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**AN ASSESSMENT OF THE ECONOMIC KNOWLEDGE OF SELECTED
MICHIGAN BUSINESS EDUCATION STUDENTS**

Michigan State University

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AN ASSESSMENT OF THE ECONOMIC KNOWLEDGE OF
SELECTED MICHIGAN BUSINESS EDUCATION STUDENTS

By

Annette Jane Ryckman

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Department of Teacher Education

1984

ABSTRACT

AN ASSESSMENT OF THE ECONOMIC KNOWLEDGE OF SELECTED MICHIGAN BUSINESS EDUCATION STUDENTS

By

Annette Jane Ryckman

The problem was to assess the economic knowledge of selected Michigan business education students at the secondary level. The economic literacy status of the students' knowledge was measured by using the Test of Economic Literacy (TEL). Each test item was categorized by a cognitive level and a content category. The population consisted of 1,506 students enrolled in classes taught by Vocational Office Block project teachers. Demographic and related data were also collected.

A letter and response card were mailed on April 12, 1981, requesting the teachers to administer the 40-minute TEL. A second letter and card were mailed on April 20 to those who did not respond. Packets were mailed on April 28. Data from the tests and questionnaires completed between May 7 and June 10, 1981, were entered on the MSU Cyber 10 computing system and analyzed by subroutines of the SPSS. Frequency distributions were used to summarize the responses to all items. ANOVAs and the Scheffé's post hoc

multiple comparison were used to test hypotheses where applicable.

Of the seven economic content categories, students correctly answered the highest percentage of questions in the areas of "The Basic Economic Problem," "Economic Systems," and "Microeconomics." The lowest achievement was in "Concepts for Evaluating Economic Actions and Policies." Of the first four categories, students had the lowest percentage of correct responses in "Macroeconomics." Of all test items, the four with the highest percentage of correct responses by the students ranged from 58.0 to 77.6 percent; the four lowest ranged from 2.7 to 15.0 percent. Of the five cognitive levels, the highest percentage (42.7 percent) of correct responses was at the "Application" level, the lowest (26.0 percent) at the "Evaluation" level. No statistically significant differences ($\alpha = 0.05$) were found either in the content categories or in four of the cognitive levels for students from Class A, B, C, or secondary area vocational education center schools. Class C students scored higher at the "Evaluation" level than did the center students ($p. < 0.0176$).

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CHAPTER 1

INTRODUCTION

In the early 1950s the business education profession made a commitment to develop a more vigorous program to improve and advance economic education. At that time there was a concern for the low level of economic literacy in the United States (Daughtrey, 1982, p. 7). One significant result of that commitment was evidenced in 1959 when the National Business Education Association, Delta Pi Epsilon, and the Business and Office Division of the American Vocational Association unified to organize and sponsor the Policies Commission for Business and Economic Education (PCBEE). The goals of the Commission were to bring about a better understanding of what constitutes business and economic education and to assist those concerned with the total education of young people (PCBEE, 1979, p. 40).

Since 1959 educators have made numerous attempts to refine and achieve the Commission's goals in practice. In 1969 the PCBEE published a policy statement, "The Role of Business Education in Economic Education," which was later included with other statements in the Policies Commission for Business and Economic Education 1959-1979. The statement reported a concern for business education's role in developing an understanding of economics:

Although opportunities to develop economic understanding exist at all grade levels and in several subject matter areas, business education, more than other fields, deals with the very things that economics is about. An economic system is simply an arrangement for satisfying human wants. In the United States, 90 percent of the goods and services people buy to satisfy their wants are products of business. Business provides employment for seven out of eight workers in this country. Business, therefore, plays a significant role in our economy (p. 20).

Another organization, the Joint Council on Economic Education (JCEE), also has promoted the teaching of economic education. The JCEE was founded in 1949 because leaders in business, labor, agriculture, government, and education were concerned about the low level of economic literacy in the United States. Currently, the JCEE is the largest non-governmental education delivery system in the country. For the past twenty-five years the National Business Education Association (NBEA) and Delta Pi Epsilon (DPE) have developed a close working relationship with the Joint Council on Economic Education to increase the economic literacy level of students.

Frankel (1970) of the Joint Council on Economic Education called for more economic education research as it applies to the business education field and for business education curriculum revisions to ensure adequate economics coverage (p. 170). He added that to prepare students for employment in the business world, a curriculum balance must exist between general education and skill learnings.

Frankel continued:

Any company employee should be proficient in the skills of his position, but he cannot be an effective participant in company operations if he fails to understand the economics of the company's operation. His opportunities for advancement, his motivation to utilize his talents most efficiently, his remuneration, and his understanding of corporate decisions would be severely limited without a knowledge of economic analysis (p. 167).

Frankel stated that the integration of economic concepts into the program for the acquisition of skills is an assignment still to be tackled (p. 168).

Recent studies indicate that young people in the United States have some understanding of economics and how to apply that knowledge. Economics is being taught to more students than in previous years, but more needs to be done to prepare economically informed students (Clow, 1982, pp. 36-37).

Statement of the Problem

The major problem of this study was to assess the economic knowledge of selected Michigan business education students at the secondary level. The economic literacy status of the students' knowledge was measured by using the Test of Economic Literacy. Each question in the test was categorized by a content category and cognitive level (Appendices D and E). Demographic and related information were also collected.

The specific research questions addressed in the present study were drawn from two major areas: demographic and related information and descriptive information.

Demographic and Related Information

1. What is the composite profile of the students who were tested for current economic knowledge: sex; age; grade; parents' or guardians' educational background, occupational area, and income level; and classification of secondary school?

2. What is the composite profile of the students who were tested in terms of a previous economics course and/or related courses? Examples of related courses are basic business, marketing, and consumer.

3. Is an economics course offered and required at the schools where the students were tested?

4. To what extent do the teachers express an interest in attending workshops, seminars, or in-service programs to learn more about methods of integrating economic concepts into their curriculum?

Descriptive Information

5. Which of the seven content areas do students understand the most and the least as evidenced by their scores on the Test of Economic Literacy (TEL)? The seven content categories are:

- A. The Basic Economic Problem
- B. Economic Systems
- C. Microeconomics: Resource Allocation and Income Distribution
- D. Macroeconomics: Economic Stability and Growth
- E. The World Economy

F. Economic Institutions

G. Concepts for Evaluating Economic Actions and Policies

6. In which cognitive levels are students the strongest and weakest as evidenced by their achievement on questions from the Test of Economic Literacy (TEL) which are designed to measure those levels? The five cognitive levels are:

I. Knowledge

II. Comprehension

III. Application

IV. Analysis

V. Evaluation

7. Is the average percentage of correct responses within content categories and for cognitive levels significantly different across the four classifications of schools represented in the present study?

An attempt was made to identify and report patterns from the mass of "raw data" which emerged through interpretation of data. The students' scores were described in terms of frequencies and percentages.

