong," and "medium" respondents may be more motivated and the recordkeeping course is providing them with enough opportunity to learn more about the career they are already interested in, and it is helping them to discern between different careers.

Table 22 expresses the relationship between the strength of the student's career choice and the student's age.

TABLE 22

THE STRENGTH OF STUDENT'S CAREER CHOICE AND STUDENT'S AGE

STRENGTH OF STUDENT CAREER CHOICE	STUDENT'S AGE					
	14	15	16	17	18	Over 18
Very Strong	0*	11	22	24	18	0
Strong	0	4	16	25	10	2
Medium	0	9	22	25	9	1
Undecided	0	9	12	18	5	1
TOTAL	0	33	72	92	42	4

*Figures represent the number of students responding.

Table 22 shows that most of the students who were taking the recordkeeping course were either 16 or 17 years old while there were no 14 year olds and only four 18 years old or over. It was noted that in the 16 and 17 year old groups many of the responses to the strength of career choice were either "very strong" or "strong." However, 47 percent of the responses by the 16 year old group and 46 percent of the responses by the 17 year old group were either "medium" or "undecided." This would seem to indicate that while many of the students have definite feelings about their career choice, many are on the threshold or are still undecided about making a definite commitment to a career.

On the other hand, only one third of the 18 year olds responded "medium" or "undecided." This does not seem extraordinary since an older student probably has a more definite idea about his career choice.

Table 23 reflects the student's work experience and the mean RAI score.

TABLE 23

STUDENT WORK EXPERIENCE AND RAI SCORE

STUDENT WORK EXPER.	RAI SCORE Score 10-24 / Mean	Score 25-30 / Mean	Score 40-54 / Mean	Score 55-69 / Mean	Score 70-84 / Mean	Score 85-100 / Mean	GRAND MEAN
Work Exp. in area of Career Chc	1* / 10	0 / 0	12 / 48.46	19 / 59.73	23 / 76.91	12 / 85.10	67.41
Work Exp. not in Career Chc	0 / 0	0 / 0	13 / 47.69	36 / 60.43	36 / 60.43	19 / 97.68	71.75
No Work Exper. at All	0 / 0	0 / 0	7 / 47.85	18 / 63.00	16 / 76.43	10 / 88.80	70.19

*Figure in each cell represents the # of students within the corresponding range.

Table 23 expresses the fact that students who had work experience, but not in the area of career choice, had the highest mean RAI scores in the 70-84 score range and the 85-100 score range, as well as the highest grand mean. The students who had no work experience at all had the second highest mean RAI score in the 85-100 score range and the second highest grand mean. The investigator suspects that the students who had work experience, but not in their area of career choice, might be more capable in terms of ability. It appears that this conclusion, though tenuous, is a logical one because there is not a great deal of variation in scores of the no work experience respondents and the work experience respondents except for the 85-100 score range. If there was considerable variation, then the investigator might conclude that work experience, in general, might have an affect on student achievement.

Table 24 reflects the years of salaried work experience of the high and low innovating instructors and the number of students influenced by innovative ideas and methods in their career choice.

Table 24 does not illustrate that the number of years of salaried work experience of the teachers provides any significant trend in terms of the number of students influenced by innovative ideas and methods. Although the teachers with 1-2 years and over 5 years work experience appeared to influence more students. Thirty-three out of

TABLE 24

YEARS OF SALARIED WORK EXPERIENCE OF THE TEACHERS AND THE NUMBER OF STUDENTS INFLUENCED BY INNOVATIVE IDEAS AND METHODS IN THEIR CAREER CHOICE

TEACHER (By State)	# Yrs. Sal. Work Exp.	TYPES OF INNOVATIVE IDEAS AND METHODS									
		None	Guest Spkrs.	Counseling	Career Tests	Field Trips	Classroom Assngt.	Tchr's. Work Exper.	Slides, Films, Etc.	Job Sim.	TOTAL STUDENTS
High Innov.											
Mass.	1-2	7*	0	3	0	0	4	2	0	4	20
Florida	3-5	-	-	-	-	-	-	-	-	-	-
Maine	5 +	13	0	1	2	0	25	4	1	0	46
Penn.	1-2	9	0	2	1	0	10	3	0	2	27
Oregon	1-2	25	1	1	1	1	5	1	1	2	38
Mass.	5 +	1	2	1	1	2	5	1	1	3	17
Low Innov.											
Colorado	3-5	14	0	2	0	0	5	1	1	1	24
Arizona	5 +	14	0	2	2	1	6	3	4	2	34
Colorado	1-2	4	0	2	2	1	6	3	4	5	27
Arizona	3-5	5	0	1	0	0	7	3	0	0	16
New Jers.	3-5	19	0	1	1	3	5	1	3	1	34
Arizona	1-2	5	2	2	3	4	5	2	4	1	28

*Figure in each cell represents the number of students responding.

46 students indicated that the teacher from Maine with over five years salaried work experience influenced their career choice, including 25 students who were influenced by classroom assignments. Two teachers from Arizona with one to two years of salaried work experience and over five years salaried work experience had 23 out of 27 students and 20 out of 34 students respectively indicating the teacher influenced their career choice. The teacher from Colorado with one to two years salaried work experience had 23 out of 27 students indicating the teacher influenced their career choice. The teacher from Massachusetts with over five years work experience influenced 16 students out of 17.

Perhaps the reason these teachers are more affecting in influencing student career choice is that their jobs may have provided them with the opportunity to develop a repertoire of innovative ideas and methods. This might suggest that business education supervisors and department chairmen consider the type of work as well as the number of years work experience when developing a hiring policy.

In Table 25 the investigator expressed the relationship between the teacher's degree of satisfaction and enjoyment in teaching recordkeeping and the number of students influenced by innovative ideas and methods in their career choice.

Table 25 illustrates that the teacher whose degree of satisfaction and enjoyment from teaching recordkeeping is great appeared to influence many students in their career

TABLE 25

THE DEGREE OF SATISFACTION AND ENJOYMENT THE TEACHER RECEIVES FROM TEACHING RECORDKEEPING AND THE NUMBER OF STUDENTS INFLUENCED BY INNOVATIVE IDEAS AND METHODS IN THEIR CAREER CHOICE

TEACHER (By State)	Degree Satis. and Enjymt	TYPES OF INNOVATIVE IDEAS AND METHODS									
		None	Guest Spkrs.	Counseling	Career Tests	Field Trips	Classroom Assngt.	Tchr's. Work Exper.	Slides, Films, Etc.	Job Sim.	TOTAL STUDENTS
High Innov.											
Mass.	Avg.	7*	0	3	0	0	4	2	0	4	20
Florida	Great	-	-	-	-	-	-	-	-	-	-
Maine	Great	13	0	1	2	0	25	4	1	0	46
Penn.	None	9	0	2	1	0	10	3	0	2	27
Oregon	Avg.	25	1	1	1	1	5	1	1	2	38
Mass.	Avg.	1	2	1	1	2	5	1	1	3	17
Low. Innov.											
Colorado	Avg.	14	0	2	0	0	5	1	1	1	24
Arizona	Avg.	14	0	2	2	1	6	3	4	2	34
Colorado	Great	4	0	2	2	1	6	3	4	5	27
Arizona	Great	5	0	1	0	0	7	3	0	0	16
New Jersey	Avg.	19	0	1	1	3	5	1	3	1	34
Arizona	Great	5	2	2	3	4	5	2	4	1	28

*Figure in each cell represents the number of students responding.

choice. The teachers from Maine, Colorado and Arizona influenced 90 out of 117 students while the teachers whose degree of satisfaction and enjoyment from teaching record-keeping was average influenced 87 out of 167 students, and more teachers responded to the average choice. One teacher received no degree of satisfaction from teaching recordkeeping and influenced 18 out of 27 students in their career choice.

It appears from the student responses that the teachers who enjoy teaching recordkeeping the most are also making the most noteworthy impact on student career choice. This has implications for business education supervisors and department chairmen in assigning the recordkeeping class to their teachers. It might behoove the supervisor and/or chairman to seriously look at the teacher's desire to teach the course before assigning the class to the teacher.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

The study was concerned with the relationship between innovative teachers and student achievement and career aspirations. Specifically, the investigator wanted to identify the type of innovative teacher who made the most significant impact on student achievement and career choice, and whether or not the use of innovative ideas and methods was effective in helping the students to achieve better and identify a career.

Ninety-two recordkeeping teachers from throughout the United States were initially asked by letter to participate in the study. The investigator included an Instructors Recordkeeping Inventory (IRI) with the letter of invitation in order to obtain general and demographic information about the teachers. An initial response of 25 teachers interested in participating in the study was received. It was indicated in the letter that the teachers would receive innovative materials to help the student's achievement performance. Included with each batch of innovative materials was an instrument the teachers were requested to return to the investigator with the understanding that

the teachers would receive subsequent material only if they returned each instrument.

