

AN ABSTRACT OF THE THESIS OF

PAMELA NIEMEYER OLSON for the MASTERS OF SCIENCE
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PERSONAL FINANCE WORKSHOP

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The purpose of this research was to determine the effectiveness of a personal finance workshop as measured by a multiple choice competency test. More specifically the objectives of the study were: 1) to develop a valid instrument for measuring the participants' learning as a result of a two and half day workshop on personal finance, and 2) to use the scores on the competency test to determine if learning occurred as a result of the workshop.

This experimental research used two research designs for evaluating learning resulting from a workshop (treatment). The two designs were the posttest-only control group, a true experiment, and the one group pretest-posttest, a pre-experimental design.

Three instruments were used in data collection: an application form, an attitude survey, and a multiple choice test. The application form provided the demographic data for this research. The attitude survey was administered to the experimental group as a distractor. The third instrument was a competency test developed by this researcher to measure the learning which resulted from the workshop. The test included 30 questions covering five personal

finance concepts addressed at the workshop: 1) consumer decision making, 2) investments, 3) laws and legislation, 4) life insurance and 5) money management.

A one-tailed t-test was used to determine whether a difference existed in the test scores between two groups. An F-ratio was used to determine whether a difference existed when comparing test scores of three or more groups. Nine null hypotheses were tested with the rejection level set at .05. A difference was found between participants' pretest scores due to previous experience in teaching personal finance. There was also a difference in the posttest scores of the participants who had taken the pretest when compared with the scores of the participants who had not taken the pretest. A significant increase in learning occurred in the area of consumer laws and legislation attributed to the workshop.

Hypotheses not rejected at the .05 level included: 1) no difference in posttest scores of the control group and the posttest scores of the experimental group, 2) no difference in posttest scores of the experimental group when compared with the control group on the following concepts; decision making, money management, investments, and life insurance, and 3) no difference in pretest scores due to educational background of the participants.

EVALUATION OF PARTICIPANTS' LEARNING
RESULTING FROM A PERSONAL FINANCE
WORKSHOP

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EVALUATION OF PARTICIPANTS' LEARNING RESULTING
FROM A PERSONAL FINANCE WORKSHOP

1. INTRODUCTION

In the past decade concern has been expressed about the large number of consumers who are unable to manage their personal finances. In 1967 Dr. Parnell, former Oregon Superintendent of Public Instruction, appointed a statewide advisory committee to examine the need for a mandatory consumer education course (Kienzle, 1973).

Meanwhile, town meetings were held with the Oregon State Board of Education to ensure public input in establishing educational direction in elementary and secondary schools. Moreover, during the 1969-1970 school year the State Board of Education under Title III of the Elementary and Secondary Act assessed Oregon's educational needs through a public survey to further aid in establishing educational priorities. The results of this survey ranked consumer education ninth among a list of 27 educational needs, thus reaffirming the importance of consumer education (Wright, 1970).

As a result of the committee, the town meetings and the needs assessment, on September 22, 1972, the Oregon State Board of Education adopted New Minimum Requirements for high school graduation, among them personal finance and career education. Beginning with the school year 1977-1978 one credit (130 clock hours) of consumer education/economics/personal finance will be required for high school graduation in the state of Oregon (Duncan, 1977). The following is a sample from the program goals which make up the consumer

education/personal finance/economics requirement.

1. Every high school graduate will recognize that sound financial planning is the key to successful personal money management (Fasold, 1972, p. 16).
2. Every high school graduate will understand that the availability of credit to individual consumers varies according to personal and economic factors (Fasold, 1972 p. 30).
3. Every high school graduate will be able to apply the steps in the decision making process to the purchase of goods and services (Fasold, 1972, p. 48).
4. Every high school graduate will understand how in this country's economic system the consumer effects and is effected by the total economy (Fasold, 1972, p. 62).

With the implementation of this new requirement no provision was made for assuring that teachers teaching consumer education/economics/personal finance be qualified or certified. At the present time the consumer education/economics/personal finance requirement is the only required course at the secondary level which does not have special teacher certification. Teachers are not required to demonstrate proficiency in the subject matter until 1980. Persons fulfilling certification requirements after January 1, 1980, who plan to teach in Oregon will be required to include personal finance-related courses in their general education programs. At the present time business education, home economics, mathematics, and social studies teachers make up the majority of the personal finance teachers. It appears that the same disciplines will provide teachers for consumer education/economics/personal finance at least for the immediate future.

Pre-service and in-service programs in consumer education have

been initiated at several Oregon institutions of higher learning to provide subject matter content for teachers of personal finance. Oregon State University has provided courses in personal finance for many years and workshops for teachers of personal finance since 1969. Oregon College of Education has been assisting various school districts with the implementation of the new high school requirement by providing a program for personal finance teachers during the summers of 1974 and 1975. Consumer education programs are in progress at the University of Oregon and Eastern Oregon State University. Southern Oregon State College conducted a workshop dealing with personal finance during the summer of 1976. Portland State University has sponsored a series of personal finance courses offered by various departments under a variety of titles.

With a grant from the American Council of Life Insurance (ACLI), Dr. Anne Keast, Home Economics Education, Oregon State University, conducted workshops during the summer and fall of 1977 for personal finance teachers throughout the state of Oregon. The workshops were an interinstitutional effort of all Oregon four year colleges and universities. The purpose of each workshop was to provide teachers of personal finance with an opportunity to update their knowledge in the following areas: 1) consumer decision making, 2) money management, 3) life insurance, 4) investments, and 5) laws and legislation. The content covered at the workshop was decided upon by a panel of educators after reviewing application forms of prospective participants. The participants had identified what content was most difficult

for them to teach. The panel, composed of three college and university educators, a high school personal finance teacher, and the Oregon Department of Education specialist in personal finance, designed the workshop based upon these responses. The stated objectives of the workshops were as follows:

1. To prepare teachers of consumer education/economics/personal finance in subject matter content.
2. To develop an awareness of the current research findings related to consumer decision making.
3. To develop criteria for selection of resource materials.
4. To develop a plan for implementation of a personal finance concept into classroom teaching (Keast, 1977).

Need for the Study

An evaluation of these workshops can contribute to the enhancement of personal finance education in the state of Oregon in the following three ways: 1) establishing the role that workshops play or can play in the continuing education of personal finance teachers, 2) providing information relative to the proficiency of personal finance teachers, and 3) providing valuable information concerning the adoption of future certification requirements for personal finance teachers. By July 1, 1979, Oregon colleges and universities will be required to submit a proposed program to meet the general requirement for future personal finance teachers. It is desirable to know if one educational background better prepares teachers for teaching personal finance. Currently teachers of personal finance come from a variety of educational backgrounds. This study could aid in

determining the educational backgrounds best suited for teachers of personal finance and thus aid in development of the new mandated curriculum for all public school teachers.

Statement of the Problem

The purpose of this research was to determine the effectiveness of the first two objectives of the workshop. To accomplish this a competency based test was developed and administered to the participants of the workshops. The test measured the participants' learning as a result of the inservice workshop. More specifically the study was designed to:

1. develop a valid measurement instrument and
2. determine if learning occurred as a result of the workshop.

Hypotheses

The following null hypotheses were tested using the one group pretest-posttest experimental design:

1. There will be no difference between pretest scores on the measurement of personal finance concepts of participants of different educational backgrounds.
2. There will be no difference between pretest scores on the measurement of personal finance concepts of participants who have taught personal finance compared with those who have not.

The following null hypothesis was tested by combining the one group pretest-posttest experimental design and the posttest only experimental design:

3. There will be no difference between posttest scores on the measurement of personal finance concepts of participants who received the pretest compared with those who did not.

The following null hypotheses were tested using the posttest-only control group experimental design:

4. There will be no difference between the posttest scores on the measurement of personal finance concepts of participants who were members of the experimental group compared with the control group.
5. There will be no difference between the posttest scores on the measurement of consumer decision making concepts of participants who were members of the experimental group compared with the control group.
6. There will be no difference between the posttest scores on the measurement of money management concepts of participants who were members of the experimental group compared with the control group.
7. There will be no difference between the posttest scores on the measurement of investment concepts of participants who were members of the experimental group compared with the control group.
8. There will be no difference between the posttest scores on the measurement of laws and legislation concepts of participants who were members of the experimental group compared with the control group.
9. There will be no difference between the posttest scores on the measurement of life insurance concepts of participants who were members of the experimental group compared to the control group.

Operational Definitions of Terms

APPLICATION FORM was a form mailed to all personal finance teachers in the state of Oregon. Teachers who returned this form wished to attend one of the workshops. The following information was obtained from the form for research purposes:

educational background, previous teaching experience, and the workshop he/she planned to attend.

ATTITUDE SURVEY was an exercise designed to help the workshop participant better understand his/her values and attitudes about money.

CONSUMER EDUCATION/ECONOMICS/PERSONAL FINANCE is generally referred to as "personal finance". This course will be required of all Oregon high school graduates beginning with the school year 1977-1978 as mandated by the Oregon Board of Education.

CONSUMER DECISION MAKING was one of the five selected concepts covered at the workshop. Current research information on consumer decision making was presented at each workshop.

EDUCATIONAL BACKGROUND refers to the participants' undergraduate area of concentration, i.e., business education, home economics, mathematics, and social studies.

EVALUATION is judging the merit or worth of something (Scriven, 1967).

INVESTMENTS was one of the five selected concepts covered at the workshop. Discussion dealt with the role investments play in family money management and the American economy.

KNOWLEDGE is the recall of specific information, understanding concepts, and applying those concepts.

LAWS AND LEGISLATION was one of the five selected concepts covered at the workshop. Recent consumer laws and legislation were discussed.

LEARNING is indicated by an increase in test scores significant at .05 level.

LIFE INSURANCE was one of the five selected concepts covered at the workshop. The concept of life insurance in a financial plan was discussed.

MONEY MANAGEMENT was one of the five selected concepts covered at the workshop. The concepts of credit and financial planning were discussed.

MULTIPLE CHOICE COMPETENCY TEST was developed by the researcher to measure the learning of participants as a result of the workshop.

PERSONAL FINANCE WORKSHOP was generally referred to as "workshop". A two and half day inservice education program for teachers of personal finance, sponsored by the American Council of Life Insurance.

PREVIOUS TEACHING EXPERIENCE refers to the participants' past experience teaching personal finance.

SELECTED CONCEPTS are the areas which were covered at the workshop and tested for the purposes of this study. The concepts were: consumer decision making, investments, laws and legislation, life insurance, and money management.

TREATMENT and WORKSHOP are used synonymously.

Assumptions of the Study

This study was conducted on the premise of the following assumptions:

1. Personal finance teachers attending the workshop did not differ from those who did not attend the workshop.

2. Scores on the individual tests measured the participants' knowledge on the selected personal finance concepts.

Limitations of the Study

1. Only one form of evaluation, a competency test, was used to measure the participants' learning.
2. The teachers attending the workshop did so as volunteers.
3. A test can never measure the total content in a concept therefore the number of items which could be included imposed a limitation of this study.
4. Generalizability was limited due to size of the sample.
5. No effort was made to determine any differences in test scores due to age and sex of the participant.

II. REVIEW OF LITERATURE

The literature reviewed is organized in the following manner: 1) program evaluation, 2) in-service education, 3) consumer education, and 4) effectiveness of consumer education.