Purpose of the Study

The primary purpose in undertaking this study was to provide business education teachers, educators, and state department personnel with information about basic understanding of economic concepts and cognitive levels of a selected group of business education students. The

instrument used as a guide was the Test of Economic Literacy (TEL), which was developed by the Joint Council on Economic Education. Some additional purposes were:

1. To identify weak and strong economic concept categories among the students tested;
2. To provide an assessment for business education teachers as a rationale for considering a greater integration of economic concepts into the business education curriculum;
3. To provide planners and implementers with information for use in the development and dissemination of economic instructional material.

Background of the Study

Business education as a discipline has encouraged the integration of economic concepts into its curriculum. Some examples of courses within the basic business, marketing, and consumer areas in which attempts at integration have been made are general/basic business, consumer economics, distributive education, and vocational business/office education. In each area a somewhat different approach is used when integrating economics. These areas are briefly described below.

Basic Business

General Business. A general business course introduces students to the business world in which they live. The course includes the role and purpose of business in our

economic system. Economic concepts are integrated to provide a basic understanding of economics essential to every citizen in our complicated society (Hopkins and Price, 1975, p. 1).

Advanced Basic Business. An advanced basic business course develops awareness and understanding in the areas of societal and personal economics. For example, students learn why an economic system is a necessity of society and how it functions. Also, students develop concepts which can help make them skillful buyers and users of goods and services (Hopkins and Price, 1975, p. 7).

Consumer

Consumer Economics. Consumer economics provides students with economic information needed by the consumer. The Michigan Department of Education (1981) developed and published the Consumer Economics Education Guidelines. The curriculum guide recommends materials which may be used for teaching consumer economics as a separate course or as part of other courses (p. 1). One goal is to have students relate economic principles to the functions of the marketplace (p. 4). The guidelines emphasize that businesses and consumers have major misconceptions about each other, and both need to know the basic principles of the U.S. economic system as well as be aware of the interrelated roles of consumers, business, and government in influencing the economic system (p. 2). Dr. John Porter, State Superintendent of Public Instruction at the time he appointed the

guidelines committee, recognized "that educating citizens will ultimately help create an economic system that better services the needs of both producers and consumers" (p. 2).

Marketing

Courses in this area are often referred to as distributive education. Units include economic and marketing concepts and cover such topics as the national economy, economic fundamentals, products and prices, marketing goods and services, and organized labor (Interstate Distributive Education Curriculum Consortium, 1980, p. 14).

Vocational Business/Office Education

Vocational education courses, by their nature, blend understanding and skills which include economic concepts. The vocational business/office programs are selected by secondary level students interested in enhancing their employability. They may or may not have previously taken such courses as general/basic business, consumer economics, or economics. The Michigan State Board of Education (1984) in its Reference Guide for Vocational Education (1984) explains that vocational business education programs prepare students for gainful employment in business occupations that do not necessarily require advanced training or a college/university degree (p. 1). The guide details the programs and goals:

Vocational Business Education consists of courses and practical experiences organized into programs of instruction to provide opportunities

for students to prepare for or advance in selected business/office occupations (p. 1).

The major goals for vocational business education are:

1. To develop knowledge, attitudes, and skills in preparation for gainful and meaningful occupations, including new and emerging occupations.
2. To encourage advancement toward highly skilled and technical occupations and careers.
3. To provide for students the best and most meaningful experiences in learning and acquiring jobs in business and office occupations (p. 1).

Need for the Study

Several studies have sought to determine the economic knowledge of students. For example, the Test of Economic Literacy was administered in 1977 using a nationwide sample of eleventh and twelfth grade students. However, few studies have been done in the business education area, particularly regarding students in vocational business education programs.

Courses which integrate understanding of economics into the curriculum, such as general/basic business or consumer economics, either are not available or may not be offered at an appropriate time for students preparing for a vocational business education career path. These students follow different schedules because of personal choices and time constraints. In addition, courses entitled "Economics" either are not offered or, if offered, are not taken by a majority of the vocational business education students.

Most typical high schools, however, do offer economic principles in social studies classes taken by all students.

Busch (1982) expressed concern that students enrolled in work-study or block-time programs might not be able to schedule an advanced basic business course during their final year. He added that vocational students need to be just as efficient as any other students in handling economic and personal business problems (p. 112).

Blockus (1983) stated: "The need for teaching economic literacy is even greater today than at any time in our nation's history" (p. 24). Daughtrey (1982) stated: "The prevailing economic conditions indicate the need for more emphasis on economic concepts" (p. 11). However, Brown (1982) pointed out that too much emphasis on economic concepts at lower learning levels leads to rote learning and a lack of interest by the students (p. 94).

Clow (1983) emphasized that there are two approaches to developing an understanding of basic economic and measurement concepts. One is the practical "how to" and the second is "analytical and conceptual." Clow cited a study which "shows that more needs to be done if we are to prepare economically informed students both to build understanding of economics and the application of that knowledge" (p. 36).

The Michigan vocationally reimbursed business education teachers prepare secondary students who have chosen and are pursuing a particular career goal. It is the responsibility of these teachers to provide instruction in a

capstone type of course which leads to the students' successful performance in their selected vocation in the world of work. Scriven (1975) stated:

The responsibility to encourage pre-service and inservice teachers to better understand political and socio-economic issues is great because many secondary students in business classes will end their formal education with the twelfth grade. Stress should be placed on the importance of teacher recognition of their responsibilities and obligations to challenge and develop an informed citizenry (p. 35).

Daughtrey (1970) stated the following about vocational education subjects:

There are opportunities in most of these subjects to integrate economic topics into the subject matter, especially in showing relationships and reinforcing the learning from other courses (p. 101).

She added:

Including economic understandings within newer curricular designs, such as block programming, simulation, and task clusters, is vital to the preparation of the students for office occupations in the future (p. 101).

To summarize, it appears that more emphasis is needed on the teaching of economic concepts so that students can be more effective in handling economic and personal business problems. Appropriate learning levels need to be emphasized to maintain the students' interest. An understanding of economics is vital to office occupations students, particularly those who end their formal education with the twelfth grade.

Several articles have stated that the business education curriculum needs to change and grow with the

challenges of technological evolution. The importance of economic literacy is being reemphasized as well as the skills for technological literacy, such as word processing.

The Test of Economic Literacy (TEL), published by the Joint Council on Economic Education, is a tool for testing economic knowledge. This instrument has been used on a nationwide basis. According to Tony Suglia and Joyce Murphy of the Joint Council on Economic Education, 150,000 original copies of the test have been sold. The TEL is grouped into content categories and cognitive learning levels. Because of the concern for the economic literacy of future office workers and the concern for the cognitive learning levels at which economic concepts are taught, assessing the economic knowledge of secondary business education students with the TEL seemed most appropriate to this writer.

