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THE UNIVERSITY OF OKLAHOMA

GRADUATE COLLEGE

A COMPARISON OF PERSONAL-BUSINESS KNOWLEDGES AND UNDERSTANDINGS OF TENTH-GRADE VOCATIONAL AND NON-VOCATIONAL STUDENTS

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A COMPARISON OF PERSONAL-BUSINESS KNOWLEDGES AND UNDERSTANDINGS OF TENTH-GRADE VOCATIONAL AND NON-VOCATIONAL STUDENTS

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A COMPARISON OF PERSONAL-BUSINESS KNOWLEDGES AND UNDERSTANDINGS OF TENTH-GRADE VOCATIONAL AND NON-VOCATIONAL STUDENTS

CHAPTER I

THE PROBLEM

Introduction

As early as 1938, the need for personal-business knowledges and understandings was noted when the Educational Policies Commission of the National Education Association stated:

> Information and skill in choosing and buying are as important as information in producing and selling. Consumer education is a universal need; it should be provided for all through the schools and not left to accidental learning.[1]

In 1947, a group of prominent educators and representatives of the Institute of Life Insurance met in New York to discuss the need for an educational program that would assist young people in acquiring competence for personal and

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[1]Educational Policies Commission, The Purposes of Education in American Democracy (Washington, D.C.: National Education Association, 1938), p. 106.

family planning toward financial security.[1] That first meeting led to a series of meetings and to the formation in 1950 of the Committee on Family Financial Security, the forerunner of the National Committee for Education in Family Finance, which is now the Council for Family Financial Education. The Council's goal is to help teachers introduce or improve instruction in personal and family financial management.

The need was further emphasized in 1951 by Freeman who stated:

> All American youth need preparation for everyday living in a world in which business touches almost every human activity. They must be economically literate and be able to manage their business activities of a personal and family nature. Preparation for economic literacy and everyday business competence is one of the most important phases of business education.[2]

The Council for Advancement of Secondary Education, in 1956, used the term "economic literacy" to denote the possession of basic equipment in economic understandings and skills needed by one for intelligent and responsible participation in the everyday activities of a modern economy. The primary concern is with those fundamental concepts, facts,

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[1]Robert E. Gibson, "The Growth of Family Finance Programs Since 1947," Man, Money, and Meaning, ed. Dean W. O'Brien (Madison, Wisconsin: National Center for Education in Family Finance, 1963), p. 40.

[2]M. Herbert Freeman, Basic Business Education for Everyday Living, Delta Pi Epsilon, Monograph 74 (Cincinnati: South-Western Publishing Company, 1951), p. 7.

and relationships that everyone should command. More explicitly these can be defined as follows:

1. Understanding of the basic economic areas and topics needed for making reasoned judgments and sound decisions.
2. Ability to read with comprehension, as a result of familiarity with the economic terms commonly used in the press, the more thoughtful parts of the newspapers and magazines of the day.
3. Information and skill sufficient to perform efficiently and wisely such functions as making purchases in cash or on credit; maintaining a bank account; entering into loan, rental, insurance, hospitalization, or other contractual agreements; carrying out tax obligations of every kind; and voting intelligently on local, state, and national issues of economic importance.[1]

A study was made in 1959 by Polishook and Rossi to determine whether educators, business executives, and government officials felt that economic education should have a specific place in the secondary school curriculum as part of general education for all students. They found that high school principals, government officials, and business educators agreed 100 per cent that economic education should be made a part of general education for all high school students. Businessmen reported that there is a lack of economic literacy among the average people with whom they daily contacted.[2]

In 1961, the Policies Commission for Business and Economic Education stated that economic activities are an

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[1]Council for Advancement of Secondary Education, Requisites for Economic Literacy (Washington, D. C.: Council for Advancement of Secondary Education, 1956), p. 4.

[2]William M. Polishook and Carmella M. Rossi, "Economic Education as General Education," American Business Education, XVI (October, 1959), 25-31.

indispensable part of the daily living of every person and that ample provision would be made through the curriculum for every student to (1) develop economic literacy, (2) gain an understanding and appreciation of our economic system, and (3) become an intelligent consumer of goods and services.[1]

The point is further emphasized by Hunt, who stated:

> . . . American youth and adults need help in developing basic understandings and skills in managing their personal and family finances if they are to measure up to their responsibilities as effective citizens and parents . . . American education should aid them in achieving these understandings and skills.[2]

Briggs, in 1967, noted that increased emphasis is being placed upon consumer education when he wrote:

> Now, once more, the schools are increasingly recognizing their responsibility to help young people to become better consumers. Since all of us are consumers and since relatively few of us will become maximally efficient without instruction, we ought to assume that being elected by a minority . . . appropriate consumer preparation would be required of all students . . . they all need it.[3]

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[1]Policies Commission for Business and Economic Education, This We Believe About Business Education in the High School (Washington, D.C.: Policies Commission for Business and Economic Education, 1961), pp. 3-4.

[2]Herold C. Hunt, "Foreward," Education in Family Finance, A Report Prepared by the National Committee for Education in Family Finance (New York: National Committee for Education in Family Finance, 1962).

[3]Thomas Briggs, "Preface," The Bulletin of the National Association of Secondary School Principals, CI (October, 1967), 2.

At the secondary level, Idaho, Illinois, Iowa, New Jersey, New York, Michigan, and Rhode Island are presently requiring consumer education units in their schools.[1]

As can be seen by the above discussion, one of the major concerns of educators is that high school students achieve economic literacy; and one aspect of economic literacy is personal-business competency. Many studies have been conducted to determine the extent to which economic literacy is being achieved by high school students, but no studies were found that compared the achievement of the vocational students with the achievement of non-vocational students.

Statement of Purpose

The purpose of this study was to determine the relationship between the development of personal-business competencies and enrollment in a tenth-grade general business course. Other factors investigated were: (1) relationship between the development of personal-business competencies and curriculum choice; (2) the relationship between the development of personal-business competencies and scholastic ability; and (3) the relationship between the development of personal business competencies and gender.

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[1]Dan Bonne, "Illinois Requires Instruction in Consumer Education," Business Education Forum, XXIII (February, 1969), 21-22.

Statement of Problem

The influence of enrollment in a general business course on the behavior of vocational and non-vocational students was investigated in this study.

This study was an attempt to measure the extent to which a course in general business provided the background for students to become economically literate in personal-business knowledges and understandings. It was also an attempt to indicate how the evidence gathered could be used in curricular planning--specifically, for vocational students.

Specifically the problems investigated were:

1. Do those vocational students who have had a tenth-grade general business course score higher on the Forkner Test of Personal-Business Knowledges and Understandings[1] than those vocational students who have not had a general business course?

2. Do those non-vocational students who have had a tenth-grade general business course score higher on the Forkner Test of Personal-Business Knowledges and Understandings than those non-vocational students who have not had a general business course?

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[1]Irvine Hugh Forkner, "An Achievement Test of Personal-Business Knowledges and Understandings," (unpublished Ph.D. dissertation, Teachers College, Columbia University, 1963), pp. 161-69.

3. Is gender related to performance of vocational students on the Forkner Test of Personal-Business Knowledges and Understandings?

4. Is gender related to performance of non-vocational students on the Forkner Test of Personal-Business Knowledges and Understandings?

5. Is general scholastic ability related to performance of vocational students on the Forkner Test of Personal-Business Knowledges and Understandings?

6. Is general scholastic ability related to performance of non-vocational students on the Forkner Test of Personal-Business Knowledges and Understandings?

The above problems may be restated in terms of the specific hypotheses stated below. A more thorough basis for the hypotheses will be presented in the review of related literature to follow.

Hypotheses Tested

Hypothesis 1: The Forkner test mean for vocational students who have had the tenth-grade general business course is greater than the Forkner test mean for vocational students who have not had the tenth-grade business course.

Hypothesis 2: The Forkner test mean for non-vocational students who have had the tenth-grade general business course is greater than the Forkner test mean for non-vocational

students who have not had the tenth-grade general business course.

Hypothesis 3: The Forkner test mean for female vocational students is greater than the Forkner test mean for male vocational students.

Hypothesis 4: The Forkner test mean for female non-vocational students is greater than the Forkner test mean for male non-vocational students.

Hypothesis 5: The Forkner test mean for female vocational students who have had the tenth-grade general business course is greater than the Forkner test mean for female vocational students who have not had the tenth-grade general business course.

Hypothesis 6: The Forkner test mean for male vocational students who have had the tenth-grade general business course is greater than the Forkner test mean for male vocational students who have not had the tenth-grade general business course.

Hypothesis 7: The Forkner test mean for female non-vocational students who have had the tenth-grade general business course is greater than the Forkner test mean for female non-vocational students who have not had the tenth-grade general business course.

Hypothesis 8: The Forkner test mean for male non-vocational students who have had the tenth-grade general

business course is greater than the Forkner test mean for non-vocational students who have not had the tenth-grade general business course.

Hypothesis 9: The Forkner test mean for vocational students is greater than the Forkner test mean for non-vocational students.

Hypothesis 10: The California Test of Mental Maturity mean for non-vocational students is greater than the California Test of Mental Maturity mean for vocational students.

Hypothesis 11: There is a significant difference between vocational and non-vocational students in personal business competencies as measured by the Forkner test.

Hypothesis 12: There is a significant difference between enrollment and non-enrollment in a general business course as measured by the Forkner test.

Hypothesis 13: There is a significant interaction between vocational and non-vocational students in personal business competencies and enrollment and non-enrollment in a general business course as measured by the Forkner test.

Definition of Terms

Terminology used in this study will be defined as follows:

Forkner Test: The Forkner-Business Achievement Test, Form A, an achievement test of personal-business knowledges and understandings, devised by Irvine H. Forkner in 1963.

Scholastic Ability: The score received on the California Test of Mental Maturity. This test was given at the eighth-grade level, and the scores were available for all tenth-grade students.

Personal-Business Knowledges and Understandings: The personal-business knowledges and understandings contained in topical areas such as buymanship, credit, taxes, and others, as they relate to the individual's analysis and decision making process.[1]

General Business Course: The tenth-grade general business course offered at a middle class senior high school which involves the study of planned spendings, banking services, use of credit, sharing of economic risks, savings, and other topics designed to promote understanding of how business affects every person.

Vocational Students: Those tenth-grade students who chose vocational courses as electives in addition to the required courses for high school graduation.

Non-Vocational Students: Those tenth-grade students who chose courses other than vocational courses for electives in addition to the required courses for high school graduation.

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[1]Robert M. Peters, "Some Factors Related to Achievement of Personal-Business Knowledges and Understandings of High School Students," (unpublished Ph.D. dissertation, University of Minnesota, 1965), p. 4.

Limitations

1. This study was limited to a sample of tenth-grade high school students attending a middle class senior high school in Central Oklahoma.

2. The test sampled the student's knowledges and understandings of personal-business problems through the use of test items and did not attempt to measure actual performance of business acts.

3. The test consisted of items of personal-business knowledges and understandings that were judged to be "very important" or "essential" by a jury of experts in business education.[1]

Nature and Sources of Data

In the development of the background and foundation for this study, information was sought from a number of sources: (1) books, periodicals, and doctoral dissertations relevant to personal-business education, to curriculum, and to evaluation; (2) books relevant to educational statistics and educational research; (3) information blanks completed by tenth-grade students at a middle class senior high school in Central Oklahoma; and (4) the Forkner test completed by tenth-grade students at a middle class senior high school in Central Oklahoma.

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[1]Forkner, "Personal-Business Knowledges and Understandings," p. 2.

Analysis of Data

After the data were collected, they were coded and punched on IBM cards for processing. The statistical tests used for this study were the one-way analysis of variance and the analysis of covariance.

Procedure

The first step in this study was to develop an adequate background for the study. The literature included books, periodicals, and research reports.

The second step was to select an evaluation instrument which would measure personal-business knowledges and understandings of tenth-grade vocational and non-vocational students. The instrument selected was the Forkner Test of Personal-Business Knowledges and Understandings, Form A. Also included in this step was the obtaining of permission to use the test from the one who devised the test, Irvine Hugh Forkner.

The third step was to secure permission from the school administration to administer the test. Permission was obtained from the superintendent of schools in which the tests were to be administered. Also included in this step was the setting of the date to administer the test to the tenth-grade class.

The fourth step was to design the information blank to be completed by the students at the time when they took the personal-business test.

The fifth step was to select the groups to be tested--two vocational groups who had had and who had not had the general business course and two non-vocational groups who had had and who had not had the general business course.

The sixth step was to administer the test to the four groups of students. Included in this step was the completion of the information blank by the students.

The seventh step was to code, punch, verify, and analyze the data collected.

The eighth step in this study was the preparation of the research report.

Assumptions

It was assumed that if both vocational and non-vocational students are exposed to practical personal-business procedures, the vocational students will learn these procedures to a greater extent than non-vocational students.

It was assumed that one must possess certain personal-business knowledges and understandings in order to cope successfully with the business problems one will encounter in daily living.

It was assumed that the higher one scores on the Forkner Test of Personal-Business Knowledges and Understandings, the more likely one is to act intelligently when handling one's personal-business problems.