Program Evaluation

Evaluation is judging the merit or worth of something (Stufflebeam, 1976; Scriven, 1967). Program evaluation is a systematic process of determining the effectiveness of educational endeavors in the light of evidence. Evaluation of programs can be thought of as formative or summative (Scriven, 1967). It is a broader concept than measurement.

Differentiating between the terms measurement and evaluation is sometimes difficult. The two terms are related but very different. Measurement is a part of evaluation. It provides the evidence on which evaluation may be based. Educational measurement tends to concentrate on specific, well defined traits. It strives to determine the degree to which that trait is possessed by an individual (Noll, Scannel, and Noll, 1972). Measurement procedures and techniques by themselves cannot determine which students or programs are effective and which are not. A level of acceptance must first be set. Then evaluation may take place (Erickson and Wentling, 1976).

Evaluation has three essential parts. The first element is that of criteria, or stating the objectives. The criteria determine what the program is going to be judged against. The evidence or data is the second element. The judgment or the extent to which the evidence meets the criteria is the third element (Ahmann and Glock, 1975).

In education, as elsewhere, judgments are made with incomplete knowledge, imprecise measurements, and inadequate experience. No error-free system is possible, but improvements can be made. Evaluation is made more valid by lessening arbitrary judgments and using reliable data gathering methods (Stake, 1974).

Evaluation is not just collecting data nor does it always yield positive results. Evaluation may be, but is not always research oriented. It should be remembered that a program's success cannot always be measured (Stake, 1967a).

Uses of Evaluation

The uses of educational evaluation are broad and diverse. Four subgroups have been identified by Tyler (1971). They are:

1. appraisal of the academic achievement of individual students;
2. diagnosis of learning difficulties of an individual student or entire class;
3. appraisal of the educational effectiveness of a curriculum, instructional materials, procedures, and organization arrangements (workshop); and

4. assessment of the educational process of large populations so as to help understand educational problems and develop sound public policy in education.

The first two purposes constitute student evaluation based on the rationale of individual differences, which focuses primarily on the student as an individual. Judgments about educational growth are based on data, that may then be compared with similar peer group data obtained concurrently. The third use of evaluation, that of programs and products, is of greatest concern here and will be discussed later. The fourth is an assessment of educational programs on a national scale (Tyler, 1971).

Educational aims, goals, and objectives are judgment data. Success means coming within the acceptability range. The responsibility of the evaluator is not only to find a reliable measurement but also to determine the range of appropriate acceptance (Stake, 1974).

Evaluation can provide information useful in making decisions about starting new programs, maintaining, modifying, expanding, or discontinuing programs. It can also be helpful in formulating policy and allocating resources (Stufflebeam, 1969).

Evaluators have been concerned with the micro-analysis of the learner's behavior at various times before and after exposure to a lesson, program, treatment, or institution (Stake, 1967a). These evaluations are generally equated with participants' pre

and post measures to test null hypotheses that no change has occurred or that the post performance is at an unacceptable level.

It is important to determine what is meant by program evaluation. Program evaluation can happen in many ways. It can be formal or informal. Evaluation may be internal or external. It may be formative or summative. Formative evaluation is conducted before and during the program and it is used to influence the program while in progress. Summative evaluation focuses on the results of the program. It may be an aggregation of data (Scriven, 1967).

There are several ways in which the evaluation can take place. These are:

1. judgment of authorities about the program,
2. the opinions of the program staff,
3. the opinions of those effected by the program,
4. a comparison of the actual program outcomes with the expected outcomes, and/or
5. a comparison of an executed program with its design.

There is a long tradition in American education favoring the first approach. The second and third approaches tend to be subjective rather than objective. The fourth approach establishes performance criteria for the program recipients. This approach is represented by the most current and scientific information in education evaluation (Ahmann and Glock, 1975).

Accountability of educational programs is crucial to their future. Accountability acknowledges the public's right to know

what actions have been taken in the programs they support and how effective these actions have been. Accountability focuses on the program accomplishing its intent or objectives. Evaluation is imperative especially when accountability to the public or a sponsor is required. Accountability requires more formally documented evidence than is generally now available (Noll, et al., 1972).

The fifth approach to program evaluation is concerned with every aspect of the program, not just the outcomes. The evaluation is primarily a comparison of group performances with the expected or designed program outcome. This approach also deals with the evaluation of the individual. It considers the actual expected events as well as the unexpected events. Therefore, a detailed picture of the entire program at various points in time is the standard for judging. This is a more comprehensive comparison than the other forms of program evaluation (Scriven, 1972).

In the 1930's and 1940's Tyler, a curriculum specialist, and Wrightstone, an educational measurement specialist, researched assessment and evaluations of classroom outcomes. Researchers' use and misuse of the Tyler and Wrightstone methodology has limited effectiveness and creativity in problem solving relative to evaluation by restricting the conceptualization of problems of evaluation and by insisting that techniques adopted for similar problems in the past are the only acceptable methods for use today (Stake, 1967a).

In a large scale evaluation study conducted by Smith and Tyler in 1942 the researchers recognized the contributions that measurement data could make to guidance and administrative decisions. The researchers did not rely upon standardized procedures to obtain and analyze the data. Smith and Tyler accepted the objectives as given without comparing them to other objectives or prioritizing them (Tyler, 1971). Scriven (1967) argued that objectives should be subjected to a value analysis, while Stake (1967b) recommended the development of a science based technology to handle judgment data.

Scriven (1972) believes that evaluation should be more than judgment of the objectives. He suggested that the evaluator must also look at the secondary effects of the treatment. These effects ought to be in line with the general purposes of the program. Scriven advocated "goal free" evaluation. This type of evaluation strategy emphasized the evaluation of actual events of the program and product. Scriven further argued that too much attention to stated goals might be a contaminating step that would mask the presence of unanticipated effects.

Ahmann and Glock (1975) take a more balanced position. They state that goal free evaluation is a supplement, not an alternative, to goal based evaluation. Scriven did not believe that an evaluation of the goals allowed for an evaluation of the processes, a basic element of any program evaluation.

Goal free evaluation will include the evaluation of unintended goals. If a desirable outcome is achieved unintentionally, one would wonder why it was not included in the objectives. If an undesirable outcome is achieved unintentionally, it is presumably the fault of the instruction, not curriculum, because it was not included in the objectives. Instruction, however, cannot be held accountable for failing to achieve what was not intended to be achieved (Messick, 1969).

Uses of Program Evaluation

Stufflebeam (1971) theorized that program evaluation is undertaken for one or more of the following reasons: 1) quality of program, 2) utilization of resources, and 3) a cost effectiveness comparison. Program evaluation helps educators compare where-they-are in relation to where-they-think-they-should-be. Evaluation can provide program information for program coordinators, advisory boards, or planning groups. Evaluation information may be used by staff administrators, funding sources, and legislators or governing bodies.

Quality control requires the establishment of procedures to monitor and modify programs that will ensure uniform products to meet acceptable standards. Cost benefit analysis examines the relationship between a program's cost and the value of the product. Improved decision making is possible when new sources of information about cost, benefits, program quality, or program operations are available (Stufflebeam, 1971).

Methods of Gathering Evaluation Data

The most common procedure for gathering evaluation data about a program is to collect individual viewpoints and then aggregate them in some way. There are four ways to accomplish this; surveys and tests, scaling and semantic differential, Q-technique, and observation. These techniques could be used in a pretest-posttest design to study attitude change as well as educational outcomes.

Surveys are undertaken to obtain categorized answers to specific questions from one group of people. Surveys may be conducted through the use of personal interview or paper and pencil questionnaire. Surveys are most valuable when good data can be taken by direct questioning. When an objective or point of view is important enough to justify more costly research, a rating scale may be a better form to use. The purpose of achievement tests most cited by administrators is evaluation. A reliable and valid test instrument can serve as a valuable measuring device (Denemark and MacDonald, 1967).

Many program evaluators are using another data collecting technique, the semantic differential scale. It was developed by Osgood, Suci, and Tannenbaum (1957) to enable the researcher to determine what people perceive as the meaning of a concept.

A special use of the rating scale was developed by Stephenson. It is called "Q-technique". Stephenson (1966) showed how sorting could be factor analyzed by correlating persons instead of scales.

Observation, as a means of evaluation, often proves to be expensive, time consuming, and subjective. Peak (1953) emphasized the need for the training of observers. There is a shortage of procedures for observing educational activities. Typically, a small number of persons are appointed to observe a program at a particular time. The program then becomes atypical. The presence of an evaluator is likely to influence what happens in the classroom. More indirect ways of collecting data through observation need to be considered in program evaluation (Denemark and MacDonald, 1967).

Some sort of program evaluation is frequently used to determine the effectiveness of an educational effort. Evaluation of in-service education, a common education format, may take advantage of one or more of the four data collection techniques.

In-Service Education

Public schooling probably is the only large scale enterprise in this country that does not provide for systematic updating of the skills and abilities of its employees and for payment of the costs involved. Teachers, we presume, can readily cast aside their old, inappropriate ways and acquire markedly different ones through some process of osmosis (Goodlad, 1969, p. 61).

In-service education for teachers differs from pre-service education only by time and sequence of the program. According to Harris and Bessent (1969) in-service education is defined as "planned activities for the instructional improvement of professional staff members" (p. 1-2).

Works of Hodenfeld and Stinnet (1961), Lindsey (1961), and Trump (1962), clearly state that the necessary preparation for teachers cannot be accomplished in a four year period.

Livesay (1960, suggests that if teachers are left to themselves they will use their own resources and be adequate teachers.

Purposes of In-service Education

The purposes of in-service education are numerous. The primary goal of any in-service education is to change teacher behavior. (Doty and Gephner, 1976). However, the ultimate goal is to improve student learning. In-service education for the teacher adds quality to the student's education (Livesay, 1966).

One objective of in-service education is to change instructional practices or conditions by changing people (Bessent and Harris, 1969). Reasons for in-service education as given by Harris and Bessent are as follows:

1. Social and educational changes make current professional practices obsolete or relatively ineffective in a very short period of time. This also applies to knowledge, methods and techniques, and tools.
2. Coordination and articulation of instructional practices require people to change.
3. Morale can be stimulated and maintained through in-service education, and contribute to instruction, though content or methodology was not presented.

Reasons stated by others for inservice education include perfecting the use of procedures, recertification, college credit, and pay raises (Peters and Schnare, 1976).

The need for in-service education has increased in recent years. This is partly due to the rapid growth of the secondary schools and the broadening scope of the curriculum. These increases have brought on many problems in instruction and guidance. In addition, the turnover of teachers in almost every system is large and thus arises the problem of orienting each new teacher to his/her job. Each new job is somewhat different from any previously held position. Education is continually changing in method and technique. New teachers lack experience and older teachers may need exposure to new methods and techniques (Houck, 1941).

In a study conducted by Peters and Schnare (1976) elementary and secondary teachers and administrators were questioned as to their main purpose for attending an in-service educational program. From the findings the researchers concluded that the secondary teacher was looking for "college courses or credit" in their in-service training for recertification purposes.

In a questionnaire given to 218 in-service teachers, Taylor (1961) studied their plans for additional formal education as well as their needs for future preparation. Nearly 75 percent of this group intended to take additional college course work. Slightly more than 55 percent had plans to complete a master's degree in the near future. According to the teachers, classroom control and student motivation were listed most frequently as major problems they faced.