It was anticipated that the findings of this study will provide useful data to business education teachers, to proposal writers for instructional development, and to educators teaching pre-vocational and vocational level methods courses.

Assumptions

Certain assumptions are made which should be recognized.

1. The respondents answered the questionnaires and tests as accurately as possible.

2. The tests were administered and collected within the appropriate time limits.

3. The teachers who administered the tests were objective and nonbiased while distributing the tests.

4. The students tested came from a typical mixture of secondary student backgrounds prior to entering the current class.

5. The students had taken a required social studies course which traditionally includes economic concepts.

Delimitations

This study has certain delimitations which should be recognized.

1. Only the economic concepts listed in this study were considered as basic. Other research may list concepts with varying vocabulary or order. The concepts that were part of this study have been used in more than 200 Developmental Economic Education Program (DEEP) cooperating schools throughout the United States.

2. The data for this research were derived from the completed Test of Economic Literacy instrument answer sheets returned and the completed questionnaires returned.

3. How, when, and where to teach the economic concepts were issues not addressed by this study.

4. No attempt was made to determine the economic concept areas or levels of understanding desirable for students. Only the extent of their understanding of the

concept areas and the cognitive levels used in this study were identified.

5. The evaluation of teaching effectiveness was not of concern here.

6. No effort was made to determine which economic concepts need to be taught in the business education curriculum. Only the assesment of the economic background of the students was attempted.

Limitations

1. This study included only students enrolled in classes taught by Vocational Office Block project teachers.

2. The time of day for the testing was not controlled.

3. Only one test was administered to obtain an appropriate measure of the students' knowledge.

4. The study was restricted to students tested. Caution must be exercised if generalizations are made beyond that group.

5. The questionnaire completed by the respondents was the means of collecting personal information. The data may be less accurate than if obtained through a personal interview.

6. This researcher did not administer the tests because of the number of students, geographic locations, and time frame.

Definition of Terms

Certain terms used in this study need to be defined.

1. Cognitive levels - The five-level schema of cognitive taxonomy is a variant of Benjamin S. Bloom's taxonomy. The five levels are knowledge, comprehension, application, analysis, and evaluation (Soper, 1979, p. 4).

2. Content categories - The seven content categories are: the basic economic problem; economic systems; macroeconomics: resource allocation and income distribution; microeconomics: economic stability and growth; the world economy; economic institutions; and concepts for evaluating economic actions and policies (Soper, 1979, p. 3).

3. Economic education - A knowledge of economics is part of the total educational program provided to help all students prepare to become economically informed. When integrating economic education into the vocational business education program, emphasis is placed on building an understanding of economic concepts and applying the knowledge in the workplace.

4. Economic understanding - The essence of economic understanding lies in being able to make sense out of the array of economic issues confronting our society. Various elements of economic understanding must be combined and blended so as to provide a working knowledge of economics (Hansen, et al., 1977, p. 4).

5. Policies Commission for Business and Economic Education - The PCBEE is an ongoing organized group which

hopes to bring about a better understanding of business and assist those concerned with the total education of young people (PCBEE, 1979, p. 40).

6. Vocational business education instruction - This type of instruction seeks to develop understandings and competencies needed for students to become useful as well as specialized in occupational skills.

7. Vocational business education program teacher - Such a teacher is part of an organized program of instruction which has authorization to receive funding (reimbursement) from the State of Michigan under PL 94-482. The teacher holds an annual, temporary, or regular vocational authorization and primarily instructs students enrolled in classes which prepare them for a specific occupation.

8. Vocational Office Block (VOB) In-service Program - Since 1968 this program has been coordinated through the College of Education and Lifelong Education Programs, Michigan State University. In 1981, at the time the testing was conducted, this project attracted 98 business/office education teachers from 76 lower Michigan schools. The VOB project teachers attend four one-day in-service noncredit sessions at Michigan State University each school year. At these meetings, participants have the opportunity to increase their knowledge, skills, and/or attitudes to become more effective teachers of business education.

9. Vocational Office Block teacher - Such a teacher holds a certificate for vocational authorization

under the Office Education (OE) code 14.0000 area. In May, 1983, this program code number was changed by the Michigan State Board of Education to a Classification of Instruction Programs (CIP) 07 designation. The teacher typically, but not exclusively, teaches vocational business education subjects.

10. Vocational-Technical Education Service (V-TES) - This is a service area within the Michigan Department of Education charged with administering vocational-technical education in the state.

Organization of the Study

This study is organized into five chapters.

Chapter 1 provides an introduction and states the study problem.

Chapter 2 reviews the literature pertinent to the study.

Chapter 3 describes the research design, including a description of the study and research procedures used.

Chapter 4 presents and analyzes the data.

Chapter 5 reports the major conclusions, summarizes the findings, and recommends areas for further study.

CHAPTER 2

REVIEW OF THE LITERATURE

Presented in this chapter is a review of literature pertinent to this study. The materials were obtained by an ERIC and a manual search.

For most of this century, authorities in education have supported the need for economic education. In recent years, members of leading organizations have encouraged school districts to integrate economic concepts into their kindergarten through twelfth grade curricula in a systematized and progressive pattern. For years, business education supporters have cooperated in emphasizing economic education in business education, particularly in basic business subjects. Efforts to teach economic competencies should enable individuals to increase their economic literacy.

The background and readings cited in this chapter establish that the intent to integrate economic concepts into the business education curriculum is not a new idea, and that the need has been established for students to have a better economic understanding. Although the literature is limited which specifically pertains to integrating economic concepts into the vocational business education programs, it

is sufficient when coupled with information which supports economics in the general business education programs.

Broadening the Scope of Business
Education: Selected Readings

The Literature through the Early 1960s

In the early 1900s, business education was commonly referred to as commercial education, and the majority of students were male. Although changes have occurred, among them a shift to a predominantly female population, a continuing theme of business educators has been to emphasize the need to integrate economic concepts into the high school curriculum.

For example, Sheppard (1913) states: "There remains for consideration the subject whose rare value for commercial training has been tardily realized--economics Perhaps no other subject is comparable to economics in the inspiration it gives the student to go on with his studies after the secondary school days are over" (p. 209).

Sheppard also states that proper ideals in secondary commercial instruction and education involve "vastly more than familiarity with a few such subjects as arithmetic, book-keeping, stenography, and typewriting" (p. 209).

More than thirty years ago, Leaderer (1950) recognized a change in the demand for business education:

The original impetus for the provision of an effective program of instruction in the business subjects came from demands for adequately trained office workers; more recently the impetus has come from the demand for a

citizenry equipped to meet the many and diversified economic problems of our American Society (p. 12).

Liles (1950) noted that some people believe basic business education "should be restricted to include those knowledges, skills, and economic understandings needed by all students regardless of their educational objective," while others maintain that "basic business should apply only to those knowledges and understandings necessary for the successful application of business skill in office situations" (p. 9).