Eventually, the investigator counted 16 teachers who participated throughout the duration of the study. Each teacher received three more instruments to fill out and return during the study. These were: (1) the Teacher Opinion Survey (TOS), developed by Dr. Earl Bell Russell at The Ohio State University to measure the degree of innovativeness of the teacher, (2) the Instructors Teaching Methods Inventory (ITMI) which measures the frequency of adoption of innovative ideas and methods and (3) the Instructor Willingness to Initiate Action Inventory (IWIAI) to measure the instructor's inclination towards adopting innovative ideas and methods. The latter two instruments were developed from a variety of sources dealing with the motivation of students.

Included in the final batch of innovative materials was a letter asking the teachers to administer a Recordkeeping Achievement Inventory (RAI) to measure student achievement and the Business Career Choice Inventory (BCCI) to gather information about each student's career goals. Most of the teachers accepted the invitation and returned a questionnaire indicating how many students would be administered the RAI and BCCI.

Preparation of the RAI included one question each from the performance tryouts. After initial preparation, the

investigator submitted the RAI to a recordkeeping teacher in Boulder, Colorado, for his suggestions. Based on these suggestions the final draft of the RAI was prepared.

Preparation of the BCCI included initially modifying Carsten's Business Career Objective Scale and then submitting it to two teachers at Poudre High School, Fort Collins, Colorado, for recommendations and testing. After administering the BCCI to the students, the teachers made further suggestions for modifications which were incorporated into the final draft of the BCCI.

The final instruments were received from the teachers on June 16, 1973. A considerable amount of time was spent with the statisticians at the Colorado State University Statistical Laboratory in developing the hypotheses. The investigator also hand scored the TOS. ITWI, ITMI, RAI and BCCI so the information could be adopted for statistical and descriptive analyses.

The treatment of the data involved the use of two statistical tools: (1) analysis of variance was used to determine whether differences existed among the mean scores on the RAI according to a variety of teacher factors identified by the IRI and (2) correlation coefficient to test the relationship between teacher factors identified by the IRI, ITMI and IWIAI scores and the student RAI score. Each hypothesis was stated in the null form and was tested at the .05 level.

The investigator also employed a considerable number of descriptive analyses to express relationships between various teacher and student factors.

Conclusions

Since there was a great deal of variability between teacher and student groups, any conclusions the investigator drew were based on tenuous evidence. Nevertheless, the investigator developed nine hypotheses and summarized the statistical findings below.

Hypothesis 1.

There is no significant difference between the mean scores achieved on the RAI by the high school record-keeping students and the number of years teaching.

In Table 6 the investigator failed to reject the null hypothesis at the .05 level and concluded that the number of years teaching experience did not make a significant impact on student achievement. However, the investigator noted that the teachers who taught 7-8 years had the highest student mean RAI.

Hypothesis 2.

There is no significant difference between the mean scores achieved on the RAI by the high school record-keeping students and the total number of years teaching recordkeeping.

In Table 7 the investigator failed to reject the null hypothesis at the .05 level and concluded that the total

number of years teaching recordkeeping did not make a significant impact on student achievement. However, those teachers who taught recordkeeping 3-5 years had the highest mean RAI score.

Hypothesis 3.

There is no significant difference between the mean scores achieved on the RAI by the high school recordkeeping students and the teacher whose first teaching preference is the secretarial sequence.

In Table 8 the investigator failed to reject the null hypothesis at the .05 level and concluded that the group of teachers whose first teaching preference is the secretarial subjects did not make a significant impact on student achievement. This group did, however, have the highest mean RAI score.

Hypothesis 4.

There is no significant difference between the mean scores achieved on the RAI by the high school recordkeeping students and the teacher whose first teaching preference is the clerical sequence.

In Table 9 the investigator failed to reject the null hypothesis at the .05 level and concluded that the group of teachers whose first teaching preference is the clerical sequence did not make a significant impact on student achievement. The group whose third teaching preference was teaching clerical subjects had the highest mean RAI of 76.529.

Hypothesis 5.

There is no significant difference between the mean scores achieved on the RAI by the high school record-keeping students and the teacher whose first teaching preference is the bookkeeping/accounting sequence.

In Table 10 the investigator failed to reject the null hypothesis at the .05 level and concluded that those teachers whose first teaching preference is the bookkeeping/accounting sequence did not make a significant impact on student achievement, although the group whose second preference is teaching within this sequence had the highest mean score of 71.64.

Hypothesis 6.

There is no significant difference between the mean scores achieved on the RAI by the high school record-keeping students and how important the teacher feels recordkeeping is to the various business majors.

In Table 11 the investigator failed to reject the null hypothesis at the .05 level and concluded that how important the teacher feels recordkeeping is to the various business majors did not make a significant impact on student achievement. This suggests that affective skills may be minimal in terms of making an impact on student achievement since many of the less motivated students need to be doing something to keep them motivated. This might imply that the

cognitive skills of the teacher may be more significant in terms of making an impact on student achievement.

Hypothesis 7.

There is no significant difference between the mean scores achieved on the RAI by the high school recordkeeping students and how much satisfaction and enjoyment the teacher gets from teaching recordkeeping.

In Table 12 the investigator failed to reject the null hypothesis at the .05 level and concluded that how much satisfaction and enjoyment the teacher gets from teaching recordkeeping did not make a significant impact on student achievement. Again, affective skills may be less significant than the cognitive skills of the teacher in terms of the impact on student achievement.

Hypothesis 8.

There is no significant difference between the mean scores achieved on the RAI by the high school recordkeeping students and the years of salaried work experience of the teacher.

In Table 13 the investigator failed to reject the null hypothesis at the .05 level and concluded that the years of salaried work experience of the teacher did not make a significant impact on student achievement. The investigator inferred that the job might have provided the teacher with substantive knowledge only rather than a repertoire of innovative ideas and methods to implement in the classroom.

Hypothesis 9.

There is no significant difference between the mean scores achieved on the RAI by the high school recordkeeping students and the percent of time devoted to teaching recordkeeping.

In Table 14 the investigator failed to reject the null hypothesis at the .05 level and concluded that the percent of time devoted to teaching recordkeeping did not make a significant impact on student achievement. However, teachers who devoted 41-100 percent of their time to teaching recordkeeping had the highest mean RAI score of 69.71.

The investigator also employed simple correlation to test relationships between teacher and student factors. The investigator reported only significant and near significant findings in Tables 15 and 16. The summaries are described below.

1. There was a significant positive relationship of .7364 between the ITMI score and the RAI score. The investigator inferred that the teacher who employs a variety of innovative ideas and methods provides students with a greater opportunity for achieving in school.

2. There was a significant negative relationship of -.7154 between the ITMI score and the IWIAI score. The investigator inferred that one might predict that as the teacher increases his repertoire of effective innovative

teaching ideas and methods he is reluctant to try uproven innovative ideas and methods.

3. There was a near significant positive relationship of .4644 between the total years teaching experience and the TOS score. The investigator inferred tenuously that as the teacher gains experience in teaching, his predisposition towards adopting innovations increases.

4. There was a significant negative relationship of -.5940 between the years total teaching experience and the IWIAI score. The investigator inferred that as the teacher gains more years of teaching experience he becomes more reluctant to actually adopt innovative ideas and methods.

The investigator also employed descriptive analyses to identify noteworthy trends using teacher and student information. The teachers were categorized as either high or low innovating depending on their TOS score. A summary of the findings are described below.

1. Degree of innovativeness of the teacher and the mean RAI score and standard deviation (Table 17)--The investigator found that the low innovating teachers had higher mean RAI scores than the high innovating teachers. However, the investigator suspected this was due to student ability rather than the adoption of effective innovative ideas and methods because of the wide variability within the student groups, as noted by the large standard deviation scores.

2. Innovative teachers and the number of students influenced by innovative ideas and methods (Table 18)--The investigator found that 101 students indicated that neither high or low innovating teachers made an impact on their career choice. However, many of the students did indicate that teaching assignments made an impact on their career choice. It appeared that more teacher-directed learning made an impact on career choice, such as classroom assignments, job simulation and teacher's work experience, rather than innovative ideas and methods such as counseling and career tests which attempt to direct the student towards an appropriate career choice.

3. The frequency of adopting innovative ideas and methods by the teacher and the number of students influenced by innovative ideas and methods in their career choice (Table 19)--The investigator found that the teachers who scored high on the ITMI appeared to influence more students in their career choice, with classroom assignments the most prevalent innovative method influencing student's career choice.

4. Strength of student career choice and the number of students influenced by innovative ideas and methods (Table 20)--The investigator concluded that innovative ideas and methods and the strength of student career choice were mutually exclusive. The innovative ideas and methods appeared to be either reinforcing rather than influencing

the student's career choice or were only making a minimal impact on career choice.

5. The contribution of recordkeeping towards student career choice and the strength of student career choice (Table 21)--The investigator concluded that the recordkeeping course was providing some students with the opportunity to learn more about the careers they were already interested in, or providing other students with some information about careers, but not enough to help them make up their minds.

6. The strength of student's career choice and student's age (Table 22)--The investigator found that although many 16 and 17 year olds had definite feelings about their career choice, there were many students who were either on the threshold or still undecided about making a definite commitment to a career. The 18 year olds were more definite about their career choice, and there were fewer who were still undecided.