Organization of Report

Chapter I includes the Introduction, Statement of Purpose, Statement of Problem, Hypotheses Tested, Definition of Terms, Limitations, Nature and Sources of Data, Analysis of Data, Procedure, Assumptions, and Organization of Report. Chapter II is comprised of the Review of Literature. Chapter III consists of the Method. Results are presented in Chapter IV. Chapter V gives the Discussion. The Summary is presented in Chapter VI.

CHAPTER II

REVIEW OF LITERATURE

In the area of educating youth for competency in personal-business knowledges and understandings, an extensive, varied, and growing volume of literature appears. These writings include numerous research studies, surveys, articles, and brochures pertaining to the need for the teaching of these knowledges and understandings, to the construction of measuring instruments, and to the testing for personal-business knowledges and understandings. Although several comparative studies have been made in recent years, no research was found that dealt specifically with the comparison of personal-business knowledges and understandings of vocational students as compared with non-vocational students.

The literature reviewed in this chapter was selected on the basis of its relevance to the problem under study. The related literature was classified into the following three major categories: Concepts Basic to Comprehension of Personal-Business Knowledges and Understandings; Research Directly Related to Personal-Business Knowledges and

Understandings; and Research Directly Related to the Design of the Present Study.

Concepts Basic to Comprehension of Personal-Business Knowledges and Understandings

Educators and business leaders both agree that education for economic competency is necessary. A minimum level of economic literacy must be attained if this nation is to maintain the type of economic, political, and social structure its citizens desire.

> . . . the consumer is now recognized as the key to our economic system. Most economists now recognize that the loss of a dollar in consumer purchasing power causes much more than a dollar decrease in ability and willingness to consume the products of industry. The extent to which and the manner in which the consumer spends his money is the key to our economic health.[1]

The problem today is to develop appropriate techniques useful in the acquisition of economic information. Decisions of an economic nature can be no better or more durable than the level of economic understandings held by the majority of citizens.[2]

In 1964, a study was made by Hall "to isolate and define certain understandings and concepts basic to

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[1]Herbert A. Tonne, "Too Much Information Would Only Befuddle Them," Journal of Business Education, XXXV (May, 1960), 336-37.

[2]David R. Dilley, "Common Sense Education," Journal of Business Education, XXXVII (February, 1962), 195-99.

comprehension of the personal economic elements essential for sound financial management."[1] Hall stated that

> The major way in which personal economic competence may be gained is by structuring concepts that facilitate solution of even the more complex financial problems . . . . . .
>
> Concept development involves logical simple steps that facilitate the acquisition of important educational goals and extend well beyond the limits of factual and knowledge types of learning. Acquiring appropriate education for life is dependent upon articulate progression through five significant teaching-learning steps. These five teaching-learning steps provide valuable educational experience as the result of (1) gathering facts, (2) sorting facts to gain knowledges, (3) assimilating knowledge relationships to develop understandings, (4) reflecting on understandings to form concepts, and (5) applying those concepts through actions that reflect an attitude.[2]

Hall used the concept approach in determining the content for personal economics. This approach was designed to go beyond facts and knowledges to reveal the broad understandings and concepts upon which appropriate attitudes are to be based if economic competency is to be demonstrated.

Money, credit, insurance, saving, taxation, and investment were the fundamental areas of personal economics reviewed by Hall. Only statements of an understanding, concept, and attitude nature which were based upon acts and knowledges were presented by Hall. Hall outlined each of the areas listed above using the concept approach.

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[1]E. Carl Hall, "Selected Areas of Personal Economics Conceptually Defined," (unpublished Ed.D. dissertation, University of Oklahoma, 1964), p. 41.

[2]Ibid., pp. 41-42.

The following is a composite outline of both the personal and social aspects of economics:

I. Elements of Personal Economics
   A. How the Individual Uses Money to Facilitate Financial Activities
      1. Allocation of family money resources; financial goals and stability
      2. Economic and social development
      3. Problems arising from money mismanagement
      4. Role of banks in coordinating personal financial activities
      5. Money as an economic servant
   B. Credit as a Tool of Personal Financial Management
      1. Personal and social economic stability and financial democratization
      2. Sources and costs of credit
      3. Legal aspects of transactions
      4. Possible "narcotic" effect of credit
      5. Flexibility of consumption; stimulation of buying
      6. Increasing productive power and economic growth
   C. How Insurance Provides Personal and Social Economic Stability
      1. Economic security; sharing of economic risks
      2. Economic stability, higher standard of living, and financial growth
      3. Utilization of insurance dollars; estate creation
      4. Types and purposes of insurance; legal structure
      5. Support of a dynamic competitive economic system
   D. How Saving Facilitates the Acquisition of Goods
      1. Administering saving programs
      2. Financial emergencies and utilization of opportunities
      3. Purposes and patterns of saving
      4. Institutions and instruments
   E. Taxation as It Affects the Individual
      1. Public facilities and services
      2. Individual duties and responsibilities under tax laws
      3. Tax structure and allocation of revenue

F. How Investments May Be Used to Gain Financial Independence
   1. Investments in relation to financial goals
   2. Opportunities for investment in private and government securities
   3. Ownership of business through securities
   4. Technological progress and economic survival
   5. Forms and channels of investment

II. Elements of Social Economics
   A. How the Economic System Uses Productive Resources in Satisfying Competing Wants
      1. Scarcity; the need for economizing
      2. Way the system allocates resources
      3. Role of incentives, competition, and markets
      4. Modern business, economic concentration, and monopoly
      5. Government and the allocation of resources; taxes and government spending
      6. International allocation of resources; international trade
   B. How the Economic System Obtains Reasonable Growth and Stability
      1. Importance of economic growth and stability
      2. Measures of national income and production
      3. Main forces determining national production and income
      4. Role of government budgets; expenditures, taxes, and borrowing
      5. The banking and monetary system
      6. Problem of economic growth
      7. Growth and the underdeveloped countries
   C. How the Economic System Distributes Income
      1. Personal distribution of income in the United States
      2. Labor, wages, and labor unions
      3. Farm income; the farm problem
      4. Desire for economic security
   D. Comparative Economic Systems; Communism, Socialism, and Capitalism[1]

Significant personal economic elements used in the outline were taken from the attitude and concept statements which

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[1]Hall, "Personal Economics Conceptually Defined," pp. 107-09.

were defined by Hall. The elements of social economics used in the outline were taken from the National Task Force Report, Economic Education in the Schools.[1] The composite outline includes those elements with which all students should be familiar upon graduation from high school.

Hall's conclusions were:

1. The "personal" and "social" aspects of economics must be recognized and constantly kept in mind if curriculum planning is to be effective in the area of development of sound economic ideas.

2. The content for both personal and social economics can be so designed that, through generalization processes, students may crystallize in their thinking the broad ideas that have lasting benefit in application to the financial circumstances of life.

3. ". . . areas of personal economics can be conceptually developed and presented so that greater depth of meaning may be acquired." Understandings, concepts, and attitudes can be developed in a study of personal economics so that learning goes beyond the fact and knowledge levels into comprehension of broad ideas for a more beneficial and permanent type of learning.

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[1]National Task Force on Economic Education, Economic Education in the Schools, A Report of the National Task Force on Economic Education (New York: The Committee for Economic Development, 1961).

4. "The general education curriculum aimed at intellectualizing the study of human behavior may be enhanced by the conceptual approach to the study of personal economics at all educational levels."[1]

Berghaus, in 1966, conducted a study to develop a sequence of content ideas for ensuring continuity in the presentation of essential understandings and concepts in money management.[2] The sequential pattern was structured for the primary, intermediate, junior-high, and senior-high grade levels. Berghaus established the scope of essential learning about money management through further refinement of the concepts and understandings formulated by Hall for the six areas of personal economics: money, credit, saving, insurance, taxation, and investment. Berghaus increased in scope and complexity the elements of concepts presented in the primary grades through high school level so that young people completing the developmental sequence may gain clearer perception of the essential elements in money management.

In conclusion, Berghaus found that there is growing recognition among educators of the intense need for

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[1]Ibid., pp. 109-10.

[2]Nona Rose Berghaus, "A Developmental Sequence of Content Essential to Personal Money Management," (unpublished Ed.D. dissertation, University of Oklahoma, 1966), pp. 107-08.

individuals to gain competence in the personal economic elements of life: there is a need for further refinement of the scope and sequence guides for the study of personal economics in areas such as buymanship, law, and mathematics in addition to the areas of money, credit, saving, insurance, taxations, and investment; and continuous utilization in grades K-12 of the concept development approach to teaching personal money management in addition to the cumulative sequential patterns developed will facilitate a competency now achieved in basic courses of study, such as science and mathematics, by young people as they progress from elementary through high school.[1]

In 1966, Muskrat attempted to isolate and define certain understandings and concepts basic to and essential in sound buymanship.[2] The Muskrat study is similar to the Hall[3] study with the exception that Muskrat isolated the study to the one area, buying. The concepts and understandings discovered in the Muskrat study presented in depth some of the tools with which students may gain a

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[1]Berghaus, "Personal Money Management," p. 102.

[2]Eleanor M. Muskrat, "Elements in Buying Conceptually Defined," (unpublished Ph.D. dissertation, University of Oklahoma, 1966), pp. 8-9.

[3]Hall, "Personal Economics Conceptually Defined."

clearer perception of management of personal economic affairs.[1]

In conclusion, Muskrat developed the following generalized statements:

1. If curriculum planning in the area of buymanship is to be effective, both information of an individual and a collective complex must be recognized and constantly kept in mind.

2. The substantive content of education in buying should be designed so that students may isolate and define the broad ideas and develop attitudes, through generalization processes, that will benefit them when applied to the various circumstances connected with buying.

3. The content of buying can be conceptually developed and presented so that greater depth of meaning may be acquired by the student. Concepts and attitudes can be developed to enable the student to extend his scope of understanding beyond the factual and knowledge levels.

4. The general education curriculum may be enhanced by the conceptual approach to the teaching of buying at an educational level.[2]

In summary, this section has presented information about the need for personal-business knowledges and

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[1]Muskrat, "Buying Conceptually Defined," pp. 8-9.

[2]Ibid., pp. 92-93.

understandings and the attempts that have been made to structure through the concept approach the content of courses in consumer economics in the elementary through the secondary school level.

Research Directly Related to Personal-Business Knowledges and Understandings

No study was found that had involved the testing of vocational and non-vocational students who had had a general business course at the tenth-grade high school level and the comparison of their knowledge of personal-business understandings with the knowledge held by vocational and non-vocational students who had not had a general business course at the tenth-grade high school level. However, many studies were found which related to the present investigation. The following is a review, in chronological order, of those studies that were considered relevant.

Knapp, in 1952, constructed a test to measure the consumer knowledges and concepts of liberal arts college students at Macalester College. The objective of his study was to find out how different groups of students performed on the test. The test was administered to 120 students in regular classes under practically identical conditions.[1]

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[1]Charles William Knapp, "A Test to Determine Certain Consumer Knowledges and Concepts Possessed by College Students at Macalester College," (unpublished Master's thesis, University of Minnesota, 1952), p. 1.

The t-test was used to test the hypotheses that the test scores will demonstrate that there is no significant difference between the test results because of (1) the sex of the student, (2) the marital status of the student, (3) the grade (year) in college, and (4) the student's classification as either an economics or non-economics major, and any difference that does appear is only a random sampling error. All four hypotheses were supported.[1]

Knapp's conclusions were

1. A precedent was established for further research into consumer ability of school, college, and university groups.
2. While it is not determinable just how effective college students would be as consumers, the test indicated that probably half of the students tested showed a rather poor grasp of common consumer knowledges and concepts.
3. It can be affirmed that differences in test scores were not due to single factors such as the sex of the student, his marital status, his major in economics or the lack of it, his grade or year in school, or the scholastic standing of the student.
4. The introduction of a course of study in consumer education into the college curriculum, open to all students, would seem to be justifiable.[2]

In 1958, Jelley attempted to determine the money management understandings of second-semester high school seniors. The four major steps in the study were:

1. To isolate the topics dealing with money management which are of a greatest importance;

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[1]Ibid., pp. 29-32.

[2]Ibid., p. 62.

2. To determine the extent of twelfth-grade students' understandings of these money management topics;
3. To analyze and interpret the knowledge evidenced by students differing in socio-economic status;
4. To indicate how the evidence gathered can be used in curricular planning.[1]

A test composed of 60 objective questions and an interview guide was constructed to measure understandings in three major areas: (1) borrowing money and using credit, (2) managing personal finances, and (3) insurance. The test was administered to 603 seniors in five high schools in the Cincinnati, Ohio area. In addition, interviews were held with 102 of these seniors in an attempt to validate the results of the test. The Minnesota Scale for Paternal Occupations was used to divide the 603 seniors into three socio-economic classes. The 603 seniors were also divided into three academic groups on the basis of the grade-point averages which they earned during their last three years in high school.

The test results indicated that students could have profited by more instruction in topics dealing with borrowing money and using credit, and also in topics dealing with insurance.