Applegate (1974) in a statewide survey of 110 Illinois occupational teachers and administrators, found that the most typical in-service activity was the on-campus graduate course at a teacher education institution. Yet, when teachers indicated their preference for the various types of in-service activities, they ranked the on-campus courses offered by teacher training institutions eighth among the nine alternates. Their first choice was off-campus courses offered by teacher education institutions. The teachers ranked their choices as follows:

1. off-campus courses offered by teacher education institutions,
2. short duration (two-four days),
3. one to three days during the school year,
4. local staff and administration,
5. field service programs and activities provided by teacher education institutions or state educational agency,
6. summer internship with business, industry, or public agency,
7. weekends throughout the year,
8. on-campus courses by teacher education institutions, and lastly
9. individualized programs or correspondence courses.

Effectiveness of In-service Education

The objectives of the in-service education program are most effective when developed by the teachers participating in the in-service program. If teachers are allowed input at all levels of the in-service education, they will assume responsibility for the attainment of the objectives and the program will be more effective than had there been no teacher input (Foster, 1966; Bessent and Harris, 1969). An in-service program which reflects the teachers' needs will be more effective than one which does not (Livesay, 1966). Peters and Schnare (1976) state "the success of any workshop program is dependent upon the degree to which it directly involves the classroom teacher and meets his/her immediate as well as long range interest" (p. 3). The success of program goal achievement will therefore depend upon the goals of the individual teachers. Thus, in-service education should be structured to meet specific needs as identified by the individual teacher (Crowell, 1969).

Lawerence (1974) and his co-workers tested 97 in-service education patterns to measure the effectiveness of in-service education. The researchers found that school-based programs had a greater influence on teacher behavior and attitudes than programs offered on the college campus. The school-based self-instruction programs were reported to have had a strong record of effectiveness. Programs which included teachers in the planning and in the individual goal setting phases were judged to be more effective than those which did

not allow for this involvement (Peters and Schnare, 1976).

An experiment conducted by Crowell (1969) found that a ten-week seminar was more effective than a shorter intensive four day lecture. He concluded that more research was needed to explore ways in-service education could be implemented. The longer seminar was recommended over the shorter intensive workshop in order to maximize learning.

Two methods of correspondence courses were compared by Lockwood (1973). Administrators, teachers, and counselors were enrolled in a correspondence course. One half of the participants were assigned to a field school where the participants met at regular intervals. The others followed the traditional correspondence course. The achievement of the individuals in the two groups did not differ statistically nor did the assignment of letter grades. However, participants in the experimental group, which were assigned to the field schools and had regular class meetings, reported a much higher course completion rate. Ninety-six percent of the experimental group completed the course during the study while only 59 percent of the control group completed the course.

Doty (1976) reported that participants of in-service education in an Illinois study preferred methods of group discussion and role playing over the more traditional reading and writing. The activities which require group interaction were rated higher by the participants than those which did not require such participation.

It was suggested by Harris and Bessent (1969) that any means of delivery which focuses on the development and enhancement of

the individual teacher during an in-service activity would be effective and successful. Lawrence (1974), too, makes the argument that no medium of instruction was so inappropriate or inferior that it should be considered unuseable in accomplishing the objectives of in-service education.

Based on experience in designing and implementing in-service education programs, Norton (1972) identified several key elements in the design of any in-service education model. His model was designed for career education teachers but general enough to be employed by other disciplines. Norton noted that in-service education ought to reflect:

1. participant involvement in goal setting,
2. utilization of human resources to their fullest extent,
3. planned activities where there is participant involvement,
4. new experiences built on previously introduced experiences,
5. periodic evaluation and needs assessment, and
6. programs and activities which are consistent with overall program development purposes.

Findings in a 1975 study by Marion and Bramble suggest additional characteristics for performance based in-service education. These characteristics are based on observation and experience, not on quantitative data. In this pilot study, 118 vocational education

teachers at Oregon State University, University of Missouri, and Temple University, the following characteristics were found to be desirable in in-service education:

1. individualized instruction,
2. feedback during the program,
3. a systematic approach to the problem,
4. emphasis placed on exit requirements not entrance requirements, and
5. students accountable for their performance.

Based on these studies the following techniques have been successful in improving the effectiveness of in-service education for teachers: 1) teacher input into the development and implementation of the total in-service program, 2) emphasis on local school-based programs, 3) workshops of a longer duration than a few days to a week, and 4) use of group learning experiences.

Innovative Ideas of In-service Education

Opportunities exist for experimentation with new media in teacher education. Some of these new media in teacher education will be discussed.

Interest in using closed circuit television in teacher education has led to several experiments. Rumford (1960) found television to be as effective as the traditional methods of instruction. However, Thompson (1960) found that the participants did not prefer television over the traditional forms of instruction. Application of satellite technology provided another method for in-service

education. The National Aeronautics and Space Administration (NASA) proposed to conduct major experiments in the field of education to include in-service education for teachers. Teachers of career education in the Appalachian states took part in NASA's 16, one hour interactive seminars broadcast via satellite. These were unique because immediate feedback was available for the first time due to an audio connection.

In Corvallis, Oregon, the school district used video-tape as the media for improving student instruction. The teachers were taped while teaching, and later reviewed the film. The self-evaluation process proved to be an effective method of changing teacher behavior (Jensen, 1968).

Many teacher educators desire to provide a more closely articulated program with increased attention to development of teacher competencies. These teacher educators found that their efforts were hampered by the constraints of university course structure, credit, grading, and evaluation requirement. Cooperation between public schools and the teacher education institutions for in-service education has been stimulated in recent years by the "fifth year" requirement, additional courses to maintain his/her teaching certificate (Reynard, 1963).

One way of meeting the needs of individual teachers through in-service education was designed by McCreary (1960). School administrators in cooperation with academic personnel of colleges and universities attempted to determine the individual needs of

elementary teachers at the time of graduation. An individualized in-service program was planned. A small sample of administrators and teachers participated. Interview schedules and check-lists based on criteria furnished by superintendents, were used to determine the candidates weaknesses and strengths. The results indicated that modifications to this approach to in-service education would be necessary. The instrument and procedure were considered useful in planning. The follow-up proved to be difficult.

Personal Finance In-service Education

The Vocational Education Amendments of 1968 have provided important monies for in-service education within the area of consumer education. School districts in Ohio and Massachusetts were able to provide in-service education to consumer education teachers as a result of these amendments (Schoenfeld, 1973).

At Lincoln Elementary School in Euclid, Ohio, a school wide in-service program was developed to help the teachers utilize current information about children's learning. The program emphasized problem-solving and decision-making experiences. A steering committee from the local universities was established in order for teachers to have the opportunity to share their ideas on updating consumer education.

Two consumer economics professors from Cleveland State University were retained as consultants. They informed the teachers about resources and reference materials in the field of consumer education. They spoke at staff meetings about consumer topics and

activities that would interest young children. However, for the most part, the teachers at Lincoln learned the content on their own and with their students.

Freeman and other teachers at Lincoln School emphasized the following points to educators who are interested in developing a school-wide consumer education program. Set forth general guidelines and objectives, and then look for points where consumer subjects rise naturally in the curriculum. They encouraged sharing teaching ideas with other teachers, but stressed the importance of not doing the same lesson in two different classrooms (Schoenfeld, 1973).

A state-wide approach to consumer education was developed during a two year pilot project in Massachusetts. Jordon, former chairman of Home Economics Department at Framingham State College, designed an interdisciplinary curriculum for consumer education, grades k-12. Teachers attending the in-service program were paid \$5.00 for their participation. Workshops were held once each month for two hours each starting in December of 1971 and continuing through the school year. At the workshop sessions, consumer topics, resource materials, and methodology were introduced to the teachers. Specialists were called upon to deliver lectures regarding various concepts related to consumer education.

Workshop coordinators saw the benefits in allowing the teachers to have input into the design of the program. The interdisciplinary approach allowed for a broader view of consumer education and a

greater exchange of ideas from the teachers. Using the in-service workshop as a tool to bring teachers of various backgrounds together, an ongoing communication between disciplines was established (Schoenfeld, 1973).

Illinois became the first state to make consumer education a requirement for high school graduation. The implementation of the mandate became the responsibility of the Superintendent of Public Instruction, who was directed to devise or approve the consumer education curriculum and to specify the minimum amount of instruction. It was soon apparent that many of the educators in the state were not prepared to help the superintendent carry through with the new mandate. Many secondary teachers had no idea about subject matter and learning experiences appropriate to consumer education. There was little available to them in the way of workshops or college methodology courses.

To provide teachers with some of the needed information dealing with consumer education, the Office of Superintendent coordinated regional workshops. The first workshop, held after school, introduced the teachers to an overview of consumer education and materials, teaching strategies, and student activities. This workshop project expanded to 13 regional workshops of three or four sessions each. The purpose of these workshops was two-fold; to provide teachers with teaching materials and techniques, and to encourage them to continue their educations at nearby universities in the area of consumer education (Schoenfeld, 1973).

Experimentation and research are needed in relation to all aspects of in-service education, especially research which uses evaluation techniques other than survey (Reynard, 1963). The evaluation of all in-service education programs are crucial to their continued effectiveness (Peters and Schnare, 1976). An area in special need of expanded study is the relationship between pre-service and in-service teacher education programs. To improve the relationship between these efforts a conceptual structure is required that will aid in determining the specific functions of each. A tremendous amount of work remains to be done. It is a credit to the teacher educators that they are willing to admit the lack of knowledge and to attempt to solve the problems in this area (Bessent and Harris, 1969).

Consumer Education

The President's Committee on Consumer Interest in 1968 defined consumer education as

the preparation of the individual in the skills, concepts, and understandings required for everyday living to achieve within the framework of his own values, maximum utilization of and satisfaction from his resources (Schoenfeld, 1973, p. 2).

This is a broad definition. Consumer education is not a science, a discipline, nor a list of principles that once learned will insure the wisdom of consumer choices from then on. It is a continuing process of learning that begins with preschool and lasts a lifetime (Schoenfeld, 1973).

Educators are now confronted with the problem of designing and implementing comprehensive consumer education programs. It is necessary to review the evolution of consumer education/economics/personal finance to better understand the current movement of consumer education. By looking at the past, educators can better plan the future directions of consumer education.

Until the 1850's, when the Industrial Revolution took place in America, there was little need for consumer education. Goods and services were home-produced or obtained from local persons. Mass production and specialization allowed for a larger variety of consumable goods and a more advanced technology. Consumers began to have problems in making purchase decisions about new, unknown products within a very different marketplace. Consumers lacked the knowledge needed to deal with an organized marketplace.

Buymanship

In 1899 at the Lake Placid Conference, home economics was placed in the Dewey decimal system under "economics of consumption." The founders of home economics never questioned this placement. The development of what is now being called consumer education/economics/personal finance began to take shape. Home economists saw the need for better consumer decision making which would lead to better buymanship. Richards perceived home economics to include consumer education as well as the more traditional areas (Lake Placid Conference, 1901).

In 1909, at the first annual meeting of the American Home Economics Association (AHEA) two papers dealing with consumer education were presented. Education was a major concern of the home economists in attendance. A need to teach about sanitation, which later became a major factor in early consumer laws, was the emphasis of one paper. The second paper addressed the problem of standardized labeling of consumer goods. Nellie Crooks, author of this paper, proposed a 30 year program to standardize product labels through consumer education. Home economics teachers with the responsibility of teaching students how to balance family resources in a period when goods and services were rapidly increasing, agreed with Ms. Crooks' suggestions for standardization (Crooks, 1909).