Tonne (1951) criticized those who support the goal of teaching only for first-job basic skills:

"Teach nothing unless it has immediate job value" seems to express in one phrase the current cult in training for business. . . . This attitude of so-called Progressive education has consequences that may be serious. First, it results in a tendency to teach nothing except the basic skill needed to secure the first job. Moreover, this isolation produces measurement techniques based upon wholly unbusinesslike words-a-minute standard (p. 243).

Thus, at least three decades ago the emphasis began of teaching more than basic skills in the office occupations. Discussions evolved to include economic understanding in the training of individuals.

Approximately twenty years ago, Swanson (1960) reiterated Sheppard's previous call to widen the definition of business education:

Just as education in the broad sense is no longer adequately described in terms of the three R's so business education is no longer properly defined in terms of the simple triumvirate of bookkeeping, shorthand, and typewriting (p. 51).

Sneden (1960) also stressed general education for preparing business education students:

If emphasis is placed upon terminal aspects, two unfortunate results occur: (1) Able young women, and some able young men, are influenced to take employment instead of continuing their education. (2) The image of business education becomes more firmly fixed as vocational and terminal in the eyes of the public and other branches of education De-emphasize the terminal and emphasize the preparatory character of secondary business education (p. 3).

In a personal interview with Gratz (1961), T. James Crawford remarked: "We merely describe business; we don't teach understandings. Actually, our courses do not back up our objectives" (p. 31).

From his study of fundamental issues in business education Gratz noted:

Business education teachers of general business subjects should strive to accomplish the objectives of developing understanding and appreciation of our business economic system, provide a background for the study of more advanced courses in business, and provide students with some comprehension of career opportunities in business (p. 31).

Gilliam (1961) states:

For the most part, business educators have limited themselves pretty much to a rather narrowly defined area within the subdivision of information handling. Traditionally we have stuck very closely to typewriting, shorthand, and bookkeeping. . . . We have done almost nothing in the area of economic education (p. 152).

Gilliam reiterates:

Business education should be doing more than teaching typewriting, shorthand, and bookkeeping. We are prepared to make a tremendous contribution to society; but until we make the necessary adjustments, we must accept a certain amount of justifiable criticism (p. 152).

During the 1950s and early 1960s the focus continued to shift from narrow, terminal training for employment toward preparing individuals for a career by developing their understanding of business and society.

In summarizing some of the authors, Lederer recognized the need for Americans to be equipped to meet economic problems. Tonne criticized limiting the teaching of business subjects only to securing the first job. Also, Sneden emphasized the preparation of the business education individual for more than terminal skills. Crawford called for the teaching of economic understanding, and Gratz stressed the importance of developing each student's understanding and appreciation of economics and the economic system from the kindergarten through twelfth grade.

The Literature since the Late 1960s

There has been a national thrust in the last decade of so to integrate economic education into the kindergarten through twelfth grade curriculum. One means is through Developmental Economic Education Programs (DEEP). Among others, the Policies Commission for Business and Economic Education (PCBEE) supports the inclusion of economic concepts in the business education curriculum. There appears to be an interest on the part of Michigan State Department of Education staff, educators, representatives of the populous, and industry for integrating economic education into school programs. This interest extends to preparing teachers through pre-service and in-service training to

integrate economic concepts at the elementary and secondary levels, including business education.

Daughtrey (1970), who stresses the importance of a person's ability to make effective economic decisions, states:

The aggregate of individual economic activity, whether it be a consumer decision, a worker decision, or a voter decision, is the guiding force of our American enterprise system (p. 97).

As part of the secondary program, she emphasized that business education "has a major role to play in developing economic understanding." Daughtrey further states:

Assisting the individual in developing the ability to make wise economic decisions in both the personal and societal areas is the purpose of economic education. This is too large an order to be limited to one level of the school, or indeed, to the school alone. Economic education ideally is a continuous process beginning in the home in the early years of the child; included in the total school program from grade one through high school; and pursued through college, vocations, or self-directed efforts throughout a person's life. Because business education addresses itself to problems that are economic, it is committed by concept to the development of economic understanding by students in the secondary schools (p. 97).

Daughtrey noted that the first course in general business is usually offered to all students at grade nine or ten. The emphasis in the general business course is on:

Personal economic abilities and understandings. The important difference between former practices in general business and today's teaching centers around the word emphasis. In the past personal economic skills were sought as end results. Today, while these skills and abilities still form the bulk of the content, they also serve as launching pads to an understanding of broader economic concepts (p. 99).

As for economics in vocational business subjects, Daughtrey writes:

One might interpret the training for one's vocation as the most important type of economic education. However, vocational business education is not included in the commonly accepted definition of economic education.

Nevertheless, there are opportunities in most of these subjects to integrate economic topics into the subject matter, especially in showing relationships and reinforcing the learning from other courses (p. 101).

Millington (1969) suggested one reason economic concepts are sometimes not integrated in business education courses.

Business teachers often indicate that lack of sufficient planning time is one of the most pressing reasons why they have not made a determined effort to integrate economic concepts into their respective courses (p. 76).

He stressed the important role of business teachers:

No educator should be guilty of isolating himself and his instruction from the real world, and this admonition applies especially to business teachers in view of their special role in preparing students for employment (p. 77).

Millington also believed that, with support from the Joint Council on Economic Education (JCEE) and its centers, it is time to emphasize economics in the high school:

The economic education movement continues to increase in depth and tempo through a series of national projects, and business teacher educators have never been in a more favorable position to implement their policy statements on the role of economics in the high school business curriculum (p. 78).

Duff (1971), when discussing economic concepts in the business curriculum, states:

Because the major objectives of the business curriculum do not always include the examination of social problems, the opportunities for incorporating Rothenberg's basic lessons (relating the study of economics to the problems of modern society) are not as apparent as they are in the social studies curriculum. Nevertheless, the goals of developing personal economic competency and an understanding of business are not inconsistent with the objectives of teaching students about our economy as a whole and about the underlying economic principles and concepts.

Rothenberg's basic lessons can be used to analyze decisions on entering the clerical, secretarial or distributive areas of business. The student who enters the business curriculum to prepare for employment has already made a very important economic decision. He should be aware of the costs and opportunities, the trade-offs and the possible payoffs related to his decision (pp. 8-9).

For decades business education leaders have consistently stressed the value of teaching economics while training office workers of the future. These leaders have emphasized that more courses need to be offered than shorthand, typewriting, and bookkeeping in the business education curriculum. Integrating and reinforcing economic concepts helps students prepare for understanding economic problems and appreciating their business economic system. Office workers need an adequate background before leaving the secondary school and entering the work force permanently.

As mentioned previously, Daughtrey (1970) believes that economic understandings are vital for students studying for the office occupations. She also believes that economic topics can be integrated and reinforced from course to course. Today, Daughtrey (1982) states: "The prevailing economic conditions indicate the need for more emphasis on economic concepts" (p. 11).