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[1]Herbert M. Jelley, "A Measurement and Interpretation of Money Management Understandings of Twelfth-Grade Students," (unpublished Ed.D. dissertation, University of Cincinnati Teachers College, 1958), p. 1.

Jelley made statistical comparisons among the test scores of students who differed in socio-economic status, academic achievement, and sex on each section of the test.[1] In most money management areas, students from the upper and middle socio-economic groups scored higher than students from the lower socio-economic groups. When the differences in understandings which exist among the three academic groups were compared, those students who comprised the higher group scored significantly higher than those who made up the middle group and the middle group scored higher than the lower group. Male students scored higher on the insurance sections of the test; but on the other sections of the test, the differences were not statistically significant.

In 1962, Beattie conducted a study involving students enrolled in consumer education courses in twenty-three Minnesota high schools.[2] His study was concerned with determining the relationship between students' information about personal finance and the direction of their attitudes toward various phases of finance. Beattie prepared and administered a 200-statement opinion survey containing fifty opinion

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[1] Ibid., pp. 1-16.

[2] A. Donald Beattie, "Relationships Between High School Pupils' Information and Attitudes Toward Personal Finance," (unpublished Ph.D. dissertation, University of Minnesota, 1962), p. 1.

statements for each of the following four areas of personal finance: savings and investing, money management, credit, and insurance.

For the attitude inventory Beattie tested the hypothesis that there are no significant mean differences on the students' total score on the inventory and no significant mean differences in their scores on the four topics.[1] Beattie used the following classifications for grouping the students: sex, grade level, and socio-economic background.

The analysis of variance procedure was used to determine whether any significant differences existed in the mean scores for the four topics.[2]

Beattie's findings for the total attitude inventory revealed no significant difference between the mean scores for the sex, grade level, and socio-economic background classifications.[3]

Concerning the relationship between information and attitude, Beattie concluded that there is little relationship between the amount of correct information possessed and the direction of one's attitude toward

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[1] Ibid., p. 2.

[2] Ibid., p. 85.

[3] Ibid., p. 89.

personal finance,[1] and "that one should not expect to teach desirable attitudes toward personal finance on the basis of information alone."[2]

Ousdigian, in 1962, attempted to determine whether the ninth-grade students at Cleveland Junior High School, St. Paul, Minnesota, who took the basic business course had a greater increase in knowledge of fundamental economic concepts at the end of the school year than students with the same general ability and socio-economic background who had not taken the basic business course.[3]

The specific questions that Ousdigian's study focused upon were:

1. What effect, if any, does the socio-economic background as measured by parental occupations have on a student's economic understandings?
2. What effect, if any, does the general ability of a student have upon his capacity to learn certain basic concepts?
3. What general ability levels, if any, gained the most from the basic business course?
4. Is the basic business course justified in the junior high school curriculum?[4]

The general ability for the student was measured by the Otis Gamma Quick-Scoring Mental Ability Test. The

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[1]Ibid., p. 97.

[2]Ibid., p. 104.

[3]Theodore O. Ousdigian, "Economic Understandings of Ninth-Grade Students," (unpublished Master's thesis, University of Minnesota, 1962), pp. 2-3.

[4]Ibid.

students were then ranked from most intelligent to least intelligent. The Minnesota Scale for Paternal Occupations was used in determining the socio-economic background of the student.[1]

The Alft Standard Achievement Test in Economic Understandings for Secondary Schools was the measuring instrument for Ousdigian's study. The test was given at the beginning and at the end of the school year.[2]

Ousdigian used the two-way factorial analysis of variance for the statistical treatment of his data. The F test was used to test for significant differences at the .05 level.

Ousdigian concluded that:

1. A student's socio-economic background as measured by parental occupations does not affect his economic understandings.

2. The results of the post test reveal that the general ability of a student does have an affect upon his capacity to learn certain economic concepts although the gain scores do not show an affect.

3. The basic business students scored a great deal better on the post test than the non-basic business students

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[1] Ibid., p. 3.

[2] Ibid., p. 5.

in the highest ability group and in the average ability group; therefore, it can be assumed that these students learn basic economic concepts inside of the junior high school classroom rather than in everyday experiences outside of the classroom.

4. The academically talented as well as the average ability students benefit from taking a course in economic education, since it was established that the basic business students in the highest and average ability groups scored a great deal better on the post test.

5. If the basic business course is made fundamental to the needs of all students so that they can make more intelligent decisions in their everyday economic lives, it is justified in the junior high school curriculum.[1]

Miller, in 1963, conducted a study to determine the comparative increase or decrease in knowledge of economic concepts or understandings between the ninth-grade general business students and the ninth-grade non-general business students at Melrose High School, Melrose, Minnesota. The students were grouped as to their general ability and socio-economic background in the areas studied.[2]

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[1] Ibid., pp. 62-63.

[2] James B. Miller, "A Comparison of Students' Knowledges of Fundamental Economic Concepts and Understandings Before and After a Course in General Business," (unpublished Master's thesis, University of Minnesota, 1963), p. 1.

The Miller study was very similar to the Ousdigian[1] study. The specific problems investigated by Miller were:

1. Does general ability of the student have any effect on his economic concepts or understandings?
2. What ability groups can best understand economic concepts?
3. What effect does socio-economic status, as measured by parental occupation, have on the student's economic concepts?
4. Do ninth-grade students learn economic concepts outside the classroom?
5. What ability groups achieve the most knowledge from the general business curriculum?
6. What economic concepts can be learned in the ninth-grade general business course?
7. Is a course in basic economic concepts justified at the ninth-grade level?[2]

Miller used the Kansas Test on Economic Concepts as his measuring instrument.[3] The test was administered to all ninth-grade students at Melrose High School at the beginning of the school year and at the ending of the school year (for the school year 1961-1962).[4] In the final analysis test results for 72 general business students and 72 non-business students were used.[5]

For grouping the students as to their socio-economic background, Miller used four parental occupation groups--Group I--Professional, Semi-Professional, Managerial, Retail

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[1]Ousdigian, "Economic Understandings."

[2]Miller, "Economic Concepts and Understandings," p. 1.

[3]Ibid., p. 7.

[4]Ibid., p. 8.

[5]Ibid., p. 9.

Business, Clerical, and Sales; Group II--Skilled Labor and Trades; Group III--Semi-Skilled, Laborers, and Slightly Skilled; and Group IV--Farming.[1]

The Differential Aptitude Test was used to classify the students as to their general abilities.[2]

Miller's study also relates to Ousdigian's study in that Miller used the two-way factorial analysis of variance for the statistical treatment of his data. The F test was used to test for significant differences at the .05 level.

Miller's conclusions were:

1. The student's learning of economic understandings is not affected by his socio-economic background.

2. The general business students in all ability groups gained economic understandings as measured by the economic understandings test.

3. General business students did significantly better on the post test than the non-general business students; therefore, it can be concluded that these students learn economic concepts in the classroom.

4. Based on the results of the post test, the general ability of a student does affect his capacity to learn economic concepts. "Schools must realize that general

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[1]Ibid., p. 11.

[2]Ibid., p. 12.

business education is not only for low ability students but for all students."[1]

5. Based on the significant difference between the mean scores on the pretest and post-test between general business students and non-general business students, general business is a needed course in the curriculum.[2]

Anderson's study, conducted in 1964, relates significantly to the Beattie study. The purpose of Anderson's study was to determine the effectiveness of the teaching of money management values and attitudes by a high school department of business education. An especially constructed questionnaire was administered to freshmen and senior business students at Main Township High School East, Park Ridge, Illinois. The statements on the questionnaire were classified into the following four areas of consumer education: (1) installment buying, (2) consumer purchasing, (3) budgeting, and (4) savings.[3]

Anderson's conclusions were:

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[1]Ibid., p. 83.

[2]Ibid., pp. 83-84.

[3]John Norman Anderson, "A Study to Determine the Relationship of the Money Management Attitudes of Freshmen and Senior Business and Non-Business Students at Main Township High School East, Park Ridge, Illinois," (unpublished Master's thesis, Northern Illinois University, 1964), p. 1.

1. In a majority of the instances, more freshman business students than freshman non-business students maintained those attitudes which business educators consider important.
2. In a majority of the instances, more senior non-business students than business students maintained those attitudes which business educators consider important.[1]

Anderson did not explain why there was an exact reversal in the attitudes maintained between freshman and senior students.

Bernardi, in 1965, conducted a study to measure the learning in a college course in personal finance and to relate the measurement findings to the objectives of the course and to the textbook emphases. The knowledge of personal finance possessed by students completing the course with the amount of knowledge possessed by a similar group of students who had not taken the course was also compared.[2]

Bernardi randomly selected the samples from two subpopulations of students from the University of Oklahoma. Personal finance students who were taking a course in personal finance in the College of Business Administration made up the first sample. Non-personal finance students who were enrolled in classes in the College of Education made up the second sample.[3]

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[1]Ibid., p. 63.

[2]Ray Dee Bernardi, "The Collegiate Course in Personal Finance: Measurement of Learning Accomplished by Selected College Students," (unpublished Ph.D. dissertation, University of Oklahoma, 1969), p. 6

[3]Ibid., pp. 38-39.

Bernardi used the ACT scores to determine whether the subjects were equal in scholastic ability.[1] Ogden's[2] Achievement Test in Personal Finance for College Students was the measuring instrument used by Bernardi.[3]

Bernardi used the t-test to test the following hypotheses:

1. There are no differences in the overall performance on Ogden's test, other than those resulting from chance, between the pre- and post-test scores of those students who take personal finance.[4]
2. There are no differences in the overall performance on Ogden's test, other than those resulting from chance, between those students who take personal finance and those who do not.[5]

The two major hypotheses were also broken down into seven sub-hypotheses with reference to planning, buying, borrowing, saving, investing, protecting, and sharing.[6]

Bernardi's major findings were:

1. Students who studied personal finance made statistically significant gains in their total test scores from

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[1]Ibid., p. 41.

[2]Russell Lee Ogden, "The Construction and Standardization of an Achievement Test Designed to Measure Personal Financial Knowledges, Understandings, and Applications Possessed by Selected College Students," (unpublished Ed.D. Dissertation, Colorado State College, 1964).

[3]Bernardi, "Personal Finance," p. 42.

[4]Ibid., p. 53.

[5]Ibid., p. 54.

[6]Ibid., pp. 53-54.

the pre-test to the post-test. (There was an increase in means between the two tests from 22.70 to 37.37. Also, there was an increase in the median from 23 to 36 and the mode from 19-40.)

2. There was a significant increase in the means from pre-test to post-test in all seven content areas except one, that being the area of sharing.

3. There was no significant difference in the mean of the control group as compared to the pre-test mean of the experimental group. However, there was a highly significant difference when the mean of the control group was compared with the post-test mean of the experimental group.

4. The comparison of the experimental and the control groups in personal finance indicates that those students who had studied personal finance had a greater knowledge of personal finance than those who had not studied the course.[1]

In 1965, Jackson attempted to determine the effects of a course in consumer economics on the basic business

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[1]Ibid., pp. 78-79.

Understandings of the twelfth grade students at Waupun Senior High School for the year 1964-65.[1]

Jackson selected Beattie's[2] measuring instrument as a pre-test and post-test which was given to all seniors at Waupun Senior High School.

When Jackson compared the performance scores of all seniors from the pre-test to the post-test, there was an increase in the mean scores, but the increase was not significant. However, when the scores of the students who had taken the course were compared with those who had not taken the course, the difference between the two groups was significant. When Jackson matched groups on the basis of intelligence test scores, the group who had taken the consumer economics course had significantly higher scores on the post-test than those who had not taken the course.[3] Jackson made a further comparison to negate the difference between the two groups by matching according to grade point average. Again, those who had taken the course scored significantly higher on the post-test than those who had not

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[1]Clayton Jackson, "A Study to Determine the Effects of a Course in Consumer Economics on the Basic Business Understandings of the Twelfth Grade Students at Waupun Senior High School for the year 1964-65," (unpublished Master's thesis, Wisconsin State University, Whitewater, Wisconsin, 1964), p. 1.

[2]Beattie, "Information and Attitudes Toward Personal Finance."

[3]Ibid., p. 22.

taken the course. The gain in score from pre-test to post-test between the matched groups on the basis of intelligence also proved to be significant.[1]

A study was conducted by Nelson, in 1966, to determine whether any change occurred in the students' attitudes toward savings and investing, money management, credit, and insurance as a result of completing a course in consumer education in which these topics were studied.[2]

Nelson tested the hypothesis that there is no significant difference between the mean scores on the pre-test and post-test for the personal finance topics of savings and investing, money management, credit, and insurance of (1) the entire group; (2) of the boys and girls; (3) of the juniors and seniors; (4) of students of varying abilities as measured by the Otis Test of Mental Ability; and (5) of the students of varying socio-economic backgrounds classified according to The Minnesota Scale for Paternal Occupations, the classifications being: Class I--Professional; Class II--Semi-professional and managerial; Class III--Clerical, skilled trades, and retail business; Class V--Semi-skilled occupations, minor clerical positions, and minor business; Class VI--Slightly skilled trades and

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[1]Ibid., pp. 37-38.