7. Student work experience and RAI score (Table 23)--The investigator found that student work experience did not appear to affect the student's RAI score. Any differences in RAI scores between students who work and do not work might be attributed to student ability.

8. Years of salaried work experience of the teachers and the number of students influenced by innovative ideas and methods (Table 24)--The investigator found that teachers who had 1-2 years or more than 5 years work experience

appeared to influence more students in making a career choice. The investigator concluded that the type of work rather than just the number of years work experience might be important in developing a repertoire of innovative ideas and methods.

9. The degree of satisfaction and enjoyment the teacher receives from teaching recordkeeping and the number of students influenced by innovative ideas and methods in making a career choice (Table 25)--The investigator found that the teacher whose degree of satisfaction and enjoyment from teaching recordkeeping was great appeared to make the greatest impact on student career choice.

Recommendations Related to Objectives of the Study

The study represented a landmark in the field of business education since it provided the first bit of significant information about teachers and students in a recordkeeping course. Since recordkeeping is only now emerging as a business education course to be reckoned with in terms of meeting the educational needs of a heterogeneous group of students, the investigator was limited to working with teachers who were willing to participate in this exploratory type of study. Therefore, any conclusions the investigator reached were only applicable to the teachers as well as their students who were identified in the study.

Within the scope of the study the investigator found there was no significant differences between teacher

factors identified by the IRI and student achievement scores measured by the RAI.

As a result of these findings, the following specific recommendations are listed: It would make no difference which business education teacher teaches recordkeeping in terms of

1. the years of teaching experience,

2. the years of teaching recordkeeping,

3. preferring to teach the secretarial, clerical or bookkeeping/accounting sequence,

4. how important the teacher feels recordkeeping is to the various business majors,

5. how much satisfaction and enjoyment the teacher gets from teaching recordkeeping,

6. the years of salaried work experience, and

7. the percent of time devoted to teaching recordkeeping since these specific teacher factors did not make a significant impact on student achievement.

Other recommendations include:

8. In view of the findings reported in Table 18 on page 71, it is recommended that specific classroom assignments, job simulation techniques and teacher's work experiences be identified which were most effective in their impact on student career choice.

9. In view of the findings reported in Table 18 on page 71, it is recommended that the counseling staff of

the school determine the reason for the ineffectiveness of career tests and counseling in making an impact on student career choice.

10. In view of the findings reported in Table 15 on page 67, it is recommended that the teacher who employs a variety of innovative ideas and methods be seriously considered for teaching a course in recordkeeping.

Additional research employing more scientific rigor in selecting the population may provide evidence for identifying the type of teacher who can make an impact on student achievement.

Recommendations for Further Research

1. It is recommended that the study be replicated using a much more rigorous design in order to draw more meaningful conclusions.

2. It is recommended that additional research be done to improve the BCCI in order to identify specific innovative ideas and methods which are most effective in making an impact on student career choice.

3. It is recommended that additional research be done to improve the RAI in order to identify specific academic strengths and weaknesses of recordkeeping students.

4. It is recommended that further research be done to isolate specific innovative ideas and methods which are most effective in their impact on student achievement.

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APPENDIX A

INVITATION TO TEACHERS TO PARTICIPATE IN STUDY

COLORADO STATE UNIVERSITY

FORT COLLINS, COLORADO 80521

DEPARTMENT OF VOCATIONAL EDUCATION

July 25, 1972

Dear Recordkeeping Teacher:

Let's make your next year's recordkeeping class a great success for you and your students. Let's have recordkeeping without failure. Let's make certain that you have plenty of supplementary teaching materials--and free of charge. You can have a better year by joining Project Recordkeeping Success and following three steps. Here they are:

Step 1 *Use Recordkeeping Clinics to check out learning on each chapter.*

Step 2 *Use Performance Tryouts to determine whether students have mastered the problems in each chapter.*

Step 3 *Administer Tests to measure students' achievement. It is expected that all will have high achievement because they have been fully and adequately prepared by the Clinics and Tryouts.*

The steps are next described in more detail:

Step 1--Declare a Recordkeeping Clinic Day for each chapter this fall. The enclosed Recordkeeping Clinic 1 is a sample of what can be used at the end of Chapter 1. A copy will be provided for each student. It will help you and the students check out each point to master in preparation for the next step. Copies for all other chapters will be sent free if you participate. The Clinics have been prepared by recordkeeping teachers.

Step 2--Declare a Performance Tryout Day for each chapter next fall. The enclosed Performance Tryout will be provided for each student. It will determine whether the student is ready on Chapter 1 for the test. Performance Tryouts for other chapters will be provided free for each of your students. These materials were also prepared by successful recordkeeping teachers.

Step 3--Give Test 1. Students are almost assured of success on the test because of the previous two steps. Test 1, available for purchase from the publisher, follows Chapter 2 so you need to complete Clinics and Performance Tryouts for two chapters. Or you can prepare your own tests.

What else do you receive? Teaching tips and suggestions will be sent with each batch of materials.

Why is this being done? A study is being conducted to improve the teaching of recordkeeping and eventually to produce a recordkeeping methods text. Your experiences will be of help to thousands of other recordkeeping teachers.

How do you participate? Fill in the questionnaire and mail it immediately. Supplies for only 50 fortunate recordkeeping teachers are going to be made available free. So answer today!

Join Project Recordkeeping Success!

Sincerely yours,

Harry Huffman

Harry Huffman, Professor
Business and Office Education

Sheldon Mendelson

Sheldon Mendelson
Ph.D. Candidate

sg
Enclosures

APPENDIX B

INSTRUCTOR RECORDKEEPING INVENTORY

I N S T R U C T O R

R E C O R D K E E P I N G I N V E N T O R Y

INSTRUCTOR'S NAME_____ SCHOOL_____

STREET ADDRESS_____

CITY_____ STATE_____ZIP_____

Instructions: Please answer EACH of the following 10 items.

What was your major area of preparation in college?

Undergraduate [ ] Graduate [ ]

How many years of teaching experience have you had?

Elementary [ ] High School [ ]

Junior High [ ] College or University [ ]

How many years have you taught recordkeeping? [ ]

What approximate percent of your annual teaching load is devoted to recordkeeping? [ ]%

What approximate percent of your annual teaching load is devoted to teaching in the following program majors? (Other than recordkeeping)

Gen. Bus. & related [ ]% Office Practice [ ]%

Typing [ ]% Coop Education [ ]%

Shorthand [ ]% Other Bus. Subj. [ ]%

Bookkeeping,Acctg. [ ]% Outside Business [ ]%

Office Machines [ ]%

What are your preferences in teaching assignment? Rank the following by assigning "1" for first choice, "2" for second choice, and "3" for third choice.

Gen. Bus. & related	☐	Office Practice	☐
Typing	☐	Coop Education	☐
Shorthand	☐	Other Bus. Subj.	☐
Bookkeeping, Acctg.	☐	Outside Business	☐
Office Machines	☐		

How important do YOU FEEL recordkeeping is to the various business majors? (Check the appropriate box under each major.)

	BUSINESS MAJOR						
IMPORTANCE	Gen. Bus. & related	Typing	Short-hand	Bkpg. & Acctg.	Office Mchns.	Office Prac.	Coop Educ.
Great							
Average							
Slight							
None							

Rate the satisfaction and enjoyment that you receive from teaching recordkeeping. (Check one.)

Great ☐ Average ☐ Slight ☐ None ☐

How much salaried work experience have you had in a business occupation? (Check one.)

None	☐	7-11 months	☐	3-5 years	☐
1-6 months	☐	1-2 years	☐	Over 5 years	☐

Would you like to participate in Project Recordkeeping Success? (Check one.)

YES ☐ NO ☐

APPENDIX C

LETTER THANKING EACH TEACHER FOR ACCEPTING THE INVITATION

COLORADO
STATE
UNIVERSITY
FORT COLLINS
COLORADO
80521

department of vocational education

September 1, 1972

Thank you for accepting an invitation to participate in *Project Recordkeeping Success*.

Enclosed you will find clinics, tryouts, and the teacher's key for the first five chapters. If you need additional sets, please let me know immediately so I can send them to you. You also will find a questionnaire. Please fill out the questionnaire and return it to me in the enclosed envelope.

You can expect to receive clinics, tryouts, and questionnaires every three or four weeks.

In addition, tips and suggestions will be sent to you shortly. You may want to try them in order to vary some of your current classroom procedures.

Please feel free at any time to contact me about the project. Once again, thank you for your interest and participation, and I am sure we all will benefit from the experience.

Sincerely,

Sheldon Mendelson

sg
Enclosures

APPENDIX D

FIRST FOLLOW-UP LETTER

COLORADO
STATE
UNIVERSITY
FORT COLLINS
COLORADO
80521

department of vocational education

October 16, 1972

Dear Participant;

You were recently sent the first batch of instructional materials for Project Recordkeeping Success. Included with the material was a teacher's key and a questionnaire.

You probably overlooked the returning of the questionnaire in your desire to administer some of the new materials.

Won't you return the enclosed questionnaire so the second batch of materials can be sent to you immediately?

Thank you.