In 1912 Bruère discussed the inadequacy of home economics courses to educate the consumer. She suggested that the role of the home economics teachers should be that of consumer educators. The over emphasis on home production was not meeting the changing lifestyle (Tonne, 1941). By 1915 home economics courses with consumer interest were being taught in Teachers College, Columbia University, land-grant institutions, and other higher education institutions. These courses became influences on home economics being taught in high schools at that time (Tonne, 1941).

Harap, George Peabody College for Teachers, in 1927, suggested that schools ought to provide consumption education in place of production education. Economics education, he believed, would improve buying practices. Education was necessary because purchasing skills are not innate. Harap was concerned with the expenditure

patterns of the American people and believed consumer education to be the answer in developing more rational patterns of consumption (Tonne, 1941).

Hoyt (1928) felt that few people were prepared for their role as consumers. She expressed in The Consumption of Wealth, 1928, a solution to the problem. Her solution was to develop a technology of buying. This idea echoed the earlier Lake Placid Conferences. At this time little was being done in the way of consumer education courses. Home economics and business education had incorporated consumer education concepts stressing buymanship into the already established classes.

Resource Allocation

The depression served as a more convincing lesson in demonstrating a need for consumer education than all the previous lectures. Personal finance education throughout the nation increased during the decade of the 1930's.

During this time the field of home management focused upon the use of resources, money being a major emphasis. Home management had been struggling with the concept of resources for some time. Using Andrew's Economics of the Household, 1923, and Kyrk's Economic Problems of the Family, family economics was recognized as an essential part of home management (Gross and Crandall, 1963).

Phillips (1931) conducted a study to determine the deficiencies of consumer purchasing. She concluded that consumer education, using decision making as a base, should be a challenge to home economists.

The study revealed the complexity of the consumer problem and claimed an easy solution, education.

One of the most significant evidences of the development of consumer education was the publication of a bulletin on "Consumer Buying in the Educational Program for Homemaking" printed in 1935. More articles dealing with consumer issues and consumer education began appearing in the Journal of Home Economics. The "Consumer Education Service" had been published through the Journal of Home Economics since 1936 (Tonne, 1941).

Teachers of business education recognized that their courses could help students to be worthwhile workers and also to become better consumers of goods and services. To combine consumer values and job values, however, defeats the purposes of both consumer education and business education (Tonne, 1941).

Reid (1938) felt that improving consumer purchasing skills could be done through consumer education. This education should include: determining consumer needs and wants, abilities to satisfy needs and wants, and an awareness of public policy and state laws.

Formal courses in consumer education were increasing at the university and high school levels. In fact, by 1939, 25,000 high schools were providing consumer education mostly through the home economics programs (Dameron, 1939).

Consumer education still had not been clearly defined. Tonne (1941) felt that it never should become so stable that it would be

unable to meet the changing needs of individuals and group consumption; that consumer education content should change with the times.

The third National Conference on Consumer Education was held at the Institute for Consumer Education, Stephens College in April of 1941. Approximately 500 educators, consumer groups, government and business representatives attended. The theme of the conference was "Consumer Education for Life Problems." Learning experiences and teaching resources were exchanged. Participants agreed upon the premise that consumer education had become a fundamental part of general education and should result in a more satisfied life (Wychoff, 1941).

Nystrom stated that persons trained in home economics were most likely qualified to develop the buymanship skills of a consumer education course (Van Horne, 1941). Kyrk believed that home economics teachers should teach the buying unit. However, she believed that consumer education was more than directing buying, and a program which only discussed buying skills was deficient. A broader range must be covered for the consumer to understand his/her economic position in the marketplace. The broader consumer course should include an understanding of the marketplace, factors which determine prices, and an awareness of public policy contrary to consumer's interest.

Kyrk (1941) saw consumer education as an interdisciplinary course combining home economics, business, and economics. All three disciplines had something unique and valuable to offer the field.

In a study of 500 schools in 1941, Wilson determined the grade placement, the department offering, the length, and the status of the consumer education courses. The social studies, home economics, and commercial departments ranked highest in frequency of offering and teaching consumer education courses (Mendenhall, 1967).

In 1945, the National Association of Secondary School Principals met to discuss consumer education. They defined the purpose of consumer education as "to help people become more intelligent, more effective, and more conscientious consumers" (Consumer Education Study, 1945, p. 91).

Harap stated (1946) that consumer education should stress the consumers' point of view, not that of business. When consumer education was first introduced into the high schools the primary objective was to increase buying skills (Mendenhall, 1967). Reich (1946) agreed with Harap that consumer education overemphasized buying and should stress the use of all resources.

Rights and Responsibilities in the Marketplace

Consumer education has had difficulty evolving as a separate course. During the 1950's it became increasingly important to concentrate on the sciences, therefore college preparation courses were stressed at the high school level. During this decade television became an integral part of the American life-style. For the first time Americans were seeing commercials geared toward selling new products. Consumer education needed to take on additional

responsibilities. The consumer now needed to be able to evaluate television advertisement.

There was a rebirth of consumer education during the late 1960's. An interest in consumer affairs at the federal level drew attention to the need for consumer education. Nader provided impetus for keeping alive the ideas about consumer education (Langrehr and Mason, 1975b).

Living situations in the late 1960's and 1970's were similar to those in the 1930's. Inflation and unemployment, coupled with the increased use of credit and an overwhelming marketplace made consumers realize their need for consumer education (Langrehr and Mason, 1975b).

The Vocational Education Amendments of 1968 included in Part F the phrase "consumer and homemaking education". Soon thereafter the United States Office of Education announced the availability of grants for consumer and homemaking education and research. One of the purposes of the research was to determine the status and curriculum treatment of consumer education courses during the 1968-1969 school year. A period of growth for consumer education followed as federal funds became available for consumer education and research.

The researchers identified consumer topics in several secondary school curriculum areas. These included home economics, business, and social studies, and to a lesser degree, drivers' education, industrial arts, math, health, science, and English.

Bits and pieces of consumer education were scattered within the many high school courses.

Consumer education before 1968 reflected the integration of consumer education into the conventional curriculum. However, administrators reported that separate consumer education courses were in the planning stages. The states of New York and Illinois, at the time of that survey, appeared to have more emphasis on consumer education than did the other states (Uhl, 1970). Buying skills were no longer the main emphasis of consumer education programs. The development of personal values and public responsibility became the primary objectives (Burton, 1972). With the passage of Bill 977 in 1967, Illinois became the first state to make consumer education a requirement for high school graduation. The mandate stated that all students in the grades eight through twelve shall be required to have instruction in consumer education. Illinois did not limit consumer education to buymanship, but did include it as a part of consumer education.

By 1973, Hawaii had joined Illinois in requiring consumer education programs in the high schools, California and Michigan had considered a high school requirement in consumer education, and Tennessee had introduced an elective program (Brooks, 1973). West Virginia, Kentucky, Virginia, Delaware, Florida, and Oregon have since added consumer education as a high school graduation requirement (Langrehr and Mason, 1975b).

Personal finance education in Oregon is a combined effort of students, parents, teachers, and the business community. All of

these segments have been involved in the development and implementation of the program. Teachers from many subject areas have been teaching the consumer education/economics/personal finance requirement. However, before the Oregon Board of Education mandate, there was no systematic design for exposing all students to the minimum competencies needed to function in today's marketplace (Kienzle, 1973).

During the 1970's consumer education emerged as two separate schools, buymanship and the development of personal values and resource satisfaction. Scherf (1974) felt that consumer education should be a combination of the two. Consumer education should in addition to buymanship, teach students how to achieve their goals based on their personal values. Kyrk, in the 1940's, expressed the same view, only today there is more support for a comprehensive consumer education program as evidenced by Presidents John F. Kennedy and Gerald R. Ford. President Kennedy in 1962, outlined four consumer rights. These are 1) the right to information, 2) the right to choose, 3) the right to complain, and 4) the right to safety. In 1975, President Ford added a fifth consumer right to the list of President Kennedy's. The fifth right is "the right to consumer education" (Langrehr and Mason, 1975b).

The Effectiveness of Consumer Education

Seitz (1972) questioned the benefits of consumer education. He believed that businesses would out pace the consumer in information processing skills. The cost effectiveness of consumer education programs would be minimal compared to the corporate capabilities. There have been several studies conducted to evaluate consumer education programs throughout the United States. The results of some of these studies follow.

Using a pretest-posttest quasi-experimental design Langrehr and Mason compared students in Illinois consumer education and economics classes to students in history classes in Alabama. Consumer education was a required course for the Illinois student but not for the Alabama student. Langrehr and Mason (1975a) controlled for prior consumer knowledge, social class, and intelligence. The researchers concluded that there was no difference on the consumer test due to sex or plans of the student to attend college. These findings differ from those of earlier studies. Earlier studies, however, had not controlled for the above variable (Beattie, 1962; Seymour, 1975). Studies by Jelley (1958), Lupper (1973), and Claar (1973) confirmed Langrehr and Mason's findings. Langrehr and Mason also found no difference in the scores of the consumer test due to social class. The Curry (1970) study supports this finding. However, Litro (1973) found differences in consumer test scores due to social class.

Langrehr and Mason (1975a) did find a difference between post-test scores of the Illinois and Alabama student groups. Illinois students, those having had instruction in consumer education, scored higher than the Alabama students who had not had consumer education. The researchers also reported a difference between the Illinois students enrolled in the consumer education courses and those from the same state enrolled in the economics courses. The students in the consumer education class again scored higher on the consumer test. This finding is in contradiction of earlier studies. Earlier studies indicated no difference in scores on a consumer test between students enrolled in a consumer education course and students not enrolled in such course (Claar, 1973; Thomas, 1969; Hawkins, 1977). In other studies which compared consumer learning as a result of consumer education with consumer learning as a result of general business, home economics, or economics classes, no difference was found in consumer learning and the type of class in which the student was enrolled (Riney, 1975; Meiselwitz, 1968; Luper, 1973).

Langrehr and Mason (1975a) concluded from their findings that consumer education does increase consumer competencies. Change in the results from the earlier studies could be due to the increased attention being given to consumer education in the schools and the more sophisticated methodology used by Langrehr and Mason.

In another study by Larson (1970) a difference in consumer competencies was found between those students in a consumer education course, students in a general business course, and students who had not had either course in their high school program. The

purpose of Larson's study was to determine high school students' understandings of personal finance. On the money management section of the test, Larson found no difference in the three groups. However, on the credit, insurance, and savings and investments, the consumer education students and the other twelfth grade students scored higher on the test than did the general business students.

The effect of consumer education cannot yet be measured. Due to the previous experiences of the students, differences in teacher preparedness, lack of controls on the research design and the influencing variables not yet identified, it may prove difficult to achieve a true evaluation of the consumer education programs and the success of a program may not always be measurable (Stake, 1967a).

III. METHODOLOGY

This study was experimental in nature. The researcher sought to determine the effect of a personal finance workshop on participants' learning. Three workshops, one held at Portland Community College, one at Treasure Valley Community College, and one at Lane Community College, were evaluated by administering a competency test to the workshop participants on five specific concepts.

This chapter describes: 1) research designs, 2) instruments, 3) sample, 4) administration of instrument, and 5) data analysis.

Research Designs

This experimental research utilized two research designs for evaluation of learning resulting from a treatment. The two designs were used in order to maximize the strengths of each and to minimize the weaknesses of each design. The designs used were the posttest-only control group, a true experiment, and the one group pretest-posttest, a pre-experimental design.