[2]Keith W. Nelson, "Students' Attitudes Toward Selected Personal Finance Topics," (unpublished Master's thesis, University of Minnesota, 1966), p. 1.

other occupations requiring little training or ability; and Class VII--Day Laborers of all classes.[1]

Beattie's[2] "Survey of Student Opinions Toward Personal Finance" was the measuring instrument used by Nelson.[3] "The opinion survey was administered to 42 students enrolled in the consumer education classes at Mounds View High School."[4]

Nelson's concluding statements were:

1. There is evidence indicating that studying the four personal finance topics had some affect on the students' attitudes toward those topics.
2. There was a significant change in the entire groups' attitudes toward all four of the personal finance topics.
3. There was a significant change in the boys' attitudes toward three of the topics, the exception being saving and investing.
4. There was a significant change in the girls' attitudes toward all four of the personal finance topics.
5. There was a significant change in both the juniors' and seniors' attitudes toward the personal finance topics.
6. There was no significant change in the attitudes of the above-average ability students toward the personal finance topics.
7. There was a significant change in the attitudes of the average-ability students toward money management, credit, and insurance, but not toward savings and investing.
8. There was a significant change in the attitudes of the below-average ability students toward all four of the topics.

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[1]Ibid., pp. 2-6.

[2]Beattie, "Information and Attitudes Toward Personal Finance."

[3]Nelson, "Personal Finance Topics," p. 3.

[4]Ibid., p. 3.

9. There was a significant change in the attitudes of the students in socio-economic Class I toward savings and investing and insurance.
10. There was a significant change in the attitudes of the students in Class II toward credit only.
11. There was a significant change in the attitudes of the students in Class III toward savings and investing, credit, and insurance, but not toward money management.
12. There was a significant change in the attitudes of the students in Class V toward all of the topics.
13. There was no significant change in the attitudes of the students in Class VI toward any of the topics.
14. There was no significant change in the attitudes of the students in Class VII toward all of the topics except money management.
15. There is evidence indicating that the study of the four personal finance topics had a tendency to change the students' attitudes in a favorable direction.[1]

In summary, nine research studies concerning subject matter that contained personal finance content were reviewed in this section. In each study an evaluation instrument was used that was either constructed by the researcher as a part of the study or that was selected from the limited number of tests available in the area studied.

Anderson,[2] Beattie,[3] and Nelson[4] conducted studies that dealt with attitudes held by students toward personal finance. The results of these three research studies were not consistent. Beattie concluded that one should not

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[1]Ibid., pp. 32-33.

[2]Anderson, "Money Management Attitudes."

[3]Beattie, "Information and Attitudes Toward Personal Finance."

[4]Nelson, "Personal Finance Topics."

expect to teach desirable attitudes toward personal finance on the basis of information alone, while Anderson and Nelson concluded that there is evidence that the study of personal finance has a tendency to change the students' attitudes in a favorable direction.

Bernardi[1] and Knapp[2] used college students in their studies, whereas Jackson,[3] Jelley,[4] Miller,[5] and Ousdigian[6] used high school students. In each case, the researchers used published tests in their investigations. Where comparisons were made between subjects who had completed a course with economic content with those who had not completed a course with economic content, those who had completed the course made greater gains between the pre-test and the post-test scores.

Research Directly Related to the Design of the Present Study

The problem of the Forkner study was to construct an achievement test that would sample the personal-business

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[1]Bernardi, "Personal Finance."

[2]Knapp, "Consumer Knowledges and Concepts."

[3]Jackson, "Consumer Economics Understandings."

[4]Jelley, "Money Management Understandings."

[5]Miller, "Economic Concepts and Understandings."

[6]Ousdigian, "Economic Understandings."

knowledges and understandings of high school juniors.[1] The test was designed to determine whether or not these pupils have sufficient personal-business knowledges and understandings to enable them to cope successfully with the persistent personal-business problems encountered in their daily lives.

The hypothesis tested by Forkner was:

> A valid, reliable achievement test of personal-business knowledges and understandings can be constructed and standardized. This test will sample knowledges and understandings of terms, facts, generalizations, principles, and concepts about personal-business as well as sample the ability to interpret and apply these knowledges and understandings using 'paper and pencil' test items.[2]

Forkner formulated a test blueprint and eleven major content areas were chosen as follows: (1) budgeting, (2) wise buying, (3) wise use of goods and time, (4) using banking facilities, (5) consumer credit, (6) thrift, (7) insurance and pensions, (8) housing, (9) legal information, (10) understanding tax forms, and (11) vocational information.[3]

Forkner had a jury of prominent business educators to weigh each of the objectives and content areas to determine what proportion of the test should be devoted

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[1]Forkner, "Personal-Business Knowledges and Understandings."

[2]Ibid., p. 3.

[3]Ibid., pp. 36-37.

to each. Specific content topics were selected that were pertinent to each objective and to each major content and were judged by the jury on the basis of their importance to successful personal-business life.[1]

One hundred two multiple-choice test items were written and the test items were administered to eleventh-grade pupils to provide a rough item analysis, and from that analysis, the unsatisfactory items were revised.[2] In the experimental tryout of the test items, two tryout test forms, each containing 50 items, were administered to 286 eleventh-grade pupils. Two hundred forty-two pairs of usable answer sheets were received from the administering of the test. Each of the one hundred test items was statistically analyzed to determine its difficulty, its discriminative power, and the attractiveness of each response. "Those items found to be unsatisfactory were revised or new items were written. The two forms of the test were found to be nearly homologous."[3] The final forms of the test of personal-business knowledges and understandings were administered to 276 eleventh-grade pupils from whom 237 pairs of usable answer sheets were obtained. The revised items were analyzed and were found to be suitable.

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[1] Ibid., p. 37.

[2] Ibid., p. 50.

[3] Ibid., pp. 94-95.

"On the basis of a statistical comparison, the two forms of the test were found to be nearly equivalent. The validity of the test was established on the basis of its conformity with the content and objectives presented in the test blueprint. The reliability coefficient was computed by correlating the scores achieved on the parallel forms of the test. The reliability coefficient was .796 and the standard error of measurement was found to be 2.22 for Form A and 2.24 for Form B. Percentile norms were computed for eleventh-grade pupils to provide a basis upon which to interpret test scores."[1]

One of Forkner's recommendations for further research was, "What is the level of achievement in personal-business knowledges and understandings of those pupils who have had a course in general business in the ninth or tenth grade as compared to those pupils who have not had such a course?"[2] The present investigation compared the achievement of tenth grade students who had had a course in general business with those who had not had a course in general business.

The purpose of the Peters study was to investigate the relationship between the development of personal-business knowledges and understandings and enrollment in

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[1]Ibid., pp. 113-14.

[2]Ibid., pp. 119-20.

general business courses and certain student-oriented factors.[1]

The six problems investigated by Peters were:

1. Do those ninth grade students who have taken a ninth grade general business course score higher on the Forkner Test of Personal-Business Knowledges and Understandings than those students who have not taken the course?
2. Do twelfth grade students, who have taken a course in general business at the ninth-grade level score higher on the Forkner test than those who did not participate in such a course?
3. Are different course patterns related to personal-business knowledges and understandings of twelfth grade students as measured by the Forkner test?
4. Is general scholastic ability related to performance of both ninth and twelfth grade students on the Forkner test?
5. Is the socio-economic background of the ninth and twelfth grade students related to their performance as measured by the Forkner test?
6. Is sex related to performance of both ninth and twelfth grade students on the Forkner test?[2]

Peters used the students' scores on the Otis Quick-Scoring Mental Ability Tests as the measure of scholastic ability.[3]

Ninth and twelfth grade students of the Mankato school system were given the test of Personal-Business Knowledges and Understandings in January of 1964.[4]

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[1]Peters, "Factors Related to Personal-Business Knowledges and Understandings," p. 1.

[2]Ibid., p. 2.

[3]Ibid., p. 22.

[4]Ibid., p. 23.

The analysis of covariance with the students' scholastic ability scores as the control variable was used to test for significant difference of the means of students' scores on the Forkner test, adjusted for differences in scholastic ability scores. Peters arranged the data so that the test of significance of difference in means would be between ninth grade student population strata classified on the basis of (1) enrollment in ninth-grade general business, (2) sex, and (3) socio-economic background of students. The twelfth grade student population was also stratified on the basis of (1) enrollment in ninth-grade general business, and (2) course patterns (courses elected in grades 10, 11, and 12).[1]

For ninth grade students, Peters found a significant difference at the .05 level in the means of students' scores on the Forkner test, adjusted for differences in scholastic ability scores, in favor of those who had been enrolled in a general business course as compared with those who had not been enrolled in a general business course. However, Peters found no relationship between the sex of the students and the development of personal-business knowledges and understandings as measured by the Forkner test. Nor did he find a relationship between the socio-economic background of the

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[1]Ibid., p. 38.

student and the development of personal-business knowledges and understandings, as measured by the Forkner test.[1]

For twelfth grade students, Peters found a significant difference at the .05 level in the difference of the means of students scores on the Forkner test, adjusted for difference in scholastic ability scores, in favor of those who had been enrolled in general business when they were in the ninth grade, as compared to those who had not been enrolled in general business when they were in the ninth grade. However, Peters found no relationship between the sex of the students and the development of personal-business knowledges and understandings as measured by the Forkner test. Nor did he find a relationship between the socio-economic background of the student or the course patterns of the student and the development of personal-business knowledges and understandings, as measured by the Forkner test.[2]

The design of the Peters study is very similar to the design of the present investigation and is further discussed in Chapter V. Peters used the analysis of covariance technique, whereas the one-way analysis of variance was used in addition to the analysis of covariance in the present

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[1]Ibid., pp. 53-54.

[2]Ibid., pp. 68-69.

investigation. Peters used ninth-grade and twelfth-grade students, whereas the present study dealt with vocational and non-vocational tenth-grade students. The Forkner Test of Personal-Business Knowledges and Understandings was the measuring instrument used by Peters. The Forkner test was also selected as the measuring instrument for the present study.

Summary

Chapter II has consisted of a comprehensive review of the literature which relates to the present investigation. Literature relating to concepts basic to comprehension of personal-business knowledges and understandings was first reviewed. Research directly related to personal-business knowledges and understandings was reviewed secondly; and, thirdly, research directly related to the design of the present study was reviewed. Although many studies relating to the present study were found, none were found that investigated the problem of this research study.

CHAPTER III

METHOD

Subjects

The original pool of subjects consisted of approximately 650 tenth-grade high school students. By a predetermined method (see Procedure section below) the total number of subjects included in the study was reduced to 120. The subjects for the two classifications, vocational and non-vocational students who had had the general business course, did not constitute a random sample since intact classroom groups were utilized. The subjects for the other two classifications, vocational and non-vocational students who had not had the general business course, were randomly selected using a table of random numbers for the selection.

Materials

The Forkner Personal-Business Achievement Test was designed to determine whether or not high school juniors have sufficient personal-business knowledges and understandings to enable them to cope successfully with the persistent

personal-business problems encountered in their daily lives.[1] The test covers the following areas of personal-business: budgeting, buying, use of goods, banking, credit, thrift, insurance, housing, legal, taxation, and vocations.[2]

The validity of the Forkner test was established on the basis of its conformity with the content and objectives presented in the test blueprint. The reliability coefficient was computed by correlating the scores achieved on the parallel forms (Form A and Form B) of the test. The reliability coefficient was .796 and the standard error of measurement was found to be 2.22 for Form A and 2.24 for Form B.[3] Form A was the test which was used in this study. (See Appendix A.)

The average corrected grade level for the Forkner Test, Form A, using the Dale-Chall Readability Formula, is ninth- and tenth-grade level. Although the Forkner test was designed for high school juniors, it was determined that it would be a satisfactory test to use for tenth-grade students based on the Dale Chall Readability Formula. (See Appendix A.)

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[1]Forkner, "Personal-Business Knowledges and Understandings," p. 1.

[2]Ibid., p. 106.

[3]Ibid., pp. 113-14.

The independent measures in this study were general business course enrollment, curriculum choice, scholastic ability, and gender. The dependent measure was the Forkner test score.

Pre-experimental Procedure

Approximately one week before the actual experimental procedure, the tests, answer sheets, and instructions were taken to the high school and were given to the tenth-grade English teachers and to the general business teacher. The correct number of tests, answer sheets, and instructions for each English teacher were grouped together and distributed by the tenth-grade English team leader. The tests, answer sheets, and instructions were given directly to the general business teacher.

Procedure

As the students entered their respective testing rooms, the teacher asked them to quietly be seated. The instructions for each group were read and the actual testing was conducted. (See Appendix A.)