Sincerely,

Sheldon Mendelson

Sheldon Mendelson

APPENDIX E

SECOND FOLLOW-UP LETTER

COLORADO
STATE
UNIVERSITY
FORT COLLINS
COLORADO
80521

department of vocational education

November 7, 1972

Dear Participant:

Won't you continue in assisting me in helping to make Project Recordkeeping Success a success by filling out and returning the questionnaire(s) to me in the enclosed envelope.

In the meantime, you will find enclosed a newsletter, an employees interview guide to be used in conjunction with the newsletter and corrections to Chapter 5 workbook key.

Looking forward to hearing from you real soon. Thank you.

Sincerely,

Sheldon Mendelson

Sheldon Mendelson

APPENDIX F

PERFORMANCE CLINIC, PERFORMANCE TRYOUT, TEACHER'S KEY

RECORDKEEPING CLINIC 1

NAME _____ DATE _____

SECTION 1 — *Circle the incorrect word or words in each statement. Then write in the answer column the word or words that correct the statement.*

ANSWER

Example: Records are papers on which people write things they want to (forget.) remember

1. Forms hinder the recordkeeper in organizing information. _____
2. Few forms need to have a title. _____
3. Handwriting that is easily read by others is illegible. _____
4. Usually, the date is recorded in the last column of a form. _____
5. Information organized on a form is harder to read than information written out on a paper. _____
6. Information is recorded in pencil so it can be easily kept and read. _____
7. In a money column, the vertical rule takes the place of the dollar sign. _____
8. To check information or data means to record it. _____
9. On a form, each row should have a heading. _____
10. Recordkeepers consider erasures to be acceptable. _____

SECTION 2 — *Complete each of the following statements by supplying the missing word.*

11. The narrow part of a date column is used to record the (?) of the month. _____
12. To save time, information is recorded on (?). _____
13. When two numbers or other items of information are written in reverse order, they are said to be (?). _____
14. An entry on a form is the information recorded in one (?). _____
15. Long numbers, such as 34,861,592, should be read in (?). _____

PERFORMANCE TRYOUT 1

NAME_____ DATE_____

Scoring: *From 100 possible points, deduct 6 points for each incorrect answer.*

SECTION 1 — *Answer each question by circling Yes or No.*

		ANSWER
1.	Is this TRYOUT TEST a record?	YES NO
2.	Does the success of a business often depend on how efficiently its records are kept?	YES NO
3.	Are dollar signs recorded on forms so that dollar and cent amounts are not confused?	YES NO
4.	Should records be written so that anyone can read them?	YES NO
5.	To correct an error, should a recordkeeper completely block out the incorrect information and then write the correct information beside it?	YES NO
6.	Is information organized horizontally in rows?	YES NO
7.	Is it the same thing to audit information as it is to check it?	YES NO
8.	Is the wide part of the date column for the month and the day?	YES NO
9.	Does the heading of a column explain the information it contains?	YES NO
10.	Does the heavy vertical rule in a money column take the place of the decimal point between dollar and cent amounts?	YES NO
11.	Is legible handwriting hard to read?	YES NO
12.	When comparing items, should a ruler be used to help focus attention on the items being compared?	YES NO

SECTION 2 — *Compare each pair of items below. If the words or numbers in each pair are exactly alike, write* **alike** *in answer space. If the words or numbers differ in any way, write* **different** *in the answer space.*

13.	667 Eighth Avenue	676 Eighth Avenue	_____
14.	396-117-8442	396-117-8442	_____
15.	Departure 6:50 A.M.	Departure 6:50 a.m.	_____
16.	No. 18,875.887	No. 18,875,887	_____
17.	Miss Georgia Klein	Mrs. Georgia Klein	_____

KEY

CHAPTER 1

Study Guide	Try-out Test
1. hinder help	1. Yes
2. few all	2. Yes
3. illegible legible	3. No
4. last first	4. Yes
5. harder easier	5. No
6. pencil ink	6. Yes
7. dollar sign decimal point	7. Yes
8. record audit	8. No
9. row column	9. Yes
10. acceptable unacceptable	10. Yes
	11. No
11. day	12. Yes
12. forms	
13. transposed	13. different
14. row	14. alike
15. groups	15. different
	16. different
	17. different

KEY

CHAPTER 2

Study Guide

1. payee drawer
2. after before
3. principal interest
4. oral written
5. checking savings
6. paid
7. drawer's
8. overdraw
9. outstanding
10. withdrawal
11. reconciliation
12. number
13. maker
14. maturity
15. November 8

Try-out Test

1. c
2. a
3. b
4. a
5. b
6. No
7. Yes
8. No
9. Yes
10. No
11. No
12. Yes
13. bank's
14. checkbook balance
15. bank statement bal
16. $172.81
17. $172.81

CHAPTER 3 - KEY

Study Guide

1. a budget an income and expense
2. receipt voucher
3. check book cash journal
4. special classified
5. secretary treasurer

6. audit
7. pencil
8. description
9. authorization
10. words

11. $33.75
12. $11
13. $6.90
14. $158.55
15. ($26)

Try-out Test

1. No
2. Yes
3. Yes
4. No
5. Yes
6. No
7. No
8. Yes
9. No
10. No
11. No

12. 14.90
13. 4.92
14. √
15. 24.54
16. 1.23
17. 25.77

CHAPTER 4 - KEY

Study Guide

1. alphabetical itemized
2. income ownership
3. paid surrender
4. ownership expense
5. is worth owns
6. fixed
7. variable
8. variable
9. fixed
10. variable
11. fixed
12. variable
13. variable
14. asset
15. liability
16. liability
17. asset
18. asset
19. asset
20. liability
21. asset

Try-out Test

1. No
2. Yes
3. Yes
4. No
5. Yes
6. No
7. No
8. Yes
9. Yes
10. No
11. Charles Webster
12. Family Ownership Record
13. $44,008
14. $23,150
15. $20,858
16. $21,226
17. $26,108

CHAPTER 5 - KEY

Study Guide

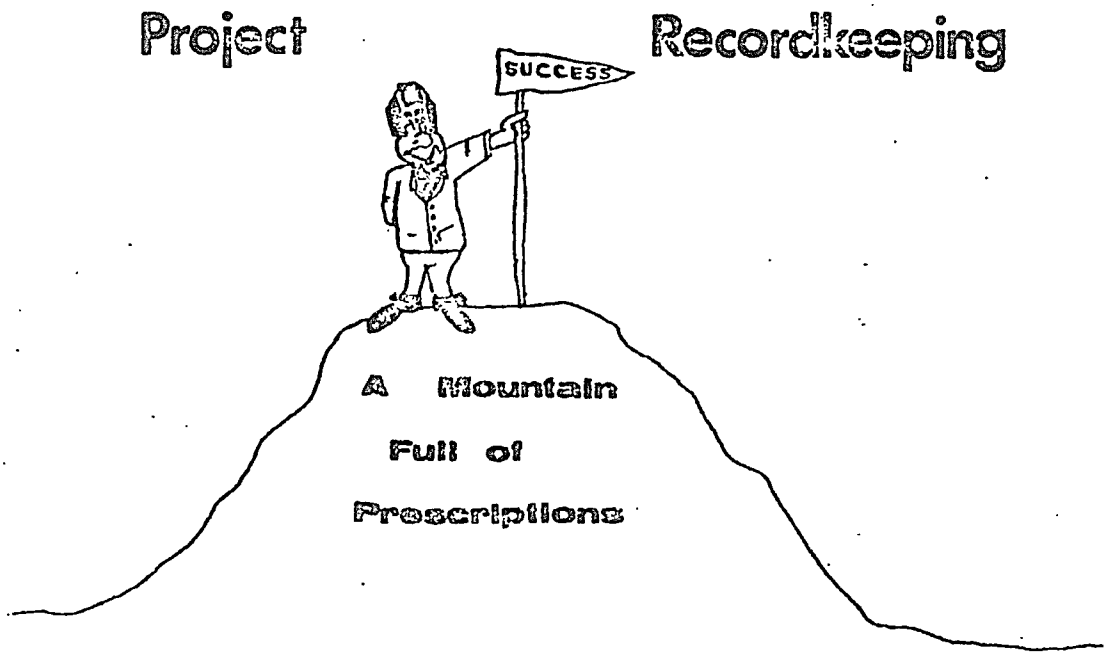
1. self-employed employee
2. an identification a social security
3. benefits income
4. standardize itemize
5. Benefits Contributions
6. benefits
7. Form 1040
8. dependent
9. $500
10. 3%
11. $.70
12. $1,007.50
13. $39.78
14. $65.55
15. $2,645

Try-out Test

1. No
2. Yes
3. Yes
4. No
5. No
6. Yes
7. No
8. No
9. No
10. Yes
11. 4
12. $15,176
13. $2,571
14. $10,005
15. $11,576
16. $1,821.10
17. $30.10 due

APPENDIX G

NEWSLETTER



HANDWRITING ON THE WALL

An excellent idea for the recordkeeping teacher who wants to emphasize better business penmanship is to get a leading banker or insurance agent to provide a sample of his good handwriting. He might write something like "Best wishes to the recordkeeping students" and sign his name. Then, get the art department to assist in making an enlargement so that it can be put on a large poster for the students to see from their seats while they are in class. A photographer also can enlarge the message so that it can be seen by everyone. This is a nice addition to any other handwriting samples of the Spencerian type that the teacher might have. Students will often pay attention to the legible handwriting of known business people.