Posttest-Only Control Group

The posttest-only control group provided for an experimental and a control group, without any pretesting. The participants from each workshop were randomly assigned to one of the two groups. The treatment (workshop), was given to one of the two groups and denied to the other group. Then both groups were tested. This design conserves time, money and effort (Sax, 1968).

Another advantage of the posttest-only control group was that the researcher was able to measure the effect of the treatment while controlling for internal validity which must be controlled in any experiment if the results are to be valid. Internal validity includes: history, maturation, testing, instrumentation, statistical regression, selection, experimental mortality, and selection-maturation (Campbell and Stanley, 1963).

The posttest-only control group experiment is:

$$R \ X \ O_1$$

$$R \ O_2$$

where:

R = randomness

X = treatment

O = test

1 = posttest for experimental group

2 = posttest for control group.

For the purpose of this study the posttest-only control group was selected because of the shortness of time between the first and second testing session. According to Campbell and Stanley, (1963) the posttest-only control group is a "true experimental design" which controls for testing as the main effect and controls for interaction, but does not measure them. Such measurement of the effect or interaction is dependent upon whether or not the treatment was effective. Using the posttest-only control group design the

researcher was then able to determine if learning occurred as a result of the treatment. Hypotheses tested using this design were four, five, six, seven, eight, and nine.

One Group Pretest-Posttest

In this research a second experimental design, one group pretest-posttest, was combined with posttest-only control group. A limitation of the one group pretest-posttest design for this study was due to the brief time interval between the first and second testing. This experimental design indicated the effect of a treatment on participants' learning, but did not control testing (Campbell and Stanley, 1963).

The one group pretest-posttest is:

$$O_A \quad X \quad O_B$$

where:

O = test

A = pretest

B = posttest

X = treatment

This design was also employed to measure the results of the treatment on the participants' learning. Hypotheses one and two were tested using information provided by this design.

The designs were combined by the researcher in this study in order to evaluate the participants' learning. The design used for this research was:

$$R \quad X \quad O_1$$

$$R \quad O_{2A} \quad X \quad O_B$$

The reason for combining the designs was that it would enable the researcher to determine whether the treatment or the combination of the treatment and the pretest had effected the posttest scores. Hypothesis four was tested using the combined research designs.

Instruments

Three instruments were used in data collection. Instruments were: application form (Appendix A), attitude survey, and a multiple choice test (Appendix B).

An application form, developed by Keast, Home Economics Education, Oregon State University, provided demographic information about each of the participants such as educational background, previous experience teaching personal finance, and workshop attended. The applications were completed by the participants and returned to the workshop coordinator prior to the workshop. These forms were then made available to the researcher.

The attitude survey was administered to the experimental group as a distractor. This was designed to reduce the Hawthorne effect (Courtney and Sedgwick, 1964a). The data from this instrument will be analyzed by another researcher.

The third instrument, used in data collection, was a competency test developed by this researcher. This instrument was used to measure changes by testing participants' learning as a result of the

personal finance workshop. The 30 question multiple choice competency text (Appendix B) was developed after discussions with the workshop coordinator and speakers involved in the workshop teaching sessions. Six questions were written to evaluate each of the five concepts of personal finance covered at the workshop. Concepts were: consumer decision making, investments, law and legislation, life insurance, and money management. The questions were reviewed by a panel of six experts made up of Oregon State University faculty from the Family Resource Management and Home Economics Education Departments.

The first of the four personal finance workshops, held at Linn-Benton Community College on July 27-29, 1977, served as a pilot study. The main objective of the pilot study was to refine the test instrument.

Based on the results of the pilot study, the test was reviewed and revised to more clearly measure the objectives of the workshop. Through the use of an item analysis on the two groups and the recommendations from the panel of experts questions were eliminated, modified, or retained to develop the final test form.

The test was forwarded to the Committee for the Protection of Human Subjects prior to data collection. The test was reviewed and approved by that committee.

Validity

Validity of a test instrument refers to the degree to which that test or instrument is useful in measuring that which it is

designed to measure (Erickson and Wentling, 1976). A common way to determine validity is to have a group of specialists examine the questions to see if they meet the predetermined objectives (Sax, 1968; Ahmann and Glock, 1975). In this study this procedure was followed by having the workshop coordinator, participants of the pilot study, speakers from various sessions, and the panel of experts reviewed the test questions.

Reliability

The reliability of a test may be defined as its ability to consistently measure that which it was designed to measure. The Kudar-Richardson Estimate of Reliability of the pilot study was .643, a lower score than desired. Therefore, efforts were made to improve this score through changes in the wording of the questions. See page 56, data analysis, for further information concerning the Kudar-Richardson.

Sample

The population consisted of volunteer teachers who are or will be involved in the personal finance education of high students in the state of Oregon. Workshop applications were mailed to all personal finance teachers in the state of Oregon inviting them to attend one of the four workshops held in different regions of the state. The sample was self-selected. Persons who attended the three workshops made up the sample for this study.

In order to determine which workshop participants would be members of the control group and the experimental group a systematic sampling procedure was employed to insure randomness of the two groups (Sax, 1968). This was accomplished through the distribution of the tests prior to the teaching sessions. Two instruments were used in the selection process. Every participant received a test. The tests were alternately numbered. The odd numbered tests were the attitude survey. These tests were received by members of the experimental group. The even-numbered tests were the competency tests administered to the members of the control group. The tests were distributed so that alternate persons were included in the experimental group. Thus half were members of the control group and half were members of the experimental group.

In order to maintain an equal number in the two groups, the numbering of the tests continued from workshop to workshop. For instance if test number 32 was the last test distributed at the first workshop, test 33 was the first test distributed at the second workshop. An F-ratio was computed on the posttest scores of the participants in order to determine if a difference in the scores existed between the three workshops. There proved to be no difference. Therefore the test scores from the three workshops were combined to increase the size of the sample.

Administraton of Instrument

The tests were administered at the beginning of the workshops.

Two instruments were used at the initial testing session, the attitude survey and the competency test. Each participant received either an attitude survey or a competency test. The tests were numbered to facilitate data collection and analysis.

The test and survey were distributed under testing conditions. Each participant received a test or survey and a computer scanner sheet. These sheets were used to simplify analysis. A number two pencil had been provided in the registration packets. Instructions were given (Appendix C) and tests were administered.

The participants returned the test and answer sheets at the end of the allocated time. The individual answer sheets were then matched with the corresponding application which provided information on previous teaching experience, educational background, and workshop attended. After the two and a half day workshop was presented, a second testing session was held. Testing conditions were duplicated from the beginning sessions. At the end of the workshop all participants completed the competency test.

Each posttest was matched with the corresponding test from the initial session and coded (Appendix D). Participants completing only one competency test (at the end of the workshop) were members of the experimental group, i.e., those receiving only the treatment and the posttest. The other participants served as the control group.

Data Analysis

The multiple choice test questions were answered on computer scanner sheets by the participants to facilitate analysis. The

scanner sheets were then processed by the Computer Center, Oregon State University. A six digit code was assigned to each test for analysis and identification purposes.

All participants received six scores: an overall test score, 0-30, and one score for each of the five selected concept areas covered at the workshop. These scores ranged from 0-6. The data including the test was then analyzed using one or more of the following procedures: 1) mean and standard deviation, 2) t-test, 3) F-ratio, 4) item analysis, and 5) Kudar-Richardson Estimate of Reliability.

Mean and Standard Deviation

The test mean was determined for each group. The mean was computed by dividing the sum of all the scores by the number of tests. This is also known as the central tendency. The mean can be expressed:

$$\bar{x} = \frac{\sum x}{n}$$

where:

\bar{x} = mean

x = raw test scores

n = number of participants (Beekman, 1977)

The standard deviation was then computed. This is an index of how participants' scores were distributed or dispersed. The standard deviation is computed by:

$$SD = \sqrt{\frac{\sum x^2 - (\sum x)^2/n}{n-1}}$$

where:

x = raw test scores

n = number of participants (Beekman, 1977)

t-test

The t-test was computed to analyze the following hypotheses: number two, three, four, five, six, seven, eight and nine. A.05 level of significance was the standard used for rejection of the hypotheses.

A one-tailed t-test is appropriately used to determine if there are differences between two means (Courtney and Sedgwick, 1974,b). This is an appropriate tool to analyze data from the posttest-only control group (Campbell and Stanley, 1963). Two t-test formulas were used in the computations. This was necessary because in some of the tests there were equal numbers in the groups, while other tests compared groups of unequal sizes.

For hypotheses four, five, six, seven, eight and nine the following t-test was used because of equal group sizes:

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{s_1^2 + s_2^2/n}} \quad \text{with } 2n-2 \text{ d.f.}$$

For hypotheses two and three, due to the different numbers in the two groups, the following t-test was computed:

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{SS_1 + SS_2}{d.f._1 + d.f._2} \left(\frac{n_1 + n_2}{n_1 n_2} \right)}} \quad \text{with } (n_1 + n_2 - 2) \text{ d.f.}$$

where:

\bar{x} = mean of the groups

s = standard deviation of the groups

n = number of participants

SS = sum of squares (Peterson, 1975)

F-ratio

The F-ratio is used to determine whether a statistical difference existed between two or more groups (Sax, 1968). The F-ratio is a test of statistical significance of the differences among the several groups, just as the t-test is a test of statistical differences between two groups (Connolly and Sluckin, 1958). The means, standard deviations, and the number of participants were provided for each distribution being compared. If the F-ratio was significant, it was an indication that two or more means differed among themselves. However, the F-ratio did not specify where differences existed (Sax, 1968). A level of .05 was the minimal standard used for rejection of hypothesis one. The F-ratio was computed as follows:

$$F = \frac{[\sum x_t^2 - \frac{(\sum x_t)^2}{N}] - [\frac{(\sum x_1)^2}{n_1} + \dots + \frac{(\sum x_i)^2}{n_i} - \frac{(\sum x)^2}{N}]}{\frac{(\sum x_1)^2}{n_1} + \dots + \frac{(\sum x_i)^2}{n_i} - \frac{(\sum x)^2}{N}}$$

where:

x = raw test scores

t = all groups

N = number in all groups

n = number in each group

i = last group (Koosis, 1972)

The Scheffé's test will be used when a hypothesis is rejected to determine where the difference exists among the groups. The computations for the Scheffé's test are:

1. Determine which group scores to be compared.

2. Compute A. $A = \sqrt{(k-1) F}$

where:

k = number of groups

F = computed F statistic

3. Compute standard error of measurement of each group (contrast) to be tested.

$$s_{c_m} = \sqrt{(\text{error mean square}) \sum_j n_j c_{jm}^2}$$

where:

n = number in group

j = treatment

c_{jm} = coefficient of each treatment

4. If the difference between the means is numerically larger than A times S_{c_m} , it is significant (Hicks, 1973).

The Item Analysis

An item analysis is an appropriate tool to be used for determining test reliability. The item analysis consisted of a difficulty index, a discrimination index, and a t-value.