The Need for Economic Education:
Selected Readings

General Education

Educators in general are calling for a better economic background for citizens. A problem which is addressed by Abrell (1981), among others, is that "business and education are increasingly receiving more and more blame for the country's ills" (p. 320). He notes that in a national opinion poll both high school and college students expressed regret that they had not received "a better background about their economic system" (p. 321). He refers to the economic illiteracy of our society and cites several examples. One indication is the following opinion held by many Americans.

The misconception that business is out for profit only and is working overtime to "do the consumer in" is deeply ingrained in the American psyche. This near fixation with "business-as-bamboozler" is, in part, the result of an educational system which fails to stress economic literacy among its young. However well-intentioned they may be, our schools must share the blame for much of the anti-business sentiment which now prevails in our country. Only a small number of the nation's high school students graduate with anything resembling a full course in economics and, according to Marvin Feldman, President of the Fashion Institute of Technology his own research surveys indicate that only fourteen percent of American youth feel that they are a part of the free enterprise system (p. 321)!

Abrell believes that

free enterprise education should be taught at all levels in all of the schools of our nation. The program should begin early, be sequential, and remain continuous. A single, one-shot course at any one particular level will not suffice to bring about economic literacy on the part of the masses. The ideal program would be multidisciplinary and integrated throughout the curriculum, leading to a rather intensive course in the senior year of high school. Business, literature, math, social studies, and nearly all subjects lend themselves

beautifully to the integration of free enterprise with their special domain of knowledge (p. 322).

Business Education

This general concern for economic literacy has been keenly felt by many business educators. Sheppard in the early 1900s and Swanson and Gilliam in the 1960s stressed the need for economics in the business education curriculum. Today, Brown (1981) emphasizes the same view:

If we were to analyze carefully what happens to us in our daily lives, we might find that economic happenings--the occurrences of contact with our economic world--comprise a large share of our experiences. Yet our business curriculum in many ways does not reflect that share (p. 161).

Brown believes economic understanding is essential:

The basic business/economic education area is one with which all business educators should identify. The courses provide a foundation for the education for business that comprises the other basic component of the business curriculum. Basic business courses are education about business, an identification of the role of individuals as consumers, producers, entrepreneurs, and citizens in an economic world. The first step toward functioning in that world more effectively is an understanding of how the economic system operates. Basic business courses provide avenues for that understanding (p. 161).

Garman (1981) criticizes educators for not making more progress in integrating economics into their courses:

Keep on "typing and transcribing," business educators, and you will maintain that old image. As inaccurate as the image may be it seems that the profession of business education insists upon a self-fulfilling prophecy of teaching just typewriting and shorthand. That is the image you have had in the past, you still have, and probably will have in the future.

You had a chance to change your image in the 1950s by picking up on economic education and incorporating it into the business education curricula. Some did. For the profession as a whole, business education has made progress in this area even though it is limited. The

efforts of the Joint Council on Economic Education, many universities and colleges as well as many educators across the country are helping to implement economic education in elementary and secondary schools, which, of course, projects a broader perception of what the business educator really does.

However the "consumer education ship" came through in the 1960s and it seems with few exceptions that the profession of business education not only missed the boat but overslept while the ship was slowly leaving port. By an overwhelming majority consumer education courses in the public schools are taught by home economics teachers, not business educators (p. 170).

Dlabay (1982) is also critical:

Business educators frequently view their task as one limited to typing, shorthand, retailing, and accounting competencies. While these abilities are essential for business and career success, every individual must also understand the economic setting in which employment occurs (p. 37).

He emphasizes in-service training:

In-service time must be scheduled to coordinate potential overlapping content in various basic business subjects; to integrate economic, consumer, and career concepts into existing business courses; and to update the content and methods essential for a successful program Basic business education requires well-prepared teachers if secondary school students are to receive adequate economic, consumer, and career training (p. 38).

Dlabay adds: "Basic business education, combined with vocational training, is necessary for a comprehensive business curriculum" (p. 38). He perceives there exists a vital need to integrate basic business concepts into typing, shorthand, or accounting (p. 38) and believes the "efforts of everyone involved in business education are required to create and implement programs which best serve the needs of students with regard to economic, consumer, and career education" (p. 38).

In the article by Garman (1981) cited earlier, he states about consumer education (which typically includes economic concepts):

Home economics is not just "cooking and sewing," just like business education is not just "typing and shorthand." Both professions deserve the need to be very heavily involved in the teaching of consumer education because the purposes and goals of both fields of study emphasize the importance of teaching young people to become more informed about their roles and responsibilities as consumers (p. 171).

Garman strongly favors adequate teacher training:

Regarding pre-service education, there is no substitute for putting into the state certification requirements for business education teachers the provision that they must have a specific college-level course or courses in consumer education. For the many teachers who have had no special training in consumer education, yet are presently in the classroom, much needed in-service education has to occur. Without an informed and enthusiastic business education teacher how can we expect a local school district to permit that teacher to lead a consumer education effort (p. 171)?

Brower (1982), in response to questions he asked business educators, finds that business teacher education is overwhelmingly the major concern. "Especially noted is the lack of preparation of educators to teach the non-skill subjects" (p. 215). Brower notes the respondents also commented about the "narrowness of many high school curriculums" (p. 217).

Stocker (1981) stresses the need for change because of new technology and computers:

Business education can no longer afford to be only a typewriting, shorthand, and bookkeeping/accounting program, particularly since these subjects as we presently teach them may not exist in the not too distant future. Business educators

must pay attention to the signs which are already here.

Business education has long had the objective of preparing people to work in the office. That objective should not change. What needs to change is how that objective is accomplished (p. 26).

Dorty (1981) also points out the need to keep pace with change:

Word processing managers, while still associated too often with the secretarial backgrounds out of which many have come, are managers in the true sense of the word.

Business teachers will be remiss in their responsibilities if they do not begin to address the specific needs of these people (p. 7).

In addition to what has been written about business education teachers and teaching itself, numerous authors have focused on the student and the problem of economic literacy. Some of this literature is discussed below.

Brickel and Scott (1976) comment on the long-range value of helping high school students increase their knowledge of economics:

General education research indicates that attitudes tend to change as knowledge increases. For example, attitudes towards a field of study usually change as students learn more about it. Or, to take another example, students develop more sophisticated insights into problems as their knowledge increases with the result that their opinions about solutions shift. Thus, high school students who learn economics will tend to develop views about economic policies even if no policies are advocated in their course (pp. 17-18).