SCHOOL NURSE--THE MYSTERY OF THE MISSING RECORD!!

Invite the school nurse into your class to tell what happens when a health record or a folder of a student is missing. One of the important aspects of recordkeeping instruction is teaching the students to keep their work organized and what happens when the records are lost or mislaid. A school nurse can really tell it "like it is."

MIRROR, MIRROR, WHO'S THAT GUY?

One recordkeeping teacher had luck in hanging a full-view mirror in his recordkeeping classroom. The idea being that students can look at themselves and get a feel of what image they are projecting. Recordkeeping students who want part-time jobs, Saturday job, or summer employment opportunities need to constantly see what image they are projecting to potential employers. The mirror is a constant reminder of the need to look well in the eyes of the employer who may have customers and patrons who have certain expectations of the people they see in business. Bonus: Students may want to discuss their appearance with you.

BOE CO-OP STUDENT SAYS IT'S FUN

Another excellent idea is to invite a BOE co-op student to visit the class and describe what he or she is doing on the job. One way is to have them tell what they do on a typical day. Other ideas include what their initial interview was like, employee benefits, and other experiences they have on the job. Have them describe the equipment they use, office etiquette, and office attitudes.

HERO VISITS CLASS

Another excellent visitor for in the class is a student from the Home Economics Related Occupations (HERO) class who has a part-time job. If such a person is available in your school, the visit to the class can be very profitable. Again, have them describe a typical day's work and question them on the human relations part of their employment as well as example of any records that must be kept. These records will make good visual aids. Frequently young people who have jobs in restaurants or child-care centers must keep some kinds of records. On the whole, the experience of a young person obtaining and holding a part-time job is a valuable and motivating factor with the students.

DECA SPEAKER TELLS ABOUT SALES RECORDS

Another student who has a part-time job from the distributive education program will make an excellent speaker on sales records and sales slips. Often, the president of the Distributive Education Clubs of America (local club) is an excellent speaker. Again, have the student tell and describe their typical day's work, the records kept, operation of the cash register system and other interesting items. Have the student bring examples of records being used on the job. This student frequently also can give information on what kind of image that must be projected to the public in order for the employer to run his business profitably. The DE student must always be concerned with proper dress and grooming.

COUNSELOR EMPHASIZES JOB ATTITUDES

Invite one of the school counselors who has contact with employers to talk to the class on job attitudes. How important is responsibility, dependability, courteous behavior toward customers, and so on. Frequently, the counselor can relate specific things that happen to students in the school. A visit, even of 15 or 20 minutes in the class, will spark the class for the next few days. You might want to invite an employer to accept a similar class visit.

KILO-LETER-METER

Recordkeeping students should know the metric system of measurement which will be coming into use in the next few years throughout the entire United States. "I want a kilo of beefsteak." "Cut me a meter of red ribbon." "I would like a liter of cola." These may be common requests within the next few years. Your students may appreciate being in the "know" about what is happening. A kilo (kilogram) of beefsteak will be a little over two pounds. This won't be hard for the students to remember. A meter of red ribbon will be a little over a yard, actually over 39 inches. A liter of cola will be approximately one quart. These new measurements will be easy for students to learn and become acquainted with.

APPENDIX H

LETTER REQUESTING TEACHERS TO "JOT DOWN" AN INNOVATIVE IDEA OR SUGGESTION AND SUBSEQUENT NEWSLETTER

COLORADO
STATE
UNIVERSITY
FORT COLLINS
COLORADO
80521

department of vocational education

November 16, 1972

Dear Participant:

Many of us are doing educational "things" in our classrooms which would be of interest and value to each other.

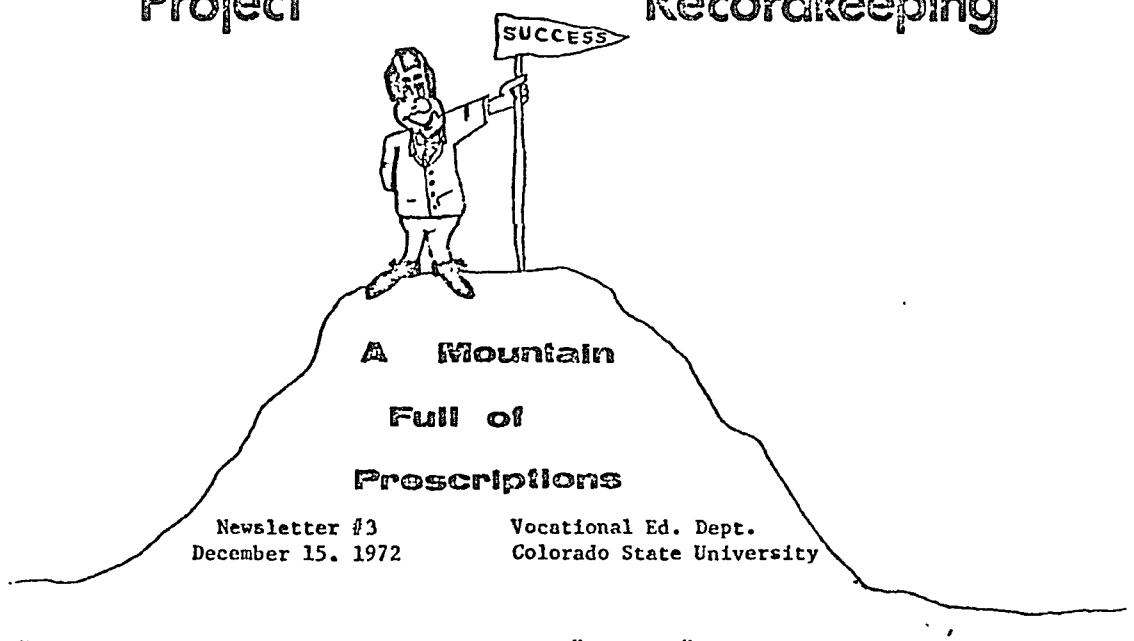
Consequently, for the next newsletter we would like to publish ideas or techniques you have found to be worthwhile in improving learning and increasing and sustaining motivation in the classroom.

Won't you "jot" down a few sentences below explaining a particular idea or technique you have found worthwhile so we all may benefit and then return in the enclosed envelope?

May we publish your idea or technique in the next newsletter?_____
Please sign you name below if we can include your name and address in the newsletter .....
.....

Thank you
Sheldon Mendelson
Sheldon Mendelson

Project Recordkeeping



Newsletter #3
December 15, 1972

Vocational Ed. Dept.
Colorado State University

"CHECKING" THE SYSTEM

A recordkeeping teacher from Massachusetts splits up the class into four groups. One group represents tellers; another, drawers; another, Federal Reserve Bankers, and payees. The drawers write checks. The teacher then has one drawer cash the check and follow the movement of the check through the different groups until he receives it again. The rest of the students are able to follow the banking cycle much easier because they can "see" it.

--Linda Portnoy
Beverly High School
Beverly, MA

"KNOW THY NEIGHBOR"

At the beginning of a new school year, an Arizona recordkeeping teacher uses a portion of the first few days in class by having one row of students each day introduce themselves individually to the rest of the class. Each student tells about his skills, family, where he grew up and his likes and dislikes. Subsequently, a volunteer then recites what he has learned about each of his

OVER

"REGISTER" YOUR WORK

An innovative Colorado recordkeeping teacher encourages his students to work at their own pace on various recordkeeping assignments. When a problem is completed the student obtains an answer book from the teacher and proceeds to check his own work--circling all errors. The student then enters the work in a register labeled "work to be recorded." The teacher looks over the work and if it is O.K., the student receives credit and the work is placed in a student register. If the work has too many errors or is not legible, the student may be asked to do a similar problem over again in order to receive credit.

--Paul Diekhoff
Fairview High School
Boulder, CO

SEEING IT LIKE IT IS

A New York teacher likes to give his students first-hand experiences as a way of familiarizing students with different recordkeeping jobs. He makes appointments with area merchants so the students can see the jobs and processes they are hearing and reading about actually performed in a business setting. --Donald Andrews
Batavia High School
Batavia, NY

classmates. An extra-credit test is given a few days later asking for the name and a particular fact about each student. Students who perform well are honored as being one step ahead on their way to success in business.

--Dave Reading
Maryvale High School
Phoenix, AZ

MAKING HIS MARK

When a Florida recordkeeping teacher teaches a unit, she distributes a red pencil to each student after he has finished an exercise. She then has each student check his own paper. After the student has marked his own paper with the red pencil, the teacher proofreads the paper before assigning a grade. If the student has discovered an error she puts an O.K. by that error to show the student is aware of his own mistakes. She finds the students are very careful and scrupulously honest when marking their own papers.