After the data had been collected and scored, it was subjected to the following analyses: (1) a one-way analysis of variance using two treatment groups--vocational students who had had and who had not had the tenth-grade general business course--with the Forkner mean score analyzed; (2) a

one-way analysis of variance using two treatment groups--non-vocational students who had had and who had not had the tenth-grade general business course--with the Forkner mean score analyzed; (3) a one-way analysis of variance using two treatment groups--female and male vocational students--with the Forkner mean score analyzed; (4) a one-way analysis of variance using two treatment groups--female and male non-vocational students--with the Forkner mean score analyzed; (5) a one-way analysis of variance using two treatment groups--female vocational students who had had and who had not had the tenth-grade general business course--with the Forkner mean score analyzed; (6) a one-way analysis of variance using two treatment groups--male vocational students who had had and who had not had the tenth-grade general business course--with the Forkner mean score analyzed; (7) a one-way analysis of variance using two treatment groups--female non-vocational students who had had and who had not had the tenth-grade general business course--with the Forkner mean score analyzed; (8) a one-way analysis of variance using two treatment groups--male non-vocational students who had had and who had not had the tenth-grade general business course--with the Forkner mean score analyzed; (9) a one-way analysis of variance using two treatment groups--vocational and non-vocational students--with the Forkner mean score analyzed; (10) a one-way analysis

of variance comparing the scholastic ability scores for vocational and non-vocational students; and (11) an analysis of covariance using two variables at two levels (vocational curriculum--non-vocational curriculum; general business enrollment--non-general business enrollment), thirty replicates (thirty in each of the four groups), and one covariate adjuster, scholastic ability.

The two basic assumptions of one-way analysis of variance are that the subgroup categories be randomly drawn and that the variances within these subgroups be homogeneous.[1] The first assumption was not completely met. However, this would not invalidate the internal validity of the study. The vocational and non-vocational groups who had not had the tenth-grade general business course were randomly selected using a table of random numbers. The vocational and non-vocational groups who had had the tenth-grade general business course were intact groups. The second assumption was checked by dividing the smallest subgroup variance into the largest subgroup variance and interpreting the quotient F value for statistical significance from a table for the distribution of F. The variances within the subgroups were found to be homogeneous.

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[1]W. James Popham, Educational Statistics (New York: Harper & Row, Publishers, 1967), p. 168.

The assumptions in addition to the analysis of variance that must be met for the analysis of covariance are that the relationship between variables is linear and that homoscedasticity exists.[1] Visual inspection of the data indicated that these assumptions were sufficiently met.

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[1] Ibid., p. 230.

CHAPTER IV

RESULTS

The dependent measure used in the present study was the score obtained by each student on the Forkner Test of Personal-Business Knowledges and Understandings. The independent measures were general business course enrollment, curriculum choice, scholastic ability, and gender.

The dependent measure (Forkner test score) was subjected to nine, one-way analyses of variance, the independent measures being: general business course enrollment, curriculum choice, and gender. In addition, a one-way analysis of variance was performed comparing the California Test of Mental Maturity scores for vocational and non-vocational curriculum students. Inasmuch as this proved significant, the data were then subjected to an analysis of covariance with the Forkner test score as the dependent measure, the independent measures being: general business course enrollment, curriculum choice, and scholastic ability. The scholastic ability score was used as the controlled covariate adjuster.

Table 1 presents the one-way analysis of variance results for vocational students who had had and who had not had the tenth-grade general business course. (See Appendix B, Table B-1, for raw scores, means and standard deviations for the two groups.) The analysis revealed no statistically significant difference at the .05 level between the two groups.

TABLE 1

ANALYSIS OF VARIANCE SUMMARY TABLE OF FORKNER PERFORMANCE SCORES FOR VOCATIONAL STUDENTS WHO HAD HAD AND WHO HAD NOT HAD THE TENTH-GRADE GENERAL BUSINESS COURSE.

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F
Between Groups	1	6.6671	6.6671	0.3260*
Within Groups	58	1186.2625	20.4528	
Total	59	1192.9294		

*Not significant at the .05 level

The one-way analysis of variance results for non-vocational students who had had and who had not had the tenth-grade general business course are presented in Table 2. (See Appendix B, Table B-2, for raw scores, means and standard deviations for the two groups.) The analysis revealed no statistically significant difference at the .05 level between the two groups of students.

TABLE 2

ANALYSIS OF VARIANCE SUMMARY TABLE OF FORKNER PERFORMANCE SCORES FOR NON-VOCATIONAL STUDENTS WHO HAD HAD AND WHO HAD NOT HAD THE TENTH-GRADE GENERAL BUSINESS COURSE

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F
Between Groups	1	15.0000	15.0000	0.5395*
Within Groups	58	1612.7292	27.8057	
Total	59	1627.7292		

*Not significant at the .05 level

Table 3 presents the analysis of variance results for female and male vocational students. This analysis does not differentiate between those students who had had and who had not had the tenth-grade general business course. (See Appendix B, Table B-3, for raw scores, means and standard deviations for the two groups.) The analysis revealed no significant difference between female and male students.

The one-way analysis of variance results for female and male non-vocational students are presented in Table 4. This analysis does not differentiate between those students who had had and who had not had the tenth-grade general business course. (See Appendix B, Table B-4, for raw scores, means and standard deviations for the two groups.) No significant difference between the two groups was revealed.

TABLE 3

ANALYSIS OF VARIANCE SUMMARY TABLE OF FORKNER PERFORMANCE SCORES FOR FEMALE AND MALE VOCATIONAL STUDENTS

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F
Between Groups	1	0.2326	0.2326	0.0113*
Within Groups	58	1192.6956	20.5637	
Total	59	1192.9280		

*Not significant at the .05 level

TABLE 4

ANALYSIS OF VARIANCE SUMMARY TABLE OF FORKNER PERFORMANCE SCORES FOR FEMALE AND MALE NON-VOCATIONAL STUDENTS

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F
Between Groups	1	0.0204	0.0204	0.0007*
Within Groups	58	1627.7083	28.0639	
Total	59	1627.7285		

*Not significant at the .05 level

Table 5 presents the one-way analysis results for female vocational students who had had and who had not had the tenth-grade general business course. (See Appendix B, Table B-5, for raw scores, means and standard deviations for the two groups.) The analysis revealed no significant difference between the two groups.

TABLE 5

ANALYSIS OF VARIANCE SUMMARY TABLE OF FORKNER PERFORMANCE SCORES FOR FEMALE VOCATIONAL STUDENTS WHO HAD HAD AND WHO HAD NOT HAD THE TENTH-GRADE GENERAL BUSINESS COURSE

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F
Between Groups	1	27.1110	27.1110	1.6667*
Within Groups	29	471.7271	16.2664	
Total	30	498.8379		

*Not significant at the .05 level

The one-way analysis of variance results for male vocational students who had had and who had not had the tenth-grade general business course are presented in Table 6. No significant difference was revealed between the two groups. (See Appendix B, Table B-6, for raw scores, means and standard deviations of the two groups.)

TABLE 6

ANALYSIS OF VARIANCE SUMMARY TABLE OF FORKNER PERFORMANCE SCORES FOR MALE VOCATIONAL STUDENTS WHO HAD HAD AND WHO HAD NOT HAD THE TENTH-GRADE GENERAL BUSINESS COURSE

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F
Between Groups	1	1.6726	1.6726	0.0652*
Within Groups	27	692.1890	25.6366	
Total	28	693.8616		

*Not significant at the .05 level

Table 7 presents the one-way analysis results for female non-vocational students who had had and who had not had the tenth-grade general business course. The analysis revealed no significant difference between the two groups. (See Appendix B, Table B-7, for raw scores, means and standard deviations for the two groups.)

The one-way analysis of variance results for male non-vocational students who had had and who had not had the tenth-grade general business course are presented in Table 8. The analysis revealed no significant difference between the two groups. (See Appendix B, Table B-8, for raw scores, means and standard deviations of the two groups.)

TABLE 7

ANALYSIS OF VARIANCE SUMMARY TABLE OF FORKNER PERFORMANCE SCORES FOR FEMALE NON-VOCATIONAL STUDENTS WHO HAD HAD AND WHO HAD NOT HAD THE TENTH-GRADE GENERAL BUSINESS COURSE

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F
Between Groups	1	7.7008	7.7008	0.3104*
Within Groups	20	496.1172	24.8058	
Total	21	503.8179		

*Not significant at the .05 level

TABLE 8

ANALYSIS OF VARIANCE SUMMARY TABLE OF FORKNER PERFORMANCE SCORES FOR MALE NON-VOCATIONAL STUDENTS WHO HAD HAD AND WHO HAD NOT HAD THE TENTH-GRADE GENERAL BUSINESS COURSE

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F
Between Groups	1	10.1470	10.1470	0.3280*
Within Groups	36	1113.7451	30.9374	
Total	37	1123.8921		

*Not significant at the .05 level

Table 9 presents the one-way analysis of variance results for vocational and non-vocational students. The analysis does not differentiate between those who had had and those who had not had the tenth-grade general business course. The analysis revealed a significant difference at the .05 level between the two groups. (See Appendix B, Table B-9, for raw scores, means and standard deviations of the two groups.)

The one-way analysis of variance results comparing scholastic ability scores for vocational and non-vocational students are presented in Table 10. The analysis revealed a significant difference at the .05 level. (See Appendix B, Table B-10, for raw scores, means and standard deviations of the two groups.

The analysis of covariance significance tests results are presented in Table 11. The analysis revealed no significant difference at the .05 level.

TABLE 9

ANALYSIS OF VARIANCE SUMMARY TABLE OF FORKNER PERFORMANCE SCORES FOR VOCATIONAL AND NON-VOCATIONAL STUDENTS

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F
Between Groups	1	235.1978	235.1978	9.8393*
Within Groups	118	2820.6451	23.9038	
Total	119	3055.8518		

*Significant at the .05 level

TABLE 10

ANALYSIS OF VARIANCE SUMMARY TABLE OF CALIFORNIA TEST OF MENTAL MATURITY SCORES FOR VOCATIONAL AND NON-VOCATIONAL STUDENTS

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F
Between Groups	1	2548.4119	2548.4119	14.9921*
Within Groups	118	20058.1016	169.9839	
Total	119	22606.5117		

*Significant at the .05 level

TABLE 11

ANALYSIS OF COVARIANCE SUMMARY TABLE SHOWING THE EFFECTS OF CURRICULUM CHOICE AND GENERAL BUSINESS COURSE ENROLLMENT ON FORKNER SCORES USING INTELLIGENCE AS THE COVARIATE ADJUSTER

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F
Vocational/Non-Vocational	1	45.47778	45.47778	2.297*
Training/Non-Training	1	32.10815	32.10815	1.622*
Interaction	1	5.22534	5.22534	.264*
Within	115	2276.16211	19.79271	

*Not significant at the .05 level

In the present study it was specifically hypothesized that:

Hypothesis 1. The Forkner test mean for vocational students who have had the tenth-grade general business course is greater than the Forkner test mean for vocational students who have not had the tenth-grade business course. Since the difference was not significant (see Table 1), this hypothesis was not supported ($F = .3260$, $df = 1,59$, $p < .05$).

Hypothesis 2. The Forkner test mean for non-vocational students who have had the tenth-grade general business course is greater than the Forkner test mean for non-vocational students who have not had the tenth-grade general business course. Since the difference was not significant (see Table 2), this hypothesis was also not supported ($F = .53958$, $df = 1,59$, $p < .05$).

Hypothesis 3. The Forkner test mean for female vocational students is greater than the Forkner test mean for male vocational students. The difference was not significant (see Table 3); this hypothesis was not supported ($F = .0113$, $df = 1,59$, $p < .05$).

Hypothesis 4. The Forkner test mean for female non-vocational students is greater than the Forkner test mean for male non-vocational students. Since the difference was not significant (see Table 4), this hypothesis was not supported ($F = .0007$, $df = 1,59$, $p < .05$).

Hypothesis 5. The Forkner test mean for female vocational students who have had the tenth-grade general business course is greater than the Forkner test mean for female vocational students who have not had the tenth-grade general business course. The difference was not significant (see Table 5); this hypothesis was not supported ($F = 1.667$, $df = 1,30$, $p < .05$).

Hypothesis 6. The Forkner test mean for male vocational students who have had the tenth-grade general business course is greater than the Forkner test mean for male vocational students who have not had the tenth-grade general business course. There was no significant difference (see Table 6); this hypothesis was not supported ($F = .0652$, $df = 1,28$, $p < .05$).

Hypothesis 7. The Forkner test mean for female non-vocational students who have had the tenth-grade general business course is greater than the Forkner test mean for female non-vocational students who have not had the tenth-grade general business course. Since the difference was not significant (see Table 7, this hypothesis was also not supported ($F = .8402$, $df = 1,21$, $p < .05$).

Hypothesis 8. The Forkner test mean for male non-vocational students who have had the tenth-grade general business course is greater than the Forkner test mean for non-vocational students who have not had the tenth-grade

general business course. There was no significant difference (see Table 8); thus, this hypothesis was not supported ($F = .3280$, $df = 1,37$, $p < .05$).

Hypothesis 9. The Forkner test mean for vocational students is greater than the Forkner test mean for non-vocational students. Although departure from chance was significant ($F = 9.8393$, $df = 1,119$, $p < .05$), it was in the opposite direction; therefore this hypothesis was not supported (see Table 9).

Hypothesis 10. The California Test of Mental Maturity mean for non-vocational students is greater than the California Test of Mental Maturity mean for vocational students. Table 10 reveals that non-vocational students scored significantly higher than vocational students ($F = 14.9921$, $df = 1,119$, $p < .05$); thus, this hypothesis was supported.