Walstad and Soper (1982) discuss a "model of economic learning in the high schools which incorporated student outputs in both the cognitive and affective domains" (p. 52). The data "were collected by the Purdue University Measurement and Research Center for the JCEE as part of a comprehensive evaluation of JCEE programs," which included

"the cognitive TEL instrument to evaluate the impact of DEEP." Among other findings Walstad and Soper report the following:

Whether a student has been exposed to economics instruction (ECON) in prior grades also has important effects on student cognitive and affective evaluations. As expected, students with ECON show more knowledge by 3.54 points on the TEL . . . than non-ECON students, all other things being equal (p. 51).

Byrnside, Executive Director of the National Business Education Association, and Lee, President of the Business and Office Education Division, American Vocational Association, (1980) state:

The field of business education deals with instruction and programs for youth and adults in the areas of office education, economic education, and personal-use business skills. An estimated 100,000 persons are employed in the business education field serving millions of students annually. The skills, knowledges, and competencies that students gain in business education classes serve them in their own personal economic dealings, as a base for employment in America's businesses and industry, and as a foundation for advanced education.

The business education field, besides teaching identifiable vocational skills such as typing, stenography, accounting, word processing, cashiering, data entry, filing, reception duties, and similar skills, makes a major contribution toward the development of competency in the basic skills: reading, writing, and computation. Further, dozens of critically important parallel topics are fused into these instructional programs: human relations, grooming, the work ethic, free enterprise, economic principles, and so forth (p. 1).

Calhoun (1981) states that business education has a twofold emphasis at the secondary school level:

(1) academic subject matter intended to develop broad business-economic understandings needed by all responsible citizens along with competencies for effective management of one's personal business affairs and (2) vocational knowledges and skills designed to prepare one for initial employment in a business career (pp. 28-29).

Bronner (1981) states:

We have become, for the most part, a nation of flabby business and economic illiterates--"econoliterates," if you will. And, because of this functional illiteracy, our students graduate with little business and economic muscle tone (p. 14).

Bronner believes business education must share the blame:

Our discipline--business education--has two primary objectives: teaching for business and teaching about business. After more than 150 years of preparing students to enter the business world--and doing a fairly adequate job of that--the second objective has fallen into obscurity and neglect. Our graduates leave our secondary schools knowing so little of our business and economic system as to be virtually defenseless in dealing with the realities of living in and coping with the business world (p. 14).

He points to one cause:

Yet there may be valid reasons for the demise of basic business and economic understandings. Increasing academic requirements allow students fewer program electives, thus encouraging them to take only single-period, non-sequenced, job-entry training courses such as short-hand and typewriting (keyboarding), if they take any business courses at all (p. 14).

Bronner recommends structural changes:

If no course in basic business-economics exists within your program, consider the development and implementation of modules of "survival skills" in business/economics--a four- to six-week series of self-contained topics that directly affect and involve students (p. 14).

Hansen (1977) states:

"Taking a rational, unemotional approach to these issues, having available a framework for understanding the economic system, knowing the basic economic concepts, and being able to utilize these several elements of economic understanding in addressing a variety of specific questions (p. 2).

D'Onofrio (1981) states a systematic knowledge of how the economy functions is needed:

Leaders in business education attest that the goals of business education are to teach citizens to be economically literate and informed, to produce intelligent consumers, and to produce skilled workers for the business world. Thus, not only does business education espouse as one of its goals the need to prepare individuals to be economically literate and informed, but one can say that the underpinning of all three goals of business education is economic education. (p. 15).

She argues for better instructional materials:

Economists, economic educators, and teachers concur on the importance of individuals acquiring a knowledge of basic economic concepts and being able to apply their knowledge of economic issues rather than being given a diet of factual information. Teaching materials designed to encourage individuals to apply what is being learned will illustrate the different economic concepts, provide opportunities for analysis, and require evaluation (pp. 15, 17).

D'Onofrio again states:

Since business education programs encompass a wide variety of courses, it becomes imperative to integrate economic concepts within existing courses and thus throughout the business education program. In so doing, business educators will be meeting the goal of preparing all individuals they work with to be economically literate (p. 15).

Zancanella and Church (1981) call for eight positive steps when offering courses. Two of these are "revising programs to offer business courses" and "integrating business, economic, and entrepreneurship principles into all existing classes." (pp. 3-6). Zancanella and Church agree with the view expressed by many others: "Surely, though, we are more than machines teachers, typing and shorthand teachers" (p. 6).

Empirical Research About
Students and Teachers

Numerous research projects have attempted to quantify the abilities and attitudes of both teachers and students in terms of economic education. Several of these are discussed below.

The Test of Economic Literacy was used on high school seniors by Haynes (1981) as one of three instruments to gather data to analyze the knowledge and attitudinal consequences of a one-semester course in high school economics. The instruments were administered to randomly selected seniors in Huntsville, Alabama. The results support the notion that an economics background makes a difference:

In general, students who had completed a one-semester course in high school economics scored significantly higher on the TEL than did students who had not taken economics. The TEL measures students understanding of basic economic concepts (p. 2767-A).

Haynes's data also reveal information about students who score well:

Students who scored high on the economic achievement test had more conservative opinions toward economic issues than those students who received low scores on the TEL. Sex was the only personal characteristic that appeared to affect economic attitudes. In both groups, male students had significantly higher scores on the SOQ (Social Opinion Questionnaire), demonstrating that, in general, male students had more conservative opinions toward economic issues as measured by the SOQ than did female students (p. 2767-A).

Speers (1982) examined teachers' attitudes toward in-service programs based on level of involvement in planning a consumer economic education in-service program. Two workshops were organized with fifty-five participants each.

The project was coordinated by the Michigan Consumer Education Center at Eastern Michigan University.

No significant differences were found in attitudes between the control and experimental groups toward teacher involvement in in-service planning. The study did not serve as a clear predictor of positive attitudes toward the concepts tested. Speers stated that the finding was contrary to previous research (p. 3974-A).

A study by Peters (1980) measured the economic understanding of 261 undergraduate seniors in secondary education teacher preparation in selected Florida universities during the fall quarter of 1978 (p. 641-A). Data were collected through Stanley's Test of Consumer Competencies, Form A. The study suggests that

differences in sex and employment history are not related to scores on a test of consumer knowledge, but differences in grade point average, age, and enrollment in marketing and economics courses and program participation are related to scores on the test (p. 641-A).

Houghton (1980) studied perceptions of the funded vocational clerk-stenography programs in the Southwestern Ohio public secondary schools. Data were obtained from senior-level vocational clerk-stenography teachers, employed 1978 graduates, employers of the graduates, and vocational business office education supervisors. One of Houghton's supported hypotheses was:

Teachers, graduates, employers and supervisors will perceive the adequacy of student preparation in the area of business understandings as being less adequate than in the area of basic skills and personal traits (p. 73-A).

The two-page questionnaire results reveal that the participants had

dissimilar perceptions in all eight business understandings (understanding of: business and office ethics, business terminology, business trends, our free enterprise system, company organizations, cost control in the office, the role of employee supervision, and the importance of office safety) (p. 73-A).