--Fay Brooks
Dixie Hollins High Sch
St. Petersburg, FL

SIGN YOUR NAME ON THE DOTTED LINE

Before a teacher in Oregon hands out assignment sheets for the school term to each student, he hands out a contract which includes the amount of material the student must do and the amount of time he must spend to get an A, B, or C. This permits the teacher to spend more time with the student who is having difficulty with the material while the more able student can work alone.

--Carl Polla
Silverton Union High
Silverton, OR

STUDENT RESPONSIBILITIES

Another Arizonan likes to suggest that students should begin to develop the habit of saving regularly so he gives his students extra credit if they go to a bank and open their own savings account.

Similarly, when a student reaches the age when he can legally work, he has that student apply for a social security number which gives the student the attitude that he is a "recognizable" person, if not by name then at least by his own individual number.

Finally, the teacher likes to use current materials when teaching particular units, such as income tax. Current materials are up to date and provide answers which the student can use now!!

--Eric Batchelor
Coolidge High School
Coolidge, AZ

STUDENT CREATIVITY

An idea that I have found very helpful in the classroom is to turn the classroom into a large gallery where students can prepare posters, pictures, or any exhibit they wish to on a particular recordkeeping topic. Each student puts a price on his project. The teacher then distributes "play" money to each student and each student bids for the particular project they would like to purchase. This technique teaches the student discipline in the spending of money and allows him to be creative at the same time.

--Sheldon Mendelson
Colorado State Univ.

BREAK INTO PRINT

Send one of your clever ideas of teaching or of motivating students. Let's share with other recordkeeping teachers. Every good idea will make teaching easier and less wearing. Let's hear from you.

--Dr. Harry Huffman
Colorado State Univ.

APPENDIX I

TEACHER OPINION SURVEY

TEACHER OPINION SURVEY

The following is a survey of your opinions about various areas in vocational education. There is no correct or incorrect response, so do not hesitate to mark the statements frankly. In answering each statement, please give your OWN personal opinion. Please be sure you DO NOT OMIT ANY STATEMENT. We will include a summary of answers in the next newsletter.

Instructions: On the scale from 1-6, circle the number that corresponds most closely to your opinion about each statement. Use the following scale:

Disagree very much	*1*
Disagree on the whole	*2*
Disagree a little	*3*
Agree a little	*4*
Agree on the whole	*5*
Agree very much	*6*

		Disagree ——→ Agree					
1.	Schools can't do much to develop positive attitudes toward work.	1	2	3	4	5	6
2.	We have more vocational programs than we need for the disadvantaged.	1	2	3	4	5	6
3.	Vocational education can do little to alleviate the problems of disadvantaged people.	1	2	3	4	5	6
4.	Students can benefit little from occupational education in the elementary grades.	1	2	3	4	5	6
5.	I think there is no harm in starting occupational preparation for young school children.	1	2	3	4	5	6
6.	Early occupational education may stimulate a better attitude toward school work in later years.	1	2	3	4	5	6
7.	Vocational teachers can make a real contribution to occupational education at the elementary level.	1	2	3	4	5	6
8.	There is no need in the elementary curriculum for the addition of occupational education.	1	2	3	4	5	6
9.	I find that individualized instruction using behavioral objectives is valuable in helping the students succeed.	1	2	3	4	5	6
10.	I believe that it is more important to work with the entire class than to spend a lot of time with individuals.	1	2	3	4	5	6
11.	I accept the idea that individualized instruction using behavioral objectives allows students to experience success more often.	1	2	3	4	5	6

OVER

		Disagree ——▷ Agree					
12.	I regularly use behavioral objectives with individualized learning experiences to help my students develop to their potential.	1	2	3	4	5	6
13.	I argue that increased emphasis on adult vocational programs would eventually reduce inner-city employment.	1	2	3	4	5	6
14.	As part of a teaching team, I could spend more time developing creativity, responsibility, and habits of inquiry in students.	1	2	3	4	5	6
15.	I teach my classes without assistance and discourage others from helping.	1	2	3	4	5	6
16.	I would greatly dislike being a member of a differentiated teaching team.	1	2	3	4	5	6
17.	I uphold the differentiated team teaching concept as permitting a natural exchange of ideas.	1	2	3	4	5	6
18.	I do not work well enough with others to make differentiated team teaching work.	1	2	3	4	5	6
19.	I'm convinced that differentiated team teaching is a waste of time.	1	2	3	4	5	6
20.	Use of differentiated team teaching would allow me to put more varied content into my classes.	1	2	3	4	5	6
21.	I say that differentiated team teaching is asking too much of established teachers.	1	2	3	4	5	6

Please Return in the Enclosed Envelope.
THANK YOU!

Your Name_____

APPENDIX J

INSTRUCTOR WILLINGNESS TO INITIATE ACTION INVENTORY

NAME_____

INSTRUCTOR WILLINGNESS TO
INITIATE ACTION INVENTORY

Directions: Below are some activities you may or may not be doing currently in the classroom. We need some idea of what you are currently doing and what you contemplate on doing in the future. Please categorize the items in the following ways:

Y = Yes, I am using this idea or technique.

N = No, I am not using this idea or technique.

M = I might try this idea or technique.

_____1. You are using a Work Experience Background questionnaire to record student work experiences.

_____2. You are using student work experiences in lesson planning.

_____3. You are having a simulated record shop in the classroom by preparing posters, using one chalkboard, bringing records, and setting them up as if on a sales counter.

_____4. You are discussing with students simple forms the manager of any store might use to keep an inventory of items in stock.

_____5. You are having students describe their experience dealing with sales people.

_____6. You are having students describe their experiences dealing with customers if they have ever been sales people.

_____7. You are using transparencies to illustrate forms and filling in the title of the forms, appropriate headings, and double rules and rows.

_____8. You are providing students with audit reports to attach to his set of homework assignments.

_____9. You are discussing with students the reasons why business managers prefer and pay higher wages to employees who can audit their work and correct errors. You are bringing out the fact that anyone can make mistakes, but people with responsible positions automatically check their work and the work of others.

____10. You are insisting that all work be audited and corrected before it is entered in your class book.

____11. You are maintaining a student progress report on the bulletin board for all assignments and classwork.

12. You are currently maintaining a supplementary materials file including:

_____(a) Notes on ideas and suggestions for teaching various units.
_____(b) Class survey questionnaires and results.
_____(c) Ideas for classroom bulletin boards.
_____(d) Charts obtained from various businesses.
_____(e) Samples of financial statements and recordkeeping forms.
_____(f) Application forms for jobs and schools.
_____(g) Pre-employment tests.
_____(h) Career information
_____(i) Student Self-evaluation Forms
_____(j) Transparencies
_____(k) Cartoons
_____(l) Flash cards
_____(m) Newspaper and magazine clippings
_____(n) Case studies
_____(o) Pamphlets about banking, money management, and telephone usage
_____(p) Flowchart, templates
_____(q) Number verification and vocabulary drills
_____(r) Business games

_____13. You are appointing a student each week to keep the files up to date.

_____14. You are making different students responsible for contributing material to various categories within the file.

_____15. You are using adding machines and calculators in your classroom to simulate realism and help students prepare for job opportunities.

_____16. You are familiarizing your students with the cash register for acquainting students with sales procedures and the handling of cash transactions.

_____17. You are periodically posting models of good handwriting for reference, including models containing such recordkeeping terms as cash receipts, income, expenses, purchases, and sales.

_____18. You are using a handwriting evaluation scale so that students can rate their handwriting and that of their classmates.

_____19. You are using ruled chalkboards.

_____20. You are having students take photographs with their own cameras of other students using adding machines in class, students working at part-time jobs, and employees punching time cards.

_____21. You are meeting regularly with a student advisory committee to discuss such subjects as teaching methods, classroom activities, grading criteria, and the amount of material that can be successfully covered during a grading period.

APPENDIX K

INSTRUCTOR TEACHING METHODS INVENTORY

INSTRUCTOR TEACHING METHODS INVENTORY

INSTRUCTOR'S NAME_____

Instructions: On the scale from 1 to 5 circle the number that best describes the frequency you use each instructional technique. For example, if you use the technique consistently you would circle number 5.