Hypothesis 11. There is a significant difference between vocational and non-vocational students in personal business competencies as measured by the Forkner test. There was no significant difference ($F = 2.297$, $df = 1,115$, $p < .05$); thus, this hypothesis was not supported. (See Table 11.)

Hypothesis 12. There is a significant difference between enrollment and non-enrollment in a general business course as measured by the Forkner test. As shown in Table 11,

there was no significant difference ($F = 1.662$, $df = 1,115$, $p < .05$); thus, this hypothesis was not supported.

Hypothesis 13. There is a significant interaction between vocational and non-vocational students in personal business competencies and enrollment and non-enrollment in a general business course as measured by the Forkner test. There was no significant difference ($F = .264$, $df = 1,115$, $p < .05$); thus, this hypothesis was not supported. (See Table 11.)

CHAPTER V

DISCUSSION

The purpose of this study was to determine the relationship between the development of personal-business competencies and enrollment in a tenth-grade general business course. Other factors investigated were the relationship between the development of personal-business knowledges and understandings and (1) curriculum choice (vocational or non-vocational), (2) scholastic ability, and (3) gender.

In comparing the present study to the Peters study, the dependent measure was the same (score on the Forkner Test of Personal-Business Knowledges and Understandings). However, the independent measures in this study were: general business course enrollment, curriculum choice, scholastic ability, and gender; whereas Peters used grade level, enrollment in ninth-grade general business, gender, socio-economic background of students, and course patterns as independent measures.

In the present study, students' scores on the Forkner test and on the California Test of Mental Maturity (administered when the students were in the eighth grade) were analyzed to determine whether a relationship existed between

the students' performance on the two measures. The correlation coefficient between the two sets of scores of tenth-grade students was found to be .477. Peters likewise analyzed data on the Forkner test but used the Otis Quick-Scoring Mental Ability Tests as a measure of intelligence. The ninth-grade students' scores were based on the students' performance on the Otis Beta Test which had been administered when the students were in the seventh grade. The twelfth-grade students' scores were based on the students' performance on the Otis Gamma Test which had been administered when they were in the eleventh grade. Peters found the correlation coefficient between the two sets of scores of ninth-grade students to be .64, for twelfth grade students to be .73.

The sample for the present study was the tenth-grade class of a middle-size senior high school in Central Oklahoma. The total number for the sample of this study was limited to 120 by the size of enrollment in general business, in conjunction with the use of equal-N analysis of variance designs. Intact groups were used for those students enrolled in general business. Random sampling was used for the groups who were not enrolled in general business. Peters' sample totalled 364 for the ninth-grade sample and 348 for the twelfth-grade sample.

The Forkner test in this study was administered the last week of December 1970. This month was selected because

it coincided with the conclusion of the tenth-grade general business course which is presented during the first semester of the school year. This timing was comparable to that used by Peters in his study.

In the present study a one-way analysis of variance was performed for each of the independent measures using the Forkner test as the dependent variable. No significant difference in personal-business competencies as measured by the Forkner test was revealed between vocational students who had had and who had not had the tenth-grade general business course. Nor did this study reveal a significant difference in personal-business competencies as measured by the Forkner test between non-vocational students who had had and who had not had the tenth-grade general business course. However, when the mean of the Forkner test scores for the vocational group was compared to the mean of the non-vocational group, the difference proved to be significant ($F = 9.8393$, $df = 1,119$, $p < .05$). Inasmuch as there was a significant correlation between intelligence and the Forkner scores, which may have been the source of significance, the data were then subjected to a two-way (curriculum choice by course enrollment) analysis of variance with scholastic ability as the controlled covariate adjuster. After removal of variance due to intellectual ability, this analysis showed that the mean difference in personal-business competencies between vocational and non-vocational students was not significant. Similarly, the

difference in personal-business competencies between enrollment and non-enrollment in a general business course failed to reach significance. Moreover, the interaction between curriculum choice and course enrollment was not significant.

The findings of the present study were not totally consistent with the findings of the Peters study. The Peters study revealed a significant difference at the .05 level in favor of both ninth- and twelfth-grade students who had been enrolled in a general business course as measured by the Forkner test, adjusted for differences in scholastic ability.

The inconsistency of these findings might be attributed to any number of factors. One possible explanation might be found in sampling procedure and size of sample used. Not only was the Peters sample larger, but it is always possible that the populations from which the respective samples were drawn differ in undetermined ways.

The negative findings with regard to differences in personal-business competencies when compared across gender are consistent with the findings of the Peters study.

The present study, based on the students' performance on the Forkner test, did not support the theoretical assumption that if both vocational and non-vocational students were exposed to practical personal business procedures, the vocational students would acquire these procedures to a greater extent than non-vocational students. The failure to support

this assumption could be attributed to the operationalized classification of students as to vocational or non-vocational curriculum. Due to the fact that there appears to be a stigma attached to the word "vocational," the researcher did not ask the student for this information on the information blank that was completed by the student before taking the Forkner test. (See Appendix A.) Students were assigned to vocational or non-vocational groups on the basis of indicated plans to attend college and on the students' selection of specified elective courses in addition to high school graduation requirements. Those students who stated that they did not intend to go to college and who chose elective courses that were vocationally oriented were classified as vocational students. Vocationally oriented courses included such courses as: Business Machines, Cooperative Office Education, Distributive Education, General Shop, Machine Woodworking, Agriculture, Home Economics, and Gainful Employment. Those students who stated that they did intend to go to college and who chose college preparatory courses as elective courses were classified as non-vocational students. Although the theoretical assumption was not supported, this does not necessarily mean that there is no difference in the two types of students. It might also be that the measures used in this study failed to detect them.

Another possible explanation for the inconsistency of the findings of the present study and of the Peters study might be that of class scheduling. The present study was conducted in a school situation that had recently gone to flexible modular scheduling; whereas, although Peters did not state the type of class scheduling in operation in his study, it may be that differences in scheduling could affect the efficacy of the course. In addition to the type of class schedule in operation as an explanation for the inconsistency in findings, it might be that the structure of the general business course in the Peters study was more closely related to the objectives of the Forkner test than that of the present study.

Other possible explanations for the inconsistencies in the findings of the present study and the Peters study might be attributed to teaching methodology, attitudes of the students toward the general business course content, or attitudes of the students toward the teacher.

A further complicating factor is that the scholastic ability measures were not the same. Peters used the Otis Quick-Scoring Mental Ability Tests for the students in his sample; whereas, the California Test of Mental Maturity was used in this study. Reviews from the Fifth Mental Measurements Yearbook show split-half reliability coefficients for the Otis Quick-Scoring Mental Ability Tests to be--Beta test,

.93 (median grade level coefficient), Gamma test, .91 for grade eleven. The evidence concerning the validity of the test for predictive purposes is somewhat slender. Review from the Fifth Mental Measurements Yearbook reveals that the California Test of Mental Maturity was designed to correlate with the Stanford-Binet. Herein lies one of the chief claims for the validity of this test. For the total score, the single grade reliabilities, grades one, two, five, eight, twelve, and college freshmen, are all above .90.[1] Thus, with regard to the measure of intelligence used, methodologies of the two studies were not comparable.

It is important to continue researching variables that influence the effective teaching of personal-business skills. This is particularly true in relation to vocational students who will not continue formal education beyond high school and will be less likely to be exposed to learning experiences where they would acquire personal-business competencies.

It is well known that students' attitudes affect learning. This presents a challenge for the development of new methodologies which will capture the students' interest and thus provide motivation. For example, a simulation

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[1]The Fifth Mental Measurements Yearbook, ed. by Oscar Krisen Buros (Highland Park, New Jersey: The Gryphon Press, 1959), pp. 437-39, 497-500.

approach to actual business might be explored wherein students or groups of students would be provided with simulated assets and opportunities and then coached in the context of a real life experience to find their own successful solutions. This would permit a student to integrate business skills with his own personal values. Moreover, new ways might be attempted to integrate this course with later courses such as Distributive Education, Cooperative Office Education, Agriculture, and Home Economics, which are available to the vocational students before they leave high school.

CHAPTER VI

SUMMARY

Restatement of the Problem

The influence of enrollment in a general business course on the behavior of vocational and non-vocational students was investigated in this study.

An attempt was made to measure the extent to which a course in general business provided the background for students to become economically literate in personal-business knowledges and understandings. Also, an attempt to indicate how the evidence gathered could be used in curricular planning for vocational students was made.

Specifically, the problems investigated were:

1. Do those vocational students who have had a tenth-grade general business course score higher on the Forkner Test of Personal-Business Knowledges and Understandings than those vocational students who have not had a general business course?

2. Do those non-vocational students who have had a tenth-grade general business course score higher on the

Forkner Test of Personal-Business Knowledges and Understandings than those non-vocational students who have not had a general business course?

3. Is gender related to performance of vocational students on the Forkner Test of Personal-Business Knowledges and Understandings?

4. Is gender related to performance of non-vocational students on the Forkner Test of Personal-Business Knowledges and Understandings?

5. Is general scholastic ability related to performance of vocational students on the Forkner Test of Personal-Business Knowledges and Understandings?

6. Is general scholastic ability related to performance of non-vocational students on the Forkner Test of Personal-Business Knowledges and Understandings?

Procedure

The procedure followed in this study consisted of four major steps: (1) an in-depth study of the research and literature in the area of personal-business knowledges and understandings, (2) the selection and utilization of an evaluation instrument with which the primary data for this investigation were obtained, (3) the analysis and interpretation of the data used in solving the problem of the study, and (4) the writing of this research report.

This study was conducted at a middle-size senior high school in Central Oklahoma during the last week of December, 1970, using as subjects four groups: (1) vocational students enrolled in a tenth-grade general business course, (2) non-vocational students enrolled in a tenth-grade general business course, (3) vocational students who were not enrolled in a tenth-grade general business course, and (4) non-vocational students who were not enrolled in a tenth-grade general business course. For analytical purposes 30 students from each of the four groups were selected. The vocational and non-vocational students who were not enrolled in a tenth-grade general business course were randomly selected. The vocational and non-vocational students who were enrolled in a tenth-grade business course were not randomly selected. The students' California Test of Mental Maturity Scores were used as the measure of scholastic ability.

The test used in this study was developed specifically for testing achievement in personal-business knowledges and understandings.

All test data were submitted to statistical analyses. The one-way analysis of variance was used to determine the significance of differences between the means of the groups being compared. The analysis of covariance was used in order to control for scholastic ability of the groups being compared. Hypotheses were developed and tested statistically.

Findings

Based on an analysis of the test data presented in Chapter IV, the major findings were:

1. When the Forkner mean of the non-vocational students was compared with the Forkner mean of the vocational group, the difference was statistically significant in favor of the non-vocational group.

2. Likewise, when the California Test of Mental Maturity mean of the non-vocational group was compared with the California Test of Mental Maturity mean of the vocational group, the difference was statistically significant in favor of the non-vocational group.

3. When the Forkner mean, adjusted for scholastic ability of tenth-grade students who had had the tenth-grade general business course was compared with the Forkner mean of tenth-grade students who had not had the tenth-grade general business course, the difference was not significant.

4. The findings indicated no relationship between the development of personal-business knowledges and understandings and gender.

5. This investigation failed to corroborate the conclusions of other researchers that there is a significant relationship between the development of personal-business knowledges and understandings and enrollment in a general business course.

Conclusions

The researcher failed to corroborate the conclusions of other researchers that there is a relationship between the development of personal-business competencies and enrollment in a general business course.

Since the results were different from other similar studies, particularly the Peters study, the dissimilarity is possibly attributable to differences in teaching methodology.

This study corroborates the findings of similar studies with reference to gender. There is apparently no relationship between the development of personal-business competencies and gender.

Intelligence should be scrutinized in further studies of this kind to determine whether or not intelligence causes apparent differences.

Recommendations

The results of this study have raised several unanswered questions for educators who plan curricula and who assist students in planning their course of study. Therefore, it is recommended that research projects be designed to answer such questions as:

1. Are other measurable factors such as interest, attitude, peer influence, institutional climate, status of a

particular course of study, geographic location, or type of class scheduling, related to the development of personal-business knowledges and understandings?

2. Is teaching methodology related to the development of personal-business knowledges and understandings?

3. Is a one-semester general business course sufficient in terms of length of time, to develop personal-business knowledges and understandings?

4. Should personal-business knowledges and understandings be integrated into other courses, or should it be treated as a separate course?

Although each of these questions seems to be quite specific, the investigation in this study suggests ways and means for obtaining answers to these questions.

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APPENDIX A

DATA COLLECTION MATERIALS

Exhibit 1

INSTRUCTIONS TO THE TEACHERS

As the students enter the classroom, please ask them to quietly be seated. Then inform them that their participation in this study is appreciated and that it is a very important piece of research for a graduate student at the University of Oklahoma. Please emphasize that their performance on this test will in no way be a factor in the grade that they will receive in the course.

After the tests and answer sheets have been distributed, please read through the directions on the first page of the test with the students. Thank you.