The difficulty index measured each question's degree of difficulty. Larger index numbers indicated easier questions. Mathematically, the index is the percentage of right answers. The difficulty index is expressed as follows:

$$D = \frac{np}{n}$$

where:

np = number of correct responses to the item

n = number of responses (Beckman, 1977)

The discrimination index was considered in conjunction with the difficulty index. The discrimination index indicates how well an item discriminated the higher scoring respondents from the lower scoring respondents. The discrimination index may be computed as follows:

$$DI = \frac{\bar{x}_p - \bar{x}_q}{SD_{pq}}$$

where:

\bar{x}_p = mean test score of respondents answering questions correctly

\bar{x}_q = mean test scores of respondents answering question incorrectly

p = proportion of respondents with the correct response

q = proportion of respondents with incorrect response

SD = standard deviation (Beekman, 1977)

The t-value is a statistical conversion of the discrimination index in order to test for significance of the test item. The t-value is:

$$t = r_{p \text{ bis}} \frac{DF}{1 - r_{p \text{ bis}}^2}$$

where:

DF = number of participants minus 2

$r_{p \text{ bis}}$ = point-biserial correlation coefficient (Beekman, 1977)

Kudar-Richardson Estimate of Reliability

The Kudar-Richardson measures the consistency of the instrument. The responses from the participants were analyzed by this method.

The Kudar-Richardson may be computed as follows:

$$r = \frac{K}{K-1} \frac{(1 - \sum pq)}{SD^2}$$

where:

K = number of test

p = proportion of respondents with the correct response

q = proportion of respondents with the incorrect response

SD = standard deviation (Beekman, 1977)

IV. FINDINGS

This section includes the demographic characteristics of the participants of the study, the results of testing the null hypotheses, and the item analysis of the competency test.

Demographics

The 70 participants in this study (56 from Oregon and 14 from Idaho) were involved with personal finance education at the high school level. A summary of demographic characteristics of the participants included their educational background and previous teaching experience. This information was supplied by the application form filled out by the participants. Also included in this section is a discussion of participants' test scores.

Educational Background

The participants of the study were from four educational disciplines. These disciplines included business education, home economics, mathematics, and social studies. There were 27 (38.5%) home economics teachers, 17 (24.3%) social studies teachers, 13 (18.5%) business teachers, and 13 (18.5%) math teachers attending one of the three personal finance workshops held in the state of Oregon. If a participant had listed history or government as his/her educational background he/she was included in the social studies group. Some participants indicated that their major was education and their minor was business or home economics. These participants were

placed in the business or home economics group, respectively.

This information is summarized in Table 1.

Table 1. Participants Attending Workshops by Educational Background

	Business		Home Economics		Math		Soc Studies	
	No.	%	No.	%	No.	%	No.	%
Workshop One	5	7.1	4	5.7	3	4.3	3	4.3
Workshop Two	4	5.7	12	17.1	5	7.1	5	7.1
Workshop Three	4	5.7	11	15.7	5	7.1	9	12.9
TOTAL	13	18.5	27	38.5	13	18.5	17	24.3

There were 35 participants in the control group and 35 participants in the experimental group. Of the 35 participants in the experimental group 16 (45.7%) were home economics teachers. There were 11 (31.4%) home economics teachers in the control group. In the experimental group participants with a social studies background numbered eight (22.9%), math six (17.1%), and business five (14.3%). In the control group there were nine social studies teachers (25.7%). There were eight (22.9%) business teachers and seven (20.0%) math teachers in the control group. (See Table 2)

Table 2. Participants in Experimental and Control Groups by Educational background

	Experimental Group		Control Group	
	No.	%	No.	%
Business	5	14.3	8	22.9
Home Economics	16	45.7	11	31.4
Math	6	17.1	7	20.0
Social Studies	8	22.9	9	25.7
TOTAL	35	100.0	35	100.0

Previous Teaching Experience

Thirty (42.8%) of the participants had taught personal finance prior to the workshop. Forty of the teachers (57.1%) had not taught personal finance previous to the 1977-1978 school year. Teachers indicated on the application form what courses they had taught by listing the titles of those courses. Participants who listed "money management" or "consumer economics" were included as having taught personal finance. Titles such as "general business" or "home mangement" were not considered to be personal finance courses. Table 3 presents the personal finance teaching experience of the participants.

Table 3. Workshop Participants by Previous Teaching Experience

	Have Taught Personal Finance		Have not Taught Personal Finance	
	No.	%	No.	%
Workshop One	9	12.8	6	8.6
Workshop Two	8	11.4	18	25.7
Workshop Three	13	18.6	16	22.8
TOTAL	30	42.8	40	57.1

Of the 35 participants in the experimental group 12 (34.3%) had taught personal finance and 23 (65.7%) had not taught personal finance. In the control group 18 participants (51.4%) had taught personal finance prior to the workshop while 17 (48.6%) participants had not taught personal finance. (See Table 4)

Table 4. Participants in Experimental and Control Groups by Previous Teaching Experience

	Experimental Group		Control Group	
	No.	%	No.	%
Have Taught	12	34.3	18	51.4
Have Not Taught	23	65.7	17	48.6
TOTAL	35	100.0	35	100.0

There were seven (41.2%) home economics teachers, six from the second workshop and one from the third workshop who had not previously taught a course in personal finance. There were five (29.4%) business teachers who attended the workshops without any teaching experience in personal finance. There were four (23.5%) social studies teachers and one math teacher (5.9%) who had not taught personal finance prior to the workshop. (Refer to Table 5)

Table 5. Participants in the Control Group who had not Previously Taught Personal Finance by Educational Background

	No.	%
Business	5	29.4
Home Economics	7	41.2
Math	1	5.9
Social Studies	4	23.5
TOTAL	17	100.0

Test Scores

Test scores are one measure frequently used to determine knowledge level of the student. It is an important measure used in

education to determine the pass or no pass of a student from one level to the next (Ahmann and Glock, 1975).

Criteria established by the Oregon State University, School of Education for graduation is 2.5 grade point in the teaching speciality and an overall grade point average of 2.25. Computing the grade point average into percentage, 2.5, is equal to 75 percent on a 4.0 scale where 4.0 is equal to 90 percent, 3.0 equals 80 percent, 2.0 equals 70 percent, and 1.0 is equal to 60 percent. Only 22 (21%) respondents of the 103 in this study met the above standard on the test. In the pretest situation, three (3%) participants scored the necessary 75 percent or better. In the posttest only experimental group, where the participants received the treatment and the posttest nine (9%) met this criteria. In the group receiving a pretest, treatment, and a posttest ten (9%) participants met the criteria established by the school of Education. (See Table 6)

Table 6. Summary of the Participants' Test Scores in the Design Groups by Percentage

	Scored Above 75 Percent		Scored Below 75 Percent	
	No.	%	No.	%
Experimental Group	9	9	26	25
Control Group	3	3	32	31
Pretest-Posttest	10	9	23	22
TOTAL	22	21	81	78

Hypotheses Testing

Hypothesis One: There will be no difference between pretest scores on the measurement of personal finance concepts of participants of different educational backgrounds.

Hypothesis one could not be rejected at the .05 level of significance. (See Table 7.)

Table 7. ANOVA of Pretest Scores of Participants with Different Educational Backgrounds

	Sum of Squares	d.f.	Variance	F
Total	73	15		
Between Groups	17.4857	2	8.74285	
Within Groups	55.5143	13	4.2703307	2.05

$F = 2.05 < 3.81$ with 2,13 d.f, do not reject at the .05 level of significance.

Social studies teachers scored the highest on the pretest with an average score of 17.50, while home economics teachers had a mean score of 15.42. Business teachers averaged 14.80 and the one math teacher in the control group scored 11.00. When eliminating the Idaho teachers' scores from these figures, the home economics teachers' scores increased to a mean of 17.00. In an earlier study conducted by Burton (1972) to determine differences in consumer attitude between teachers of various educational background it was found that no difference existed. However, when comparing the attitude scores of the different groups of teachers to the membership of the American Council of Consumer Interest (ACCI), the scores of the social studies teachers most closely resembled the scores of the ACCI membership.

The researcher separated the test scores into five concept scores and tested for difference. No difference was found in participants' concept scores on the pretest due to educational backgrounds. It was found that in the area of money management business teachers averaged 3.80, social studies teachers averaged 3.75, and home economics teachers averaged 2.42. In the area of investments, social studies teachers scored 4.25, business teacher averaged 3.20, and home economics teachers scored an average of 2.85. The scores on the laws and legislation concept revealed an average score of 2.25 for social studies teachers, 2.20 for teachers with a business background, and 2.14 for home economics teachers. Scores on law and legislation were lower than those on any other concept. Social studies teachers scored the highest on the life insurance section of the test with a mean score of 3.50. Business teachers averaged 3.00 and home economics teachers averaged 2.20. In the area of consumer decision making the teacher having a home economics background score is averaged 4.14 while social studies teachers and business teachers averaged 3.75 and 2.60 scores respectively. Even though there was not a statistical difference these scores would tend to support the notion of team teaching, that which draws from the strength of two or more disciplines. Additional research with a larger sample is needed for more conclusive findings. (See Table 8)

Table 8. Average Pretest Scores of Participants by Educational Background and Personal Finance Concept being Tested

	Business	Home Economics	Math	Social Studies
Decision Making	2.60	4.14	4.00	3.75
Money Management	3.80	2.42	1.00	3.75
Investments	3.20	2.85	2.00	4.25
Law and Legislation	2.20	2.14	1.00	2.25
Life Insurance	3.00	2.20	3.00	3.50

Hypothesis Two: There will be no difference between pretest scores on the measurement of personal finance concepts of participants who have taught personal finance compared with those who have not.

Hypothesis two was rejected at the .05 level of significance using the t-test. There was a difference between teachers who had taught personal finance and those who had not taught personal finance. (See Table 9)

Table 9. Summary of Pretest Scores of the Control Group Participants by Previous Teaching Experience

	Have Taught	Have Not Taught	t-test
n	18	17	
Σx	321	263	
\bar{x}	17.83	15.47	
$(\Sigma x)^2$	103,041	69,169	$\frac{17.83-15.47}{\frac{268.5+94.7}{16+17} - \frac{17+18}{17 \times 18}} = 2.107$
x^2	5,993	4,163	
$\sqrt{\frac{\Sigma x^2 - (\Sigma x)^2/n}{n-1}}$	$\sqrt{15.79}$	$\sqrt{5.88}$	

$t=2.107 > 1.697$; 33 d.f. was rejected at the .05 level of significance

Teachers who had taught personal finance scored higher on the pretest than those who had not had the opportunity to teach personal finance. The mean score for the experienced personal finance teachers was 17.83 compared with the mean score of the inexperienced personal finance teachers of 15.47. These findings appear to support Livesay's statement that if teachers are left to themselves they will use their resources and be adequate teachers (Livesay, 1966).

Hypothesis Three: There will be no difference between posttest scores on the measurement of personal finance concepts of the participants who received the pretest compared with those who did not.

Hypothesis three was rejected at the .025 level using the t-test of statistical difference. Participants receiving the pretest scored higher on the posttest than did the participants who did not receive the pretest. (See Table 10.) The pretest in this situation appeared to be an effective teaching device.

Table 10. Summary of Posttest Scores of Participants by Experimental Group and Pretest-Posttest Design Group.

	Experimental	Pretest-Posttest	t-test
n	35	33	
Σx	619	644	
\bar{x}	17.69	19.52	
$(\Sigma x)^2$	383,161	414,736	$\frac{19.52-17.69}{\sqrt{\frac{431.5+496.2}{34+32} \frac{35+33}{35 \times 33}}} = 2.022$
$\sum x^2$	11,379	13,054	
$\sqrt{\frac{\Sigma x^2 - (\Sigma x)^2/n}{n-1}}$	$\sqrt{12.69}$	$\sqrt{15.19}$	

$t=2.022 > 2.00$; 66 d.f. reject at the .025 level of significance

Previous studies, including those conducted by Lockwood (1973), Crowell (1969), and Thompson (1960), utilizing a pretest-posttest experimental design all reported an increase in learning from pretest to posttest. These researchers used no control group, therefore, it is difficult to conclude whether their findings reflected learning as a result of the treatment or as a result of the pretest.