		Never → Often				
1.	You develop behavioral objectives to motivate your students.	1	2	3	4	5
2.	You explain the relevance of the work students are asked to do to the students' personal lives and to the world of work.	1	2	3	4	5
3.	You explain to the student at the beginning of the school year the criteria for assessing the quality of their attitudes and work habits.	1	2	3	4	5
4.	You encourage students to share work experiences with one another.	1	2	3	4	5
5.	You discuss current recordkeeping and clerical jobs that are available.	1	2	3	4	5
6.	You encourage students to continually study in order to be able to adopt to changes in the job market.	1	2	3	4	5
7.	You try to find out what each student's ambitions are so you can help them achieve their goals.	1	2	3	4	5
8.	You encourage and recognize student achievement by commenting on each student's progress.	1	2	3	4	5
9.	You establish realistic academic requirements and adhere to them.	1	2	3	4	5
10.	You prepare daily lesson plans.	1	2	3	4	5

11. YOU USE:	Never ——▷Often				
Slides	1	2	3	4	5
Transcribing belts	1	2	3	4	5
Group discussion	1	2	3	4	5
Cases	1	2	3	4	5
Projects	1	2	3	4	5
Team teaching	1	2	3	4	5
A guidance counselor	1	2	3	4	5
Guest speakers	1	2	3	4	5
Role playing	1	2	3	4	5
Cartoons	1	2	3	4	5
Games	1	2	3	4	5
Observations	1	2	3	4	5
Interviews	1	2	3	4	5
News gathering	1	2	3	4	5
Field trips	1	2	3	4	5
Exhibits	1	2	3	4	5
Charts	1	2	3	4	5
Chalkboards	1	2	3	4	5
Photographs	1	2	3	4	5
Opaque or overhead projectors	1	2	3	4	5
Radio and TV	1	2	3	4	5

		Never → Often				
12.	You explain all assignments and instructions thoroughly.	1	2	3	4	5
13.	You make yourself available for remedial work and individual instruction outside of class.	1	2	3	4	5
14.	You discuss instructional methods with peers.	1	2	3	4	5
15.	You assess which teaching techniques are equally suitable to your own personality and the individual interests of your students.	1	2	3	4	5
16.	You briefly explain the previous day's lessons before presenting new subject matter.	1	2	3	4	5
17.	You administer a daily quiz to the class to let you and each student know of his progress.	1	2	3	4	5
18.	You assess the abilities and knowledge of each student in order to determine what topics need more emphasis in the recordkeeping course.	1	2	3	4	5
19.	You participate in in-service teacher training programs in order to keep abreast of changes in subject matter, philosophy, and procedures.	1	2	3	4	5
20.	You evaluate your students using the following criteria:					
	a. Completion and accuracy of all assignments.	1	2	3	4	5
	b. Improvements and attitudes and work habits.	1	2	3	4	5
	c. Scores on tests.	1	2	3	4	5

- -

How many students do you anticipate having in your recordkeeping class this year? ☐

T H A N K Y O U

APPENDIX L

BUSINESS CAREER CHOICE INVENTORY

Business Career Choice Inventory

YOUR NAME _____ HIGH SCHOOL NAME _____

TEACHER'S NAME _____

Instructions:

Please answer each of the 15 items that follow. At least one check mark or entry should be entered for each numbered item.

Purpose:

This form is designed to identify whether or not your record keeping teacher has influenced you in selecting a career in a business occupation.

1. What is your age? (Check one)

Under 15	○	17	○
15	○	18	○
16	○	over 18	○

2. What are your present plans after high school? (After the summer vacation) (Check one)

Go to work immediately	○	Go in the Military Service	○
Go to a community or junior college	○	None	○
Go to a Voc-Tech School	○	Other _____	
Go to a 4-Year College	○		

3. What is your present career choice after finishing your education? (Check one)

Filling station manager	○	Secretary	○
Waitress	○	Programmer	○
Truck Driver	○	Key Puncher	○
Working for Parents	○	Retail Sales	○
Car Hop	○	Banker	○
Government	○	Accountant	○
Cashier	○	Other _____	

4. How satisfied are you at this time with your plans after finishing your education? (Check one)

Very satisfied	○	Mildly dissatisfied	○
Satisfied	○	Very dissatisfied	○

5. How strong is your feeling that you will continue toward your career choice? (Check one)

Very strong	○	Medium	○
Strong	○	Undecided	○

---

6. Counseling and/or testing received from a school counselor or person other than parents. Check any of the below items that apply to your situation about business career opportunities.

No counseling or testing received	○
Have discussed business career opportunities	○
Have obtained and read brochures	○
I asked to be given career interest tests	○
I have had the test results interpreted to me	○
Observed person at work in my chosen business occupation	○

---

7. Parents' interests and attitudes. Check any of the below items that apply to your situation about career choice.

Did not talk with parents	○
Have talked with parents	○
Parent(s) in an occupation similar to my choice	○
My parents own a business related to my objective	○

---

8. Have you had any work experience in the area of your career choice? For example, a student might have worked as a service station attendant because he wanted to become a service station manager. Another student might have worked as a typist because she wants to become a legal secretary. (Check one)

I have work experience in the area of my career choice.	○
I have had work experience, but not in the area of my career choice.	○
I have no work experience at all.	○

---

9. Has your part-time or full-time work experience affected your choice of a related career?

My employment influenced me in pursuing a related career	○
My employment did not influence me in pursuing a related career	○
I have no work experience at all.	○
My work experience influenced me in pursuing a different career	○

---

10. When you enter the occupation related to your career choice, what salary would you expect to receive? (Check one)

Less than $300 per month	○	$401-$500 per month	○
$300-400 per month	○	More than $500 per month	○

---

12. Please check all high school business courses below that you have completed or will have completed by the time you finish high school.

- None ○
- Bookkeeping 1st yr. ○
- Bookkeeping 2nd yr. ○
- Business Math ○
- Secretarial Practice ○
- Business Machines ○
- Shorthand & Transcription 1st yr. ○
- Shorthand & Transcription 2nd yr. ○
- Business English ○
- General Business ○
- Notehand ○
- Business Law ○
- Business Management ○
- Consumer Economics ○
- Data Processing 1st yr. ○
- Data Processing 2nd yr. ○
- Consumer Economics ○
- Typewriting 1st yr. ○
- Typewriting 2nd yr. ○
- Dist. Education 1st yr. ○
- Dist. Education 2nd yr. ○
- Office Practice ○
- List other high school business courses ○

_____

_____

_____

13. What is your approximate high school grade average? (Check one)

- A to A- ○
- B+ to B- ○
- C+ to C- ○
- D+ to D- ○

14. How would you rate the recordkeeping course in relationship to its contribution to your career choice? (Check one)

- Excellent ○
- Above Average ○
- Average ○
- Below Average ○

15. How has your recordkeeping teacher influenced your career choice? (You may check more than one)

- The teacher has not influenced my career choice ○
- Guest Speakers ○
- Counseling ○
- Career tests ○
- Field trips ○
- Classroom assignments ○
- Teacher relating his own work experience ○
- Slides, films, etc. ○
- Job simulation ○
- Other _____

_____

APPENDIX M

RECORDKEEPING ACHIEVEMENT INVENTORY

RECORDKEEPING ACHIEVEMENT INVENTORY

Name of Teacher _____ Your Name _____

Name of School _____

Directions: *You will have 40 minutes for this exam. Work as accurately and as rapidly as possible. Work only those problems the teacher has instructed you to work. Room is provided on the answer sheet for any calculations, but you may also use your own scratch paper.*

Unit I *Compare each pair of the items below. If the words or numbers in each pair are alike, write alike in the space. If different, write different in the space.*

1.	Chicago Ill.	Chicago, Ill.	(1) _____
2.	41,296,588	41,296,588	(2) _____
3.	Sun sets at 7:05	Sun set at 7:05	(3) _____

Answer each question by entering True or False in the space.

4. Auditing information and checking it are the same. (4) _____
5. The heading of a column explains the information a record contains. (5) _____
6. The heavy vertical rule in a money column takes the place of the decimal point between dollar and cent amounts. (6) _____

Unit 2 *Examine and complete the bank reconciliation.*

Given: $2.50 service charge appears on the bank statement. Fill in the lines on the bank reconciliation.

Outstanding checks are $183.50 and $44. Fill in the lines on the bank reconciliation.

BARBARA RIVERA
BANK RECONCILIATION
NOVEMBER 1, 19-

BANK STATEMENT BALANCE $345.00

Less: _____ .....

ADJUSTED BANK BALANCE .....(8) _____

CHECKBOOK BALANCE ..... $ 120.00

Less: _____ .....

ADJUSTED CHECKBOOK BALANCE ....(7) _____

Unit 3 *Audit the portion of the invoice shown below. Cross out any incorrect figure and write the correct figure on the answer line. If the figure does not need to be changed, place a check mark on the answer line.*

QUANTITY	Description	Unit Price	Total	
4	Boxes Crayons	$ 1.49	$5.96	(9)
7	Boxes Chalk	.98	6.94	(10)
6	Boxes Pencils	.59	3.54	(11)
			16.34	(12)
		Sales Tax-4%	.65	(13)
			$ 16.99	(14)

Unit 4 *Use the family ownership information below to answer the questions.*

Home	$48,500	Automobile	$3100
Mortgage on Home	17,500	Life Insurance Loan	850
Bank Loan	3,200	Life Insurance (Cash Value)	4100
Household Furnishings	8,900	Checking account	900

What is the amount of the total assets? (15) $_____

What is the amount of the total liabilities? (16) $_____

What is the amount of net ownership? (17) $_____

Unit 5 *Using the tax information of Brian and Alexandria Randall, answer the question.*

Children, 3	
Mr. Randall's gross wages	$12,500
Mrs. Randall's gross wages	7,900
Interest Income	38
Contributions	185
Interest Expense	1,325
Taxes	1,780
Other Deductions	200

What is the least amount of taxable income? (18) $_____

Hint: Each exemption is $750).