Kesten's (1980) study included 152 student teachers from 27 of the 303 National Association for Business Teacher Education institutions. It attempted to determine "the relationship that exists between business education student teachers' ability to analyze economic problems and propose possible solutions when the problems are presented in different contexts" (p. 1358-A). Questions for the Kesten study were obtained from the Test of Understanding in Personal Economics (p. 1358-A). Two of the conclusions drawn by the researcher are:

(1) The business education student teachers involved in this study were able to propose correct solutions to economic problems posed in a personal use context with a higher degree of proficiency than a norming sample of grade 12 business education students.

(2) The business education student teachers involved in this study were not able to propose correct solutions to economic problems posed in a collegiate context with as high a degree of proficiency as a norming population of university students (p. 1358-A).

Jackstadt (1981) examined the relationship between subjects' economic knowledge and their attitudes toward the U.S. economic system and business and labor unions. The sample population was 1,950 Hawaiian students in grades ten

through twelve from 19 Hawaii public schools in the spring of 1979. Two of the findings are:

(1) Students attitudes toward the American economic system, business, and unions are affected positively by the amount of economic knowledge they possess, and

(2) economic learning predicts positive changes in students' attitudes toward the American economic system, business, and labor unions (p. 650-A).

Economic knowledge and learning were measured by students' scores on the Test of Economic Literacy and attitudes were measured by scales developed by the researcher. Jackstadt states: "It does appear that knowledge of economics enhances high school students' appreciation of the American economic system and certain of the institutions within that system" (p. 650-A).

Applying Economic Understanding in the Workplace

A number of authors have been concerned about the specific problem of students being able to apply their economic understanding in the workplace.

Fersh (1970) believes it is imperative for business education students to receive an economic education before permanently entering the workplace.

Since the standard of living of a society depends in large part on the total goods and services available (Gross National Product), the performance of individuals in their place of work is of great significance. Through economic understanding, they can equip themselves to make the best use of the various factors of production available and entrusted to them. Individually and collectively, they can apply economics principles and tools of analysis to evaluate and increase their productivity. The relationships between employers and

employees and among all employees can be conducted in ways that are conducive to optimum output, shared responsibilities, and fulfillment for all. As economic enterprises and the individual functioning as part of them exemplify such understanding and behavior, it will be reflected in an economy more capable of meeting the needs and wants of all its people (p. 92).

Frankel (1970) reiterates that one goal of business education is "preparing a student to qualify for employment in the business world." He continues: "This area involves the development of office, sales, bookkeeping, and elementary accounting skills" (p. 167). Frankel explains why it is important to integrate economic concepts into the business education program:

Any company employee should be proficient in the skills of his position, but he cannot be an effective participant in company operations if he fails to understand the economics of the company's operation. His opportunities for advancement, his motivation to utilize his talents most efficiently, his remuneration, and his understanding of corporate decisions would be severely limited without a knowledge of economic analysis (p. 167).

Olson (1972) states:

Business educators, more than any other group of teachers, have reasons to be vitally concerned about the economic literacy of their students. If the young business employee is to fill his niche properly in a business office or store, he must know something more than how to type a letter, record a transaction, operate an office machine, or wait on a customer. He must know something about the business organization of which he is a part, and about the economic system in which the business, its customers, his employer, his fellow workers, and he himself are significant elements. . . . he must be able to distinguish fact from opinion, principle from illustration, and scientific analysis from unreasoned prejudice (p. 26)."

Olson considers it essential for business teachers to teach the broader aspects of business education:

Business teachers should be concerned about economic education also because knowledge of the economic aspects of living is vitally related to any well-rounded preparation for competency in business skills and practices. Programs in business education prepare pupils for jobs, a most important function. Skills in typewriting, shorthand, arithmetic, bookkeeping, and selling are all part of this program. At the same time, it is important to build an understanding of our business-economic system and of the reasons why these skills are needed for holding jobs and obtaining promotions based on increased ability and improved experience. But there are even broader aspects to business education that must receive serious attention. It is essential that workers understand the socio-political and economic systems in which they work so that as voters and citizens they can preserve the strengths and correct the weaknesses of those systems (p. 27).

Olson encourages the inclusion of understanding in secretarial or office practice courses:

A properly prepared business teacher, in addition to being able to accomplish much in such a course, will also be able to extend his teaching of economic principles and concepts into many of the more commonly offered business courses. These courses include general business offered either at the freshman-sophomore level or later at the senior level; also bookkeeping, business law, business management, and secretarial or office practice (p. 27).

Olson refers specifically to vocational business/office curricula:

Even in courses such as office or secretarial practice, it is possible to deal with fundamental economic concepts effectively. The need for an economic use of labor and other resources in a business office can, and should be, stressed in showing the need for economy in meeting effectively the ever-present challenge of competition in our free enterprise system. In a sense, the whole course deals with the development of efficient workers without which it will be difficult for the employers to be successful in their business operations (pp. 27-28).

Yerian (1972) urges teachers to take a broad view:

Every business teacher needs to appreciate the "all" of Business Education--to have a working knowledge of all its component parts. If he is trying to teach economic understandings only because someone has said he should, rather than because he really believes that such instruction is an integral part of every student's learning, he is not properly prepared for the task of helping American youth obtain a better understanding of the economic impacts that bear upon our everyday life (p. 29).

Darcy (1969) has noted the broad implications of a student's understanding of the economic system:

Economic understanding can show what role the individual workers play in helping the economic system as a whole determine the over-all level of production (how much is produced), the composition of production (what kinds of goods and services are produced), and the distribution or sharing of the nation's income and goods and services among the various members of society (for whom to produce). This understanding can help him appreciate how he, as a productive worker, contributes personally to achieving (or pursuing) the nation's economic goals of full production, freedom of choice, stable growth, equal opportunity, economic justice and security, and international balance (pp. 65-66).

Darcy adds:

Work is part of the economic process, but it is also more: work is a social arrangement. It meets--or has the potential to meet--certain non-economic social and psychological needs of man as well as helping to produce goods and services and earning an income. Work is not merely a means to an end (money and goods)--but is a worthy activity and an end in itself (p. 66).

According to Nolen et al. (1967), the most significant federal contribution to business education may be Public Law 88-210:

The Vocational Education Act of 1963 holds the most promise for business education This act is designed to strengthen and improve the

quality of vocational education and to expand the vocational education opportunities in the nation. For the first time, federal money is provided for education for the office occupations (p. 55).

The 1963 Vocational Education Act was amended in 1968, 1976, and 1981. These federal monies are available to office education courses that adhere to the guidelines.

Nolen states: "It is clear that the new emphasis on economic education, from elementary school through college, is designed to raise the level of economic literacy on the parts of the adults and young people of this country" (p. 161). He adds that "something" must be done about the depth of economic understanding of people because of the nation's experience with the depression, recessions, and wars.