Hypothesis Four: There will be no difference between posttest scores on the measurement of personal finance concepts of participants who were members of the experimental group compared with the control group.

The experimental group was made up of the 35 participants who received the treatment and the posttest. The control group was the 35 participants who received only the posttest. Hypothesis four could not be rejected at the .05 level. The mean score for the experimental group was 17.69 compared with the control group average score of 16.68. (See Table 11)

Table 11. Summary of Test Scores of Participants by Experimental and Control Groups.

	Experimental	Control	t-test
n	35	35	
Σx	619	584	
\bar{x}	17.69	16.68	
$(\Sigma x)^2$	383,161	341,056	$\frac{17.69-16.68}{\sqrt{\frac{12.69+12.104}{35}}} = 1.202$
$\sqrt{\frac{\Sigma x^2 - (\Sigma x)^2/n}{n-1}}$	$\sqrt{\frac{11,379}{34}} = \sqrt{12.69}$	$\sqrt{\frac{10,156}{34}} = \sqrt{12.104}$	

$t=1.202 < 1.665$; 68 d.f. do not reject at the .05 level of significance.

One reason for this finding could be the variety of participants attending the workshops. The participants, having had different educational backgrounds, viewed personal finance differently. Another reason might be due to the length of the test. Only a sample of test items which could have been asked, were included thus eliminating many of the points emphasized by the speakers. A third reason could be the short learning period, a two and half day workshop. In an earlier study conducted by Crowell (1969), it was reported that more learning took place in a longer ten-week seminar when compared to a shorter four day workshop. The two and half day length of the personal finance workshop could have been a factor as to why there was not a significant increase in test scores. The participants completed an attitudinal check sheet as an evaluation of the workshop. Their comments indicated that the workshop was a positive experience and would be helpful to them in their teaching of personal finance.

Hypotheses Five, Six, Seven, Eight, and Nine:

Hypotheses five, six, seven, eight, and nine are all related to testing learning in the five concept areas: decision making, money management, investments, laws and legislation, and life insurance. The test of these five hypotheses will be discussed together.

There will be no difference between the posttest scores on the measurement of consumer decision making concepts of participants who were members of the experimental group compared with the control group.

There will be no difference between the posttest scores on the measurement of money management concepts of participants who were members of the experimental group compared with the control group.

There will be no difference between the posttest scores on the measurement of investment concepts of participants who were members of the experimental group compared with the control group.

There will be no difference between the posttest scores on the measurement of laws and legislation concepts of participants who were members of the experimental group compared with the control group.

There will be no difference between the posttest scores on the measurement of life insurance concepts of participants who were members of the experimental group compared with the control group.

Hypotheses five, six, seven, and nine could not be rejected at the .05 level of significance. However, hypothesis eight was rejected at the .01 level. (See Table 12, Appendix E)

The experimental group averaged a 3.43 score on the consumer decision making concepts while the control group averaged a slightly higher score, 3.54. In the area of money management the experimental group averaged a score of 3.97 compared with 3.71 for the control group. The experimental group averaged 3.28 in the area of investments, while the control group averaged 3.48. On the life insurance concepts participants who were members of the experimental group averaged a 3.66. The control group participants had a mean of 3.48 on the life insurance section

of the test. Using a t-test, no difference was found between the experimental and the control groups on these four hypotheses.

Hypothesis eight was rejected. The participants who had received the treatment scored higher on this concept than did those who had not received the treatment. The experimental group averaged 3.34 while the average score for the control group was 2.68. The mean score for the control group on laws and legislation was the lowest score achieved on any of the five concepts. This probably indicates that teachers have very limited knowledge on laws and legislation, therefore, more learning could and did take place.

Item Analysis of the Competency Test

The multiple choice competency test, developed by this researcher for the purpose of measuring the learning of the participants as a result of the personal finance workshop, was scored and items were analyzed using the facilities of the Oregon State Computer Center. Following the analysis of the tests, the tests were combined and an item analysis computed on the entire set. The item analysis included the difficulty index, discrimination index, t-value of the discrimination index, and Kudar-Richardson.

Difficulty Index

The difficulty index is a measure of the questions' difficulty. The larger the number the easier the question. The difficulty index according to Beekman should be between .35 and .85 for a multiple choice test (Beekman, 1977). Six questions on the competency test failed to meet this criteria. One question, number 7, proved to be too easy while five questions, 10, 13, 14, 22, 29, proved to be too difficult. (See Table 13, Appendix E)

Even though the difficulty index on these items was not within the desired range, according to Ahmann and Glock (1975) this does not lessen the reliability. The participants, themselves, may be the cause for the high or low scores due to emotional, physical, or educational reasons.

Another reason for the low scores may be due to inadequately

taught subject matter (Beekman, 1977). A third reason could be due to the shortness of the workshop, or time interval for learning to take place. Crowell (1969) found that a period of time longer than four days was needed for learning to take place. Therefore, it was decided to retain all questions on the test for hypotheses testing with the recommendation for further revision before the test is used again.

Discrimination Index

The difficulty index should be considered in conjunction with the discrimination index and the other item statistics. The discrimination index indicated how well a test item discriminated the better students from the poorer students on a test. In general, the larger the positive value the better the test item. A discrimination index of .15 was set as the acceptable criteria for this test. Five of the questions failed to meet this criteria, questions 7, 11, 12, 23, and 24. (See Table 13, Appendix E) One reason for this low or negative discrimination index could be that the test was not homogeneous (Ahmann and Glock, 1975), that is the test was measuring five different concept areas, not just one. A look at the test scores will reveal that teachers from various disciplines scored differently by concept areas. When the questions were analyzed by concept area all questions met the criteria. (See Table 14, Appendix E)

t-value

The discrimination index should be considered at the same time as the t-value, which is a statistical conversion of the discrimination index. The t-value indicated which test item better discriminated the poorer students from the better students (Beekman, 1977). Sixteen of the questions were significant at the .01 level and eight questions were significant at the .05 level. Six questions were not significant at either .05 or .01 level. This could be accounted for by the length of the test and the wide range of concepts covered. A t-value was computed on the individual concept areas. All questions but one, number 23, proved to be significant at the .01 level with this computation, indicating questions within the sections did discriminate between participants who knew the content and those who did not know the content in that concept area.

Kudar-Richardson

The Kudar-Richardson Estimate of Reliability/Internal was computed on the test. The score for internal reliability was .708. This score was an indication of the reliability of the test, or the degree to which the test items continue to measure the same thing. The score of the test was not as high as desired, however, it was within the acceptable range. Ahmann and Glock (1975) state that a .500 should be the minimum desirable level for test consistency. One reason that could account for a lower consistency score was the length of the test.

It was imperative that the test be short. However, if more items could have been added the consistency score would probably have been higher. Another reason might be due to the participants, themselves, differing in educational background and experiences.

V. SUMMARY, CONCLUSION, AND RECOMMENDATIONS

Summary

The purpose of this research was to determine the effectiveness of a personal finance workshop as measured by a multiple choice competency test. More specifically the objectives of the study were 1) to develop a valid instrument for measuring the participants' learning as a result of the two and half day workshop on personal finance, and 2) to use the scores on the competency test to determine if learning occurred as a result of the workshop.

This experimental research utilized two research designs for evaluation of learning resulting from a workshop (treatment). The two designs were the posttest-only control group, a true experiment, and the one group pretest-posttest, a pre-experimental design.

Three instruments were used in data collection: an application form (Appendix A), an attitude survey, and a multiple choice test (Appendix B). The application form provided demographic data. The attitude survey was administered to the experimental group as a distractor. The third instrument was a competency test developed by this researcher to measure the learning which resulted from the workshop. The test included 30 questions covering five personal finance concepts addressed at the workshop: 1) consumer decision making, 2) investments, 3) laws and legislation, 4) life insurance, and 5) money management.

A one-tailed t-test was used to determine whether a difference existed in the test scores between two groups. An F-ratio was used to determine whether a difference existed when comparing test scores of three or more groups. Nine null hypotheses were tested with the rejection level set at .05. A difference was found between participants' pretest scores due to previous experience in teaching personal finance. There was also a difference in the posttest scores of the participants who had taken the pretest when compared with the participants who had not taken the pretest. A significant increase in learning occurred in the area of consumer laws and legislation which was attributed to the workshop.

Hypotheses not rejected at the .05 level included: 1) no difference in posttest scores of the control group and posttest scores of the experimental group, 2) no difference in posttest scores of the experimental group when compared with the control group on the following concepts; decision making, money management, investments, and life insurance, and 3) no difference in pretest scores due to educational background of the participants.

Conclusions

Findings from this study suggest the following conclusions:

1. Teachers learn subject matter content as they teach. This conclusion is supported by Livesay's 1966 study.
2. Personal finance teachers have least knowledge about the concepts related to consumer laws and legislation.

3. Workshops and/or other educational efforts for personal finance teachers are needed.

4. A pretest does increase learning and can be used as a teaching device.

5. All personal finance teachers need education in the five areas studied.

Recommendations

The following recommendations are made based on this research:

- 1) teachers prior to teaching personal finance received additional educational preparation;
- 2) the test be revised to be more inclusive of all personal finance concepts taught in the personal finance requirement;
- 3) use the revised test in further research to determine teacher knowledge relevant to consumer education/economics/personal finance;
- 4) further research be conducted using various demographics (i.e., sex, age, family income) as independent variables to test for differences in teacher knowledge relevant to consumer education/economics/ personal finance;
- 5) follow up evaluations of workshop participants be conducted to determine behavioral changes of teachers in the classroom;
- 6) research be conducted to measure the knowledge and attitudes of high school personal finance students and to determine if there are differences in knowledge and attitude based on a teacher's educational background, preparedness, and attitude;

- 7) an annual workshop be designed and implemented to update personal finance teachers in Oregon;
- 8) a variety of in-service educational programs be developed and tested to determine if a (given) method best meets a specific goal;
- 9) further research be conducted using the combined research design utilized in this study; and
- 10) further research be conducted to determine the effects of a pretest on learning.

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APPENDICES

APPENDIX A

Application Form

Consumer Education/Economics/Personal Finance Workshop

1. Yes, I am interested in attending the short course on the following dates
-

2. This academic year I have taught the following CE/E/PF courses:

	course title	course length	how many sections	total students
a.				
b.				
c.				
d.				
e.				

3. This next year I expect to be teaching more, same, less, none in the CE/E/PF area.

4. My college major was _____: my minors were _____ and _____.

5. The concept areas in CE/E/PF that I feel most competent and least competent are:

	most competent		least competent
a.		a.	
b.		b.	
c.		c.	
d.		d.	

6. One examples of a strength in CE/E/PF teaching methodology which I have is:
-
-

7. One example of CE/E/PF teaching methodology and/or content which I feel the course should include is: _____
-

8. If selected I am am not willing to complete a one-hour pretest of competencies of which the results will remain confidential but will be used as a basis for workshop planning.