Unit 6 *If a petty cash fund was established at $100 and $28.85 remains, how much is needed to replenish the fund?*

(19) $ _____

If a customer gives a $20 bill for a sale of $16.51, how many dimes would be included in his change?

(20) _____

Unit 7 Compute:

Straight Piece Rate: $.075 per unit
Differential Piece Rate: .05 for first 50 units.
.055 for next 75 units.
.065 for next 100 units.

Name	Units Completed	St.Piece Rate	Differential Piece Rate
McGuire, M.	130	$_____	$_____
		(21)	(22)

Unit 8 Complete the voucher.

Hours worked for the week 47
Regular Rate $4
Overtime at 1½ times regular rate
F.I.C.A. is 5.65%

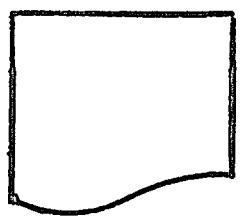
EAS-L Mfg. Co. VOUCHER No. 8-11
NAME: Michael Doe

REGULAR PAY	OVERTIME PAY	GROSS PAY	DEDUCTIONS			NET AMOUNT PAID
HRS. AMT.	HRS. AMT.		F.I.C.	F.W.T.	INS.	
(23) $	(24) (25) $	(26) $	(27)	(28) $18.33	6.25	(29) $ 104

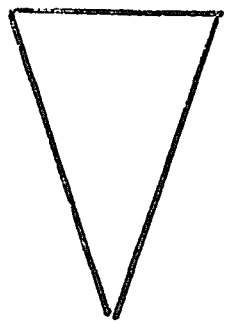
Unit 9 Complete the Sales Slip.

QUANTITY	Description	UNIT PRICE	AMOUNT	
3	TOWELS	$ .99	(30) $	
6	WASHCLOTHES	.35	(31)	
4	SHEETS	3.49	(32)	
4	PILLOW CASES	1.25	(33)	
office Copy	PAID / ORDER CHARGE	5% SALES TAX	(34)	
DATE 9/18	STORE 6 / SOLD by BAK	SHIPPING CHARGE		32
PURCHASED by Mrs. Talbot		TOTAL	(35) $	
Sales Slip No. 9117				

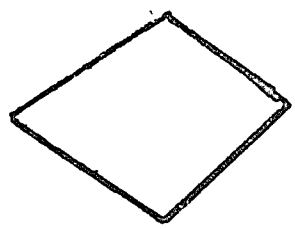
Unit 10 In the answer column, write the letter of the flow chart symbol that should be used for each part of the flow chart below.



A



B



C

Is the customer invoice correct? (36) _____

Customer statement (document) (37) _____

File for inventory report (38) _____

Unit 11 *Circle the incorrect word or words in each statement. Then write in the answer column the word or words that correct the statement.*

Punched card data processing and electronic data processing are referred to as mechanical data processing. (39) _____

Output is data that is to be processed. (40) _____

The control unit of the central processor of a computer system holds programs and dates. (41) _____

Punched card machines read the cards by means of converting the punched holes into electrical circuits. (42) _____

The operator of a card-punch machine is called a plugboard operator. (43) _____

Unit 12 *Look at the invoice and determine what amount Austin Trailer Parts, Inc., should pay on May 11.*

EZ HAULING INC.
119 SAND ST.
BAYONNE, NEW JERSEY

SOLD TO: AUSTIN TRAILER PARTS INC.
11. FOUNTAIN AVE
CINCINNATI, OHIO

INVOICE DATE: MAY 8, 19—
TERMS: 3/5; 2/10; n/30

Purchase Order #—A | DATE: MAY 5 | SHIPPED VIA | NUMBER OF BOXES

QUANTITY	DESCRIPTION	UNIT PRICE	AMOUNT
80	CLAMPS	$7.50	$600

Your answer (44) $_____

Unit 13 *In the answer column, write the letter of the item in each group that should be filed FIRST.*

(a) 2-913-650 (b) 2-139-506 (c) 2-993-560 (d) 2-923-006 (45) _____

(a) .023-AX (b) .123-BD (c) .093-RM (d) .201-TV (46) _____

(a) Lee Shoe Store (b) Ronald H. Lee (c) R. H. Lee (47) _____

Unit 14 *For each item below, circle YES if cash proves. If cash doesn't prove -- cash on hand and in checking account is not the same as ending cash balance -- circle NO.*

Beginning Cash Balance	Receipts	Payments	Cash on Hand and in checking acct.	Does cash prove?
$1,025	$1,000	$ 618	$1,417	(48) YES NO
9,118	49	3,806	5,261	(49) YES NO
705	1,009	453	1,261	(50) YES NO

Unit 15 Fill in the blanks on the partially completed balance sheet.

GOOD TIMES FILM DISTRIBUTORS INC.

BALANCE SHEET

DECEMBER 31, 19–

(51)			(54)		
CASH	$4500	00	ACCOUNTS PAYABLE		
ACCOUNTS RECEIVABLE:			J. FRANK	$3101.10	
B. THOMAS	4100	00	VISTA FILMS	9112.14	
OFFICE FURNITURE	3200	00	A. ADAMS	3606.00	
OFFICE MACHINES	5960	20	TOTAL (55)	$	(56)
			(57)		
			CLAY PIPER, CAPITAL	$	(58)
TOTAL (52)	$	(53)	TOTAL	$	(59)

APPENDIX N

LETTER REQUESTING PARTICIPANTS TO ADMINISTER RECORDKEEPING ACHIEVEMENT EXAMINATION

COLORADO
STATE
UNIVERSITY
FORT COLLINS
COLORADO
80521

department of vocational education

December 15, 1972

Dear Participant:

Will you administer a test covering chapters 1-15? It will take no longer than 35-40 minutes to administer and will be easy to score.

We will make certain that the student will find the test interesting and worthwhile. At the same time, the test will also provide you with good student scores and if you desire, we will send you a summary of the results.

Please respond to the questions below.

Are you currently using the publisher's exam? *YES* *NO*

*When can we send you the test?*_____

*How many copies of the test do you need?*_____

Will you return all the tests to us for data analysis? YES NO

*Your Name*_____

Thank you for your help. Please return this letter in the enclosed envelope.

Sincerely,

Sheldon Mendelson

Sheldon Mendelson

sg
Enclosure

APPENDIX O

LETTER OF INSTRUCTIONS FOR ADMINISTERING RECORDKEEPING ACHIEVEMENT INVENTORY AND BUSINESS CAREER CHOICE INVENTORY

ADMINISTRATION INSTRUCTIONS FOR RECORDKEEPING ACHIEVEMENT INVENTORY AND BUSINESS CAREER CHOICE INVENTORY

The following information and instructions are provided to assist you in administering the Recordkeeping Achievement Inventory and to help insure that all students involved in this study will have an equal time to complete the test.

If your classes are fifty minutes or less, it is requested that the Business Career Choice Inventory be completed by the students the day PRIOR to the administration of the Recordkeeping Achievement Inventory.

TEST ADMINISTRATION INSTRUCTIONS

1. We feel it is important that the students be informed that this examination will have some effect on their course mark because you are going to record the grade. The students will have a tendency to do better work if they believe the examination will have some effect upon their grade.

2. Distribute the examination to the students and point out to the students the problem(s) they DO NOT HAVE TO DO, if any.

3. Request the students place their names, their high school name and your name in the spaces provided at the top of the examination.

4. Request that the students use the extra space in each problem for scratch work. The students are permitted, if they wish, to use their own scratch paper.

5. Inform the students that "YOU WILL NOW HAVE 40 MINUTES TO COMPLETE THIS EXAMINATION. BEGIN WORK."

APPENDIX P

THANK YOU LETTER SENT TO EACH PARTICIPANT

COLORADO
STATE UNIVERSITY
department of vocational education
FORT COLLINS
COLORADO
80521

Dear Participant:

Thank you for your continued interest and participation in helping to make the project a success. I hope the material and ideas you have previously received have made an impact on student interest and learning.

You will find enclosed:

1. Copies of the RECORDKEEPING ACHIEVEMENT INVENTORY which will provide you with a measure of each of your students' performance.

2. Copies of the BUSINESS CAREER CHOICE INVENTORY to be completed by the students of the classes tested.

3. An answer key to the RECORDKEEPING ACHIEVEMENT INVENTORY.

4. A stamped, self-addressed return envelope for your convenience in returning the above materials.

The exam is structured so that you can test the students on only the material you have covered in class. Before passing out the exam, cross out the problem(s) you do not want the students to do, if any, and mention this fact to the students after you have passed out the exam. Use 100% as a perfect score and grade each student's paper accordingly.

It is requested that you administer the BUSINESS CAREER CHOICE INVENTORY the day prior to the administration of the exam. It is important that each student who takes the exam complete the RECORDKEEPING CAREER CHOICE INVENTORY. Each student should take no more than 10 or 15 minutes to complete the CAREER CHOICE INVENTORY.

After scoring the exam and recording the scores, please return it and the CAREER CHOICE INVENTORY in the enclosed envelope for analysis.

By June 1 I hope to provide you with results of the study so your prompt return of the completed material will be appreciated.

Sincerely,

Sheldon Mendelson

SM/md