Exhibit 2

INFORMATION BLANK

NAME _____
Last First Middle Initial

Birth date _____ Sex _____

Circle the correct choice:

I do or do not intend to go to college.

I am or am not in a college preparatory program.

Are you presently enrolled in General Business? Yes No

Have you had a course in General Business? Yes No

Check the courses that you plan to take as electives in addition to required courses for high school graduation.

Great Books	____	Speech I	____
Journalism	____	Speech II	____
World History	____	Speech III	____
Government	____	Debate	____
Psychology	____	Stagecrafts	____
Sociology	____	Art I	____
Economics	____	Art II	____
Geography	____	Art III	____
High School Math	____	Art Appreciation	____
Plane Geometry	____	Arts & Crafts	____
Algebra II	____	General Business	____
Solid Geometry	____	Typing I	____
Trigonometry	____	Typing II	____
Elementary Functions	____	Machines Math	____
Advanced Algebra	____	Bookkeeping	____
Biology I	____	Shorthand	____
Biology II	____	Business Machines	____
Chemistry I	____	Cooperative Office	
Chemistry II	____	Education	____
Physics	____	Distributive Education	____
French I	____	General Shop	____
French II	____	Machine Woodworking	____
French III	____	Electronics I	____
French IV	____	Electronics II	____
German I	____	Drafting I	____
German II	____	Drafting II	____
German III	____	Drafting III	____
Latin I	____	Vocational Agriculture I	____
Latin II	____	Vocational Agriculture II	____
Latin III	____	Home Economics II	____
Latin IV	____	Home Economics III	____
Spanish I	____	Home Economics IV	____
Spanish II	____	Gainful Employment	____
Spanish III	____	Adolescent Interest	
Spanish IV	____	Areas	____

Exhibit 3

THE FORKNER PERSONAL-BUSINESS
ACHIEVEMENT TEST--FORM A

Directions: Read each item completely and decide which choice best completes the statement or answers the question.

When you have decided which answer is best, blacken the corresponding space on the separate answer sheet. That is, if you think choice 2 is the best answer to test item 1, black out the 2 space in the row after No. 1 on your answer sheet. Do not mark your answers on the test booklet.

Your score will be the number of right answers, so it will be to your advantage to answer every question, even if you are not sure of the right answer.

Be sure your name is on your answer sheet.

1. According to law, the manufacturer's label on a sweater must include information about
   1. the size and color.
   2. methods of cleaning and care.
   3. shrinkage such as "Sanforized."
   4. the kinds and combinations of fibers.

2. In order for a written contract to be legally enforceable, which of the following must be included?
   1. The names of the parties entering the agreement.
   2. Evidence of legal ownership by the seller.
   3. A guarantee on the goods to be sold.
   4. The credit rating of the buyer.

3. A credit rating is best defined as
   1. the means by which something of value is obtained with the promise to pay for it in the future.
   2. a person's reputation for honesty and dependability that shows he will pay his debts when due.
   3. the amount of money a person is able to earn that shows whether he can pay his debts in the future.
   4. the amount of assets a person has that shows his ability to pay his debts when due.

4. John does not have a checking account. He wishes to order $30 worth of merchandise from a mail order store which requires cash before shipment. Which one of the following ways is the most suitable for John to send the cash?
   1. Traveler's check
   2. Currency
   3. Counter check
   4. Bank money order

5. When being interviewed for a job, a person should
   1. never ask about salary.
   2. let the interviewer guide the discussion.
   3. be willing to accept any job offered him.
   4. bring up personal problems as reasons for being hired.

6. It would be best for one to seek advice in which one of the following situations?
   1. Before one signs an installment contract for a $3,000 automobile.
   2. Before one buys a $10,000 life insurance policy.
   3. When one is planning to draw up his will.
   4. When one has been involved in an automobile accident for which he has insurance.

USE THE FOLLOWING INFORMATION TO ANSWER QUESTIONS 7 AND 8:

John's parents give him $2.50 allowance each week, and he usually earns $5.00 each week, although sometimes he earns as much as $2.00 extra on his part-time job. He prepared the following weekly budget for his own use.

Estimated Income		Estimated Expenditures	
Allowance	$2.50	Savings	$ .50
Part-time work	5.00	School needs	1.00
		School lunches	2.00
		Personal needs	1.00
		Donations	.50
		Snacks and fun	2.50
Total	$7.50	Total	$7.50

7. Would John's budget be considered good or poor? Why?
   1. Good because he allowed one-third for entertainment.
   2. Good because he included only his regular income.
   3. Poor because he forced his expenses to equal his income.

8. After keeping his budget for several months, John found that his actual expenses in some of the budget categories were greater and some were smaller than the amounts he had budgeted. What should he do about his budget now?
   1. Revise his budget using income and expense records as a guide.
   2. Make a completely new budget that includes his extra income.
   3. Change his spending habits so that his actual expenses will be the same as his budgeted expenses.
   4. Stop keeping his budget because such planning seldom can be followed.

9. It would be economically wise to buy a home rather than rent when
   1. money can be borrowed to make the down payment.
   2. the budget allowance for housing must be increased.
   3. the future in terms of income and position appears secure.
   4. rents are slightly higher than mortgage payments.

10. One of the major occupational changes in the United States since 1950 is that job opportunities have increased for
   1. skilled farm workers.
   2. skilled office workers.
   3. workers with general rather than special training.
   4. workers who have dropped out of school.

11. Before shopping, Mrs. Jones compared her weekly grocery list with various newspaper advertisements. She found that Store A advertised her favorite brand of coffee reduced from 79¢ to 69¢ per pound. Store B is small and does not advertise. Store C advertised several items on her list at a savings of 2 or 3 cents on each item. Store D advertised double Green Stamps given with each purchase but prices seemed only slightly higher. In which store would Mrs. Jones be most likely to save money? Why?
   1. Store A because the saving on coffee is a good indication of savings on other groceries.
   2. Store B because prices might be lower since it does not advertise.
   3. Store C because of the known savings on several of the items on her list.
   4. Store D because the extra stamps she would receive would more than make up for the slightly higher prices.

12. Which of the following is a service offered by commercial banks to individuals?
   1. Lend money to help them pay for such things as furniture and automobiles.
   2. Issue postal money orders to help them pay their bills by mail.
   3. Cash personal checks for those who do not have an account in that bank.
   4. Accept money for deposit in other banks.

13. Mrs. Wills paid $50 down on a new electric dishwasher and signed an installment contract for the balance. The dealer's warranty covered all parts and labor for one year. Two months later the motor stopped. Mrs. Wills called the dealer and he said, "I am not responsible for the repair or replacement of the motor." Mrs. Wills should now have the machine repaired and
    1. pay for the repairs herself.
    2. stop making her monthly installment payments.
    3. tell all her friends about the poor service she received.
    4. deduct the cost of the repairs from her monthly payments.

14. What is a deed?
    1. Written evidence of ownership of real property.
    2. Written evidence of clear title to real property.
    3. A contract of sale of real property.
    4. A contract for a loan to purchase real property.

15. Mr. Harrison died when his wife was 48 years old. He was fully covered by social security and has $20,000 of life insurance. Which one of the following plans would be the most advantageous to Mrs. Harrison?
    1. Arrange for a lump sum settlement of the life insurance and a life income settlement of the social security benefits, starting immediately.
    2. Arrange for a lump sum settlement of the social security benefits, and a life income settlement of the life insurance, starting immediately.
    3. Arrange for a life income settlement from both, the life insurance starting immediately and the social security starting at her age 62.
    4. Arrange for a life income settlement from both, the social security starting immediately and the life insurance starting at her age 62.

16. When interest earnings are added to savings deposits and future interest payments are made on both the deposits and accumulated interest, it is called
    1. accumulating interest.
    2. add-on interest.
    3. installment interest.
    4. compound interest.

17. A good investment is one that
    1. has a long dividend record and is in an old established company.
    2. earns a fair return, is safe, and is readily marketable.
    3. is listed on various stock exchanges, and is in a business that is highly competitive.
    4. has a high growth potential and has low marketability.

18. Which of the following advertising slogans is misleading?
    1. "Progress is our most important product."
    2. "Four out of five doctors recommend."
    3. "The pause that refreshes."
    4. "Better living through chemistry."

19. One good reason for keeping a budget is that it tends to
    1. increase one's money income.
    2. increase one's standard of living.
    3. decrease one's economic necessities.
    4. decrease one's fixed expenses.

20. Mary worked part-time during the 10-month school year and earned $540. Each month her employer deducted a certain amount for federal income tax withholding. Which one of the following should Mary do at the end of the year?
    1. Nothing. She earned less than $600 in one year, therefore she does not have to pay any income taxes.
    2. Tell her parents to include her earnings and taxes withheld on their income tax return.
    3. Leave the amount on deposit with the Internal Revenue Service to reduce the amount of taxes she may pay in the future.
    4. File an income tax return to the Internal Revenue Service and ask for a refund.

21. According to many employers, the major reason most people lose their jobs is their lack of skill in
    1. human relations.
    2. reading and spelling.
    3. mathematics.
    4. job techniques.

22. Which one of the following would be the best source of information about the educational requirements, duties, and salaries for different kinds of jobs.
    1. Help wanted ads.
    2. Personnel directors.
    3. Private employment agencies.
    4. Dictionary of Occupational Titles.

23. An open account permits a customer to
    1. buy goods and to pay for them with regular payments over a period of time.
    2. select goods that are put aside by the merchant and held until the goods are paid for by regular weekly payments.
    3. show his credit card when making a purchase, sign a sales slip, and to pay for the purchase at the end of the month.
    4. open a charge account in any store by merely showing his charge-a-plate.

24. A properly kept check stub record will
    1. provide legal proof that a bill has been paid.
    2. give a complete record of income and expenses.
    3. provide legal proof that a deposit has been made.
    4. indicate the approximate amount of money in the account.

25. The Smiths have recently completed paying for a 5-year-old car. They think it is time to buy a new car which they can do by trading in their old car and paying $65 per month for 30 months. Their budget allowance for transportation is $80 per month. Should the Smiths buy the new car?
    1. Yes because they can budget for the monthly payments.
    2. Yes because their old car is completely paid for.
    3. No because they will not get enough trade-in value for their old car.
    4. No because they would be unable to afford insurance, maintenance and gasoline.

26. Last year Mr. Smith had an adjusted gross income of $6,000. His records show the following:

Interest on the mortgage on his home	$600
State income tax	80
Medical expenses	200
Church donations	150
Gift to his mother	300

Mr. Smith found the following Federal Income Tax regulations:

Deductions Allowable	Deductions Not Allowable
Interest on debts	Gifts to political parties
State and local taxes	Social Security taxes
Medical expenses in excess of 3% of adjusted gross income	Federal excise taxes
	Gifts to individuals
Charitable and religious contributions	

Based on Mr. Smith's records and the Federal Income Tax Regulations shown above, what is the total deduction he may claim on his federal income tax return?

1. $850
2. $960
3. $1000
4. $1230

27. If a person purchases 100 shares of stock in Company A and a $1,000 bond in Company B, what is his relationship with each company?

1. He is a part owner of both Company A and Company B.
2. Both Company A and Company B owe him money.
3. He is part owner of Company A and Company B owes him money.
4. He is a part owner of Company B and Company A owes him money.

28. A time budget is a plan to help

1. budget one's weekly or monthly pay check.
2. use one's work and leisure hours effectively.
3. decide when one can afford to buy something on credit.
4. pay one's monthly bills on time.

29. Joan took a test that was designed to help her discover what kinds of activities she likes most. What is this type of test commonly called?
    1. An achievement test.
    2. A personality test.
    3. An interest inventory.
    4. A vocational inventory.

30. If a person owns a car and carries public liability insurance, that insurance protects him
    1. from claims resulting from injuries to other people by his car.
    2. from claims resulting from damage to another car by his car.
    3. by paying medical expenses in case he or his passengers are injured while in his car.
    4. by paying for repairs to his car if it has been damaged by another car.

31. Before buying a new TV set, John wants to find out the make and model that will give him the best service at the price he can afford to pay. Which of the following is most likely to give him the most reliable information?
    1. Consumer Reports or Consumer Bulletin.
    2. Advertising in newspapers and magazines.
    3. Sales clerks and the experience of his friends.
    4. The National Bureau of Standards or the Federal Trade Commission.

32. Mr. French has a good job with a secure future and is paying $90 per month for rent. His budget allowance for housing is $90 and cannot be increased. He has $1,000 in his savings account. He has found a new home that can be purchased for $1,000 down and mortgage payments of $90 per month. Would he be wise to buy the new home or to continue to rent? Why?
    1. Buy because he can make a large down payment.
    2. Buy because his future income will be steady.
    3. Rent because his housing budget will meet only the mortgage payments.
    4. Rent because $1,000 is too large an investment to make all at once.

33. SELECTION OF YOUR INDIVIDUAL INCOME TAX FORM

Form	Adjusted Gross Income	Method of Computation
1040A	$5,000 or less	Tax table
1040A	$5,000 to $10,000	Standard Deduction (10% of gross income)
1040	Any income	Itemize deductions

Mr. Jones' adjusted gross income for the year equals $6,000. His deductions total $725. To provide himself with the greatest tax savings, which tax form should he use and what would be the best way for determining the amount of his tax?