9. If selected, I would like academic graduate credit at OSU, PSU, EDSC, SOSC, other.

10. I was first certified to teach prior to 1965 _____ yes _____ no.

Name _____ Social Security No. _____

Summer Address _____ Hom Phone _____

School _____

As principal/supervisor I approve _____ to participate
name
in the CE/E/PF workshop for 1 hour of graduate credit.

signature

RETURN BY MAY 15, 1977

APPENDIX B
Competency Test

This is a pretest to the Personal Finance workshop you are now attending. If you are willing to participate, please print your name on the answer sheet in the appropriate space. Do not block out the letters of your name. The results of this test will be used to determine the effectiveness of this workshop and aid in planning for future inservice training. Your name will not be used in any way in reporting the data. All results will be tabulated collectively. Please be assured that your anonymity will be maintained. To comply with university requirements we need participants to sign below. Thank you.

Signature

Date

PERSONAL FINANCE TEST

Directions: Using the answer sheet provided, mark the appropriate response to each question in the corresponding space on the answer sheet.

1. If you purchase straight life insurance, you are buying insurance and
 1. a savings plan
 2. a group policy
 3. a share in the company
 4. a hedge against inflation
 5. an investment
2. Maria and Andre went to five different banks to compare various methods of computing interest. They wanted to choose the method which would pay the most interest. They selected the bank which pays interest using the
 1. FiFo method
 2. LiFo method
 3. low-balance
 4. Day of Deposit - Day of Withdraw
 5. Compounded Monthly method
3. The first federal food and drug laws were passed to
 1. make sure the food stamp program was properly administered
 2. get rid of unsanitary conditions in food processing plants
 3. control the tax on food and drugs
 4. insure certain foods and drugs for special groups of people
4. Which of the following is the most reliable source of consumer information?
 1. past experience
 2. friends
 3. government bulletins
 4. independent research studies
5. Joe and Jean bought a car on the installment plan. How does this effect their money management? In order to meet the car payment they will
 1. cut their fixed expenses
 2. withdraw from their savings each month
 3. make a new budget
 4. borrow the necessary money now that they have established credit
6. Features one should be aware of when purchasing term insurance are
 1. renewable and convertible
 2. renewable and nonforfeiture
 3. waiver of payment and nonforfeiture
 4. dividend options and convertible
 5. settlement options and waiver of payment

7. You wish to place a certain portion of your money where it is liquid. The best place for those dollars would be in
 1. life insurance policy
 2. real estate
 3. savings account
 4. mutual stocks
8. The agency in Oregon which enforces the Unlawful Trade Practices Act and initiates legal action on behalf of the consumer is the
 1. Federal Trade Commission
 2. Oregon Consumer League
 3. Consumer Protection Division, Attorney General Office
 4. Consumer Services Division, Department of Commerce
9. Research states that the most utilized source of consumer information is
 1. research studies
 2. information at the point of purchase
 3. brand names
 4. newspaper ads
 5. personal and friends' experiences
10. In setting up a budget, the first thing to do is to
 1. find out how much money one has
 2. establish priorities
 3. list the assets
 4. list the liabilities
11. If you give up your permanent life insurance policy, you will receive
 1. nothing
 2. the cash value
 3. the cost of the premium
 4. the face value
 5. one month's income
12. The first step for a family wishing to make an investment is to
 1. select specific investments
 2. decide on the types of investments wanted
 3. time purchases according to the market
 4. decide on the amount of money wishes to invest
 5. determine investment objectives
13. A full or limited warranty must be available for consumer inspection if an item costs over
 1. \$10.00
 2. \$15.00
 3. \$25.00
 4. \$50.00
 5. \$100.00

14. A new "King" bike on the market is rated excellent by all research reports. From which of the following samples would another consumer researcher be most likely to reach the same conclusion?
1. by testing 1 King bike
 2. by testing 10 King bikes
 3. by testing 100 King bikes
 4. by testing 1000 King bikes
15. Larry and Kate are in need of financial counseling. They are advised to liquidate their assets. This means to
1. take all their money from their savings account
 2. mortgage their home
 3. sell everything that is non-essential
 4. sell their life insurance
 5. cut back on their food bill
16. Bob, Perry, and Mike are three brothers. Each felt they could spend \$100 annually on life insurance. Bob bought a term policy with \$100 premium. Perry purchased a straight life policy with a premium of \$100 and Mike bought an endowment policy with \$100 premium. Three years later they were all killed in the same automobile accident. Each left a wife and two small children. Which of the policies paid the largest settlement?
1. they all paid the same
 2. term
 3. straight life
 4. endowment
17. The Johnson's wish to invest \$1000 in some way which would provide a regular guaranteed income. They should purchase
1. common stock
 2. preferred stock
 3. bonds
 4. real estate
 5. diamonds
18. What federal agency regulates advertising?
1. Federal Trade Commission
 2. Federal Communication Commission
 3. Consumer Protection Division
 4. Department of Commerce
 5. Attorney General's Office

19. Some people believe that unit pricing will never be used by the majority of consumers. The reason they give to support their view is
 1. the cost to the consumer in the form of dollars
 2. the uncertainty in buying
 3. too much information
 4. no feedback after the decision
20. Young couples often find themselves unaware of the cost of credit because they
 1. think in terms of monthly payments
 2. quickly purchase a home
 3. start a family immediately
 4. don't keep track of what they spend
21. Larry and Jean have three children; 17, 15, 14. They own their home and have sufficient insurance for current protection and old age. Their present income could put the children through college, but their present insurance could not. What type of life insurance should they purchase to cover this expense?
 1. term
 2. straight life
 3. limited payment
 4. endowment
 5. combination
22. Generally, the risk of capital loss is greater the
 1. shorter the maturity
 2. the longer the maturity
 3. more liquid the investment
 4. less the return
23. The purpose of the Federal Consumer Credit Protection Act is to
 1. allow the consumer to make credit comparisons
 2. require creditors to clearly state the finance charges on loans
 3. protect the consumer in the case of credit card loss or theft
 4. establish regulations about credit advertising
24. One way for consumers to improve their decision-making skills is to
 1. utilize smaller samples of information
 2. recognize the certainty of any one decision
 3. rely on friends
 4. understand their own personal values
25. Which of the following is a disadvantage of credit?
 1. allows for emergencies
 2. easy to obtain
 3. delays payment, often for 30 days without finance charges
 4. allows consumers to enjoy many more durables
 5. easy to replace a lost or stolen credit card

26. Joan just received a loan for \$100. There was no credit check, no questions asked about the purposes of the loan, and she does not have to repay it if she chooses not to. It is most likely that she received her loan from her
1. savings bank
 2. commercial bank
 3. credit union
 4. life insurance
 5. loan shark
27. Which of the following income from an investment is currently tax exempt?
1. capital gains from a home
 2. stock dividends
 3. interest from municipal bonds
 4. interest from government savings bonds
28. Which of the following is NOT covered by the Deceptive Trade Practices Act in Oregon?
1. household goods
 2. credit practices
 3. insurance
 4. telephone sales
 5. promotional sales
29. Traditional economic theory assumes that consumer decisions are
1. variable with cultural differences
 2. often irrational
 3. sometimes based on whims
 4. always made with perfect knowledge
 5. related to Maslow's Hierarchy of needs
30. In extreme cases of financial difficulty, the over-extended family may find it necessary to file for bankruptcy. It is important to be aware that bankruptcy does
1. remove all possibilities for future credit
 2. require sale of all assets and possessions
 3. relieve moral obligations to pay debts
 4. relieve obligation for child support
 5. requires you to pay tax obligations

APPENDIX C

Introduction to Administering the Tests

This is a pretest to the personal finance workshop you are now attending. If you are willing to participate, please print your name on the answer sheet in the appropriate space. Do not block out the letters of your name. Using a number two pencil complete the answer sheet provided. Beginning with test one, mark the appropriate response to each question in the corresponding space on the answer sheet. Fill in the total area between the marks of the answer you select. If necessary erase completely any answer you wish to change. The results of this test will be used to determine the effectiveness of this workshop and aid in the planning for future in-service training. Your name will not be used in any way in reporting the data. All results will be tabulated collectively. Please be assured that your anonymity will be maintained. Thank you.

APPENDIX D

Key to Six-Digit Code

First: 1-3; Workshop attended

- 1 = Portland Community College, September 7-9, 1977
- 2 = Treasure Valley Community College, October 12-14, 1977
- 3 = Lane Community College, October 26-28, 1977

Second: 1-3; Test group

- 1 = Test given to the experimental group
- 2 = Test given to the posttest-only control group
- 3 = Posttest given to the pretest-posttest group

Third: 1-2; Previous teaching experience

- 1 = having taught personal finance before the workshop
- 2 = not having taught personal finance before the workshop

Fourth: 1-4; Educational background

- 1 = Home Economics
- 2 = Business education
- 3 = Social Studies
- 4 = Mathematics

Fifth and Sixth: 01-99; Participant number

- 01 = first participant
- 99 = 99th participant

APPENDIX E

Analysis Tables

Table 12. Summary of Mean Scores of the Selected Concepts of Personal Finance by Experimental and Control Groups.

	Experimental	Control	t-test
Decision Making	3.43	3.54	-.36666
Money Management	3.97	3.71	.787
Investments	3.28	3.48	-.7547
Laws and Legislation	3.34	2.68	2.509**
Life Insurance	3.66	3.48	.562

**significant at the .01 level of confidence.

Table 13. Summary of the Item Analysis by Question Number

Question Number	Difficulty Index	Discrimination Index	t-value
1	.70	.35	3.740**
2	.54	.24	2.476*
3	.70	.24	2.460*
4	.53	.34	3.596**
5	.80	.25	2.548*
6	.37	.56	6.750**
7	.94	.11	1.069
8	.59	.38	4.066**
9	.58	.27	2.805**
10	.29	.16	1.599
11	.77	.25	2.536*
12	.64	.11	1.075
13	.24	.13	1.319
14	.29	.21	2.138*
15	.79	.32	3.382**
16	.49	.41	4.485**
17	.69	.27	2.853**
18	.72	.35	3.692**
19	.51	.25	2.572*
20	.72	.36	3.902**
21	.43	.47	5.383**
22	.25	.24	2.418*
23	.59	-.08	-0.764
24	.78	.12	1.251
25	.76	.21	2.171*
26	.75	.44	4.858**
27	.68	.45	5.025**
28	.38	.42	4.595**
29	.16	.35	3.721**
30	.50	.26	2.683**

* significant at .05 confidence level

** significant at .01 confidence level

Estimate of test reliability, Kudar-Richardson; .708

Table 14. Summary of the Item Analysis by Concept Areas

Concept Area and Question Number	Discrimination Index	t-value
Life Insurance		
1	.46	5.172**
6	.63	8.045**
10	.34	4.306**
16	.53	6.290**
21	.61	7.640**
26	.58	7.112**
Investments		
2	.50	5.720**
7	.35	3.700**
11	.40	4.306**
17	.48	5.504**
22	.59	7.340**
27	.49	5.630**
Laws and Legislation		
3	.34	3.593**
8	.61	7.734**
12	.41	4.510**
18	.46	5.179**
23	.15	1.542
28	.58	7.042**
Decision Making		
4	.47	5.268**
9	.45	5.056**
13	.26	2.674**
19	.59	7.216**
24	.39	4.265**
29	.33	3.472**
Money Management		
5	.53	6.308**
10	.34	3.642**
14	.30	3.160**
20	.54	6.404**
25	.40	4.405**
30	.55	6.543**

** significant at .01 confidence level.