1. Form 1040A, standard deduction.
2. Form 1040, tax table.
3. Form 1040, standard deduction.
4. Form 1040, itemize deductions.

34. While reconciling his monthly bank balance, John found he had outstanding checks of $35.00 and a monthly service charge of $2.00. Which of the following procedures should John use to complete his reconciliation correctly?

1. Subtract $35.00 from the bank statement balance and add $2.00 to his check stub balance.
2. Subtract $35.00 from his bank statement balance and subtract $2.00 from his check stub balance.
3. Add $35.00 to the bank statement balance and add $2.00 to his check stub balance.
4. Add $35.00 to the bank statement balance and subtract $2.00 from his check stub balance.

35. If a person purchased a refrigerator on credit and was unable to pay his debt, the store to whom he owed the money may

1. order a deficiency judgement.
2. invoke the statute of limitations.
3. obtain an attachment on some of his property.
4. charge compound interest on the amount owed.

36. The money that is exchanged to make a contract legally binding is called the

1. offer.
2. lien.
3. garnishment.
4. consideration.

37. One advantage to a person buying on credit is that he often
    1. saves money.
    2. buys impulsively.
    3. gets better service.
    4. buys only what he needs.

38. In planning a budget, which of the following is considered a fixed expense?
    1. Insurance.
    2. Utilities.
    3. Clothing.
    4. Food.

39.

MONTHLY SOCIAL SECURITY BENEFITS

If average monthly earnings were	$300.00	$400.00
Retired worker at age 65	$105.00	$127.00
Worker's wife if 65 or over	52.50	63.50
Widow with children under age 18	78.80	95.30
One child under 18	78.80	95.30
Each additional child under 18	78.80	63.50

*The maximum allowance for any family is $254 per month.

Mr. Wilson and his wife are both 65 and are fully covered by social security. His average monthly earnings have been $400 and her average monthly earnings have been $300. Based upon the table shown above, what monthly retirement income would the Wilsons receive from Social Security?
1. $127.00.
2. $179.50.
3. $190.50.
4. $232.00.

40. A period of inflation would cause the most financial stress to which of these groups?
    1. Wage earners.
    2. Retired workers.
    3. Salaried employees.
    4. Professional people.

41. After completing the correct steps to reconcile his bank balance, John found the check stub record and the bank statement were still not in balance. What should he do now?
    1. Check the accuracy of the arithmetic on the bank statement.
    2. Compare the amounts deposited with those shown on the bank statement.
    3. Compare the amounts on the canceled checks with those shown on the bank statement.
    4. Take the check stub record, canceled checks, and bank statement to the bank for help.

42. A person can borrow $120 from his bank at 8% interest annually and repay the loan in six monthly installments. Which of the following would be the easiest and correct way to determine the dollar cost of that loan?
    1. Divide $120 by 6 months and multiply that answer by .08.
    2. Divide $120 by .08 and divide that answer by 2.
    3. Multiply $120 by .08 and divide that answer by 2.
    4. Multiply $120 by .08 and divide that answer by 6 months.

43. Tom is married and has one small child. He purchased his home 5 years ago on a 30-year mortgage. He owns $5,000 of life insurance. He has an opportunity to invest $20 a month in the common stock of a good electronics firm. He investigated and found the firm to be in excellent financial condition. In this situation, would this be a good or poor investment? Why?
    1. Good because electronics firms have a history of rapid growth.
    2. Good because he investigated before he decided to invest.
    3. Poor because he has not completely paid for his home.
    4. Poor because he has not provided adequate insurance protection for his dependents.

44. The Better Business Bureau is an agency of
    1. the federal government that works to increase business profits.
    2. the federal government that works to protect consumers.
    3. private business that works to increase business profits.
    4. private business that works to protect consumers.

45. Before deciding to buy a new sweater, the first factor considered by one who uses good buying habits is the
    1. price one can afford to pay.
    2. clothing one already owns.
    3. quality of the material.
    4. type of material.

46. Mr. Able, age 30 and single, is interested in providing himself additional retirement income when he reaches 65. If he were to pay $35 per month, which one of the following policies would provide him the greatest amount of retirement income?
    1. Term to 65.
    2. Life-paid-up at 65.
    3. Endowment at 65.
    4. Annuity at 65.

47. Mr. Johnson is married, age 40, has a good job, and a good insurance program. During the next 25 years, he wants to build a retirement fund that will have a purchasing power equal to or greater than the dollars he invests over the 25-year period. Which one of the following types of investments will most likely provide the retirement fund he desires?
    1. Blue Chip stocks because their market value tends to increase as the economy grows.
    2. Corporate bonds because they provide good interest income and a fixed-dollar return.
    3. Preferred stocks because their dividends will provide a guaranteed income.
    4. Municipal bonds because their interest is not taxable and will provide a higher net income at the present time.

48. Mrs. Wells wants to buy a new washing machine. She has investigated and found that Brand A is "recommended" by Consumers' Research, Inc., while Brand B has the Good Housekeeping Seal. These machines sell for the same price and have the same warranty. Which washing machine, if any, should Mrs. Wells buy? Why?
    1. Either A or B because the Good Housekeeping Seal and the Consumers' Research recommendation are of equal value.
    2. Machine A because the Consumers' Research company tests products more thoroughly than does Good Housekeeping.
    3. Machine B because the Good Housekeeping Seal is a guaranty of the quality of the product.
    4. Neither A or B because the Good Housekeeping Seal and the Consumers' Research recommendation are only advertising practices.

49. Over a 20-year period, does a 5-year term or a whole-life insurance policy have the highest net cost? Why?
    1. Term because there is no cash value.
    2. Term because the premiums increase each 5 years.
    3. Whole life because of the high cash value.
    4. Whole life because the premiums are higher.

50. Which one of these taxes usually takes a larger portion of income from low income groups than from high income groups?
    1. Personal income taxes.
    2. Sales taxes.
    3. Property taxes.
    4. Excise taxes.

Exhibit 4

WORK SHEET FOR DALE-CHALL READABILITY FORMULA[1]

Forkner Test, Form A--Personal Business Achievement Test

1.	Number of words in the sample	4,398
2.	Number of sentences in the sample	302
3.	Number of words not in Dale list	762
4.	Average sentence length (divide 1 by 2)	14.563
5.	Dale score (divide 3 by 1, multiply by 100)	17.326
6.	Multiply average sentence length (4) by .0496	.7223
7.	Multiply Dale score (5) by .1579	2.7358
8.	Constant	3.6365
9.	Formula raw score (Add 6, 7, and 8)	7.0946

Average Corrected Grade Level -- Ninth and Tenth Grade

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[1]Forkner, "Personal-Business Knowledges and Understandings," p. 106.

APPENDIX B

RAW DATA FOR ALL SUBJECTS

TABLE B-1

FORKNER TEST SCORES FOR VOCATIONAL STUDENTS WHO HAD HAD AND WHO HAD NOT HAD THE TENTH-GRADE GENERAL BUSINESS COURSE

Had Had N = 30		Had Not Had N = 30	
25	23	18	19
16	14	17	16
19	21	23	24
20	13	20	15
20	12	18	11
19	17	13	12
16	15	14	12
18	11	18	17
14	25	13	24
9	22	13	22
27	18	14	17
16	19	12	14
13	26	18	26
16	7	17	19
18	15	17	11
Total Scores	524		504
Mean	17.5		16.8
S.D.	4.91		4.10

TABLE B-2

FORKNER TEST SCORES FOR NON-VOCATIONAL STUDENTS WHO HAD HAD AND WHO HAD NOT HAD THE TENTH-GRADE GENERAL BUSINESS COURSE

Had Had N = 30		Had Not Had N = 30	
14	28	13	23
26	23	25	20
22	10	23	16
21	24	16	10
22	25	19	24
17	14	15	20
16	21	18	26
15	21	23	24
21	20	23	28
29	16	13	20
15	34	12	8
17	18	15	18
15	25	22	17
19	25	22	19
22	18	31	20
Total Scores	613		583
Mean	20.43		19.43
S.D.	5.23		5.32

TABLE B-3

FORKNER TEST SCORES FOR FEMALE AND MALE VOCATIONAL STUDENTS

Female N = 31		Male N = 29	
25	18	16	19
16	13	13	26
19	14	16	7
20	18	18	15
20	13	23	12
19	13	14	12
16	14	21	17
18	12	13	24
14	18	12	22
9	17	17	17
27	17	15	14
18	19	11	26
17	16	25	19
23	24	22	11
20	15	18	
11			
Total Scores	533		495
Mean	17.19		17.07
S.D.	4.08		4.98

TABLE B-4

FORKNER TEST SCORES FOR FEMALE AND MALE NON-VOCATIONAL STUDENTS

Female N = 22		Male N = 38		
14	23	17	16	24
26	13	16	34	25
22	12	15	18	14
21	15	21	25	21
22	22	29	25	21
13	22	15	18	20
25	31	17	16	20
23	23	15	10	8
16	20	19	24	18
19		22	20	17
15		28	26	19
18		23	24	20
23		10	28	
Total Scores	438		758	
Mean	19.91		19.95	
S.D.	4.90		5.11	

TABLE B-5

FORKNER TEST SCORES FOR FEMALE VOCATIONAL STUDENTS WHO HAD HAD AND WHO HAD NOT HAD THE TENTH-GRADE GENERAL BUSINESS COURSE

Had Had N = 11	Had Not Had N = 20	
25	18	12
16	17	18
19	23	17
20	20	17
20	18	19
19	13	16
16	14	24
18	18	15
14	13	11
9	13	
27	14	
Total Scores 203	330	
Mean 18.45	16.50	
S.D. 4.93	3.47	

TABLE B-6

FORKNER TEST SCORES FOR MALE VOCATIONAL STUDENTS WHO HAD HAD AND WHO HAD NOT HAD THE TENTH-GRADE GENERAL BUSINESS COURSE

Had Had N = 19		Had Not Had N = 10
16	15	12
13	11	12
16	25	17
18	22	24
23	18	22
14	19	17
21	26	14
13	7	26
12	15	19
17		11
Total Scores	321	174
Mean	16.89	17.40
S.D.	4.94	5.30

TABLE B-7

FORKNER TEST SCORES FOR FEMALE NON-VOCATIONAL STUDENTS WHO HAD HAD AND WHO HAD NOT HAD THE TENTH-GRADE GENERAL BUSINESS COURSE

Had Had N = 5	Had Not Had N = 17		
14	13	15	12
26	25	18	15
22	23	23	22
21	16	23	22
22	19	13	31
	23	20	
Total Scores 105	333		
Mean 21.00	19.59		
S.D. 4.36	5.12		

TABLE B-8

FORKNER TEST SCORES FOR MALE NON-VOCATIONAL STUDENTS WHO HAD HAD AND WHO HAD NOT HAD THE TENTH-GRADE GENERAL BUSINESS COURSE

Had Had N = 25		Had Not Had N = 13
17	24	16
16	25	10
15	14	24
21	21	20
29	21	26
15	20	24
17	16	28
15	34	20
19	18	8
22	25	18
28	25	17
23	18	19
10		20
Total Scores	508	250
Mean	20.32	19.23
S.D.	5.46	5.76

TABLE B-9

FORKNER TEST SCORES FOR VOCATIONAL AND NON-VOCATIONAL STUDENTS

Vocational N = 60		Non-Vocational N = 60	
25	18	14	13
16	17	26	25
19	23	22	23
20	20	21	16
20	18	22	19
19	13	17	15
16	14	16	18
18	18	15	23
14	13	21	23
9	13	29	13
27	14	15	12
16	12	17	15
13	18	15	22
16	17	19	22
18	17	22	31
23	19	28	23
14	16	23	20
21	24	10	16
13	15	24	10
12	11	25	24
17	12	14	20
15	12	21	26
11	17	21	24
25	24	20	28
22	22	16	20
18	17	34	8
19	14	18	18
26	26	25	17
7	19	25	19
15	11	18	20
Total Scores	1028		1196
Mean	17.13		19.93
S.D.	4.50		5.25

TABLE B-10

CALIFORNIA TEST OF MENTAL MATURITY SCORES FOR VOCATIONAL AND NON-VOCATIONAL STUDENTS

Vocational N = 60		Non-Vocational N = 60	
123	91	96	108
105	79	109	102
97	105	106	108
105	117	115	97
98	84	115	104
109	123	89	108
76	102	112	112
111	107	105	123
95	87	100	113
101	107	126	88
104	102	109	107
123	105	110	118
98	97	94	129
103	107	130	113
115	104	118	131
116	115	121	110
90	102	118	87
108	82	122	110
65	79	103	111
114	111	127	124
96	81	106	127
98	119	116	123
101	119	99	111
121	91	113	124
106	107	117	118
106	97	98	124
103	122	122	113
55	92	121	127
110	110	98	104
106	105	73	98
Total Scores	6107		6660
Mean	101.78		111.00
S.D.	13.98		12.02