As have many writers, Nolen acknowledges the low percentage of students enrolled in economics courses and the lack of economic knowledge on the part of Americans. He believes the "mere adding of courses in economics presents no solution to the problem" (p. 162).

He states that the purpose of economic education is to raise the level of economic understanding to the point at which all persons will possess the basic knowledge required to make those individual and group decisions that will bring the optimum in economic satisfaction (p. 163).

Nolen notes that "economic concepts can be and are developed in business courses where integration is desirable" (p. 167).

Numerous students drop out of or do not go beyond high school. Job preparation to secure employment for secondary level students is essential. Nolen states:

To prepare students as competent business employees was the first and still is the chief objective of business education, and we cannot justify the spending of public money on a type of education that pretends to prepare for business jobs but in reality does not produce acceptable results (p. 11).

Nolen elaborates on the need for adequate preparation in high school:

The high school business graduate will ordinarily enter the business world as an office worker or as a sales person in order to make use of his training and in order to earn income and obtain practical experience. Within a few years, however, some will be operating their own small businesses. Whether he intends to remain an employee for a business or have a business of his own, the high school business student should be given, in his business classes, the opportunity to develop a type of occupational intelligence which might be called business-economic competency. As a result of this study, the individual in business should be able to understand the effect that the passing of local ordinances and other legislation is likely to have upon his company. He should be able to understand what the effect would be of another company's moving into or out of the area, how the rising price level might affect customer purchases of his company's products, the importance of well-kept business records and when and how tax reports must be submitted, whether he should organize his small business as a corporation or as a partnership, and how his company can reduce risk of economic loss through purchasing the proper insurance. He should possess such knowledges as how the store in which he works can make after-hours bank deposits and the most efficient and economic way of communicating with customers or business personnel in specific situations. Such competencies are prized in the business world and they can be, and often are, developed through high school business courses and, at a more advanced level, in post-secondary business courses (pp. 17-18).

Tonne (1961), a professor of education at New York University, considers "the development of a better understanding of economic relationships . . . uniquely the function of the school." He continues:

The average business organization will not, and probably cannot, make certain that each of its workers has a complete and unbiased understanding of the relations of that particular business to the entire economic structure. The individual stenographer in an airtransport company does not need to know all about the process of airship building or of aerodynamics, but he does need to have an awareness of the relationship of these developments to his work in particular and to the social process in general. This is true for all of us. Economic illiteracy is too common to need more discussion of its existence (p. 47).

Concerning secondary education, Tonne states:

On the high school level, the student should be introduced to the study of economic life by means of word pictures, concrete situations, and definite problems, rather than by abstract rules and principles. Whatever theoretical material is involved should be presented in terms of practical situations and only as a means of relating the situation to the student's present or future experiences.

Essentially, the high school should strive to make the student economically literate. He should not be taught the old-time theoretical explanations for economic activity. In the final analysis, economics is nothing more than a specialized study of human behavior. If students can be made to realize that human beings are largely conditioned by environment and not by the arbitrary theories formulated in economic texts, the school will have performed a great service (p. 359).

Tonne offers specific suggestions:

Recent data indicate that the number of students taking economics is decreasing, while enrollment in courses in the problems of American democracy and other social studies is increasing. Such courses, however, deal with social and political, as well as economic life; hence, at best they can give little attention to economic situations. Perhaps special courses in economics to supplement the courses in problems of American democracy are

needed. If so, they may be allocated to the business department. Another suggestion would be to teach economics as a part of advanced business courses, which are increasingly being introduced in the high school program (pp. 360-61).

The Policy Framework: The JCEE,
PCBEE, and the State of Michigan

Joint Council on Economic Education

Several organizations have been striving to integrate economic education into the school curriculum, but perhaps none is more prominent than the Joint Council on Economic Education (JCEE). According to Hill (1980), organizations supporting the JCEE's programs include the American Economic Association, the National Council for the Social Studies, and the National Association of Secondary-School Principals (p. 3979-A).

Hill describes the Council:

The Joint Council on Economic Education celebrated its thirtieth anniversary in 1979. It was organized for the purpose of helping to improve the economic literacy of the American public through more effective instruction of economics in the nation's schools. It comprised an affiliated council in almost every state and over two hundred centers of economic education, located on college and university campuses. The affiliated councils were able to work effectively with local school systems. They organized workshops for teachers and administrators, conducted in-service projects or helped local school systems become part of the DEEP Cooperating Schools network. The centers tapped the skills of economics and education faculty members for use in the economic education movement (p. 2767-A).

Michael MacDowell (1979), president of the Joint Council on Economic Education, notes in the Association of Michigan Economic Education Center's Annual Report that:

"Our Council and Center affiliates service 447 cooperating

school districts enrolling some 9 million students. This system makes the Joint Council the largest non-governmental education delivery system in the nation" (p. 5). MacDowell continues: "Certainly there is no better equipped organization to bring an understanding of our economic system to students in our nation's schools than the Joint Council and its network" (p. 5).

One affiliate of the JCEE is the Association of Michigan Economic Education Centers (AMEEC), organized in 1977 and currently housed at Eastern Michigan University. The association is a nonprofit group dedicated to increasing independent, competent economic thinking among Michigan residents. The common goal of the JCEE and its affiliates, including AMEEC, is "to encourage, improve, coordinate, and service the economic education movement" (Directory of Affiliated Councils and Centers, 1980, p. 1). The Michigan organization provides pre-service and in-service economic education programs, including business education.

Policies Commission for Business
and Economic Education

Included in this section are statements indicating that the Policies Commission for Business and Economic Education (PCBEE) supports integrating economic concepts into existing business education courses. The statements refer to the business education teacher as qualified for effectively teaching business and economic understanding to

prepare students to be economically literate in the labor market and to improve their economic system.

Conover et al. (1979), in describing the PCBEE, state:

For nearly two decades the Policies Commission for Business and Economic Education has formulated policies for business education and disseminated policy statements to business educators and administrators (p. ii).

Matthews (1979) adds her opinion:

The statements which are embraced by this document are representative of innovative ideas conceived by some of the most astute minds in business education. The policies were developed by pillars of the Business Education fields, and each statement contains wisdom and insight. Although many of the statements were issued years ago, their relevancy is timeless. Each statement represents hour upon hour of debate and discussion; each statement is the culmination of years of dedicated service on the part of highly esteemed business educators (p. i).

The following paragraphs are from the twenty-five policy statements published in 1979 by the PCBEE.

1. . . . we believe it is imperative that ALL young people be adequately prepared to deal with business-economic issues and problems . . . We hope, however, that secondary school administrators will seek also to strengthen the vocational preparation of young people who are seeking business careers upon graduation from high school (p. 1).

2. The course or courses in business-economic understanding should be offered by those teachers, regardless of the areas they represent, who are best qualified. Those teachers who have been business oriented through courses in the field of business and economics and through business experience are most likely to provide the kind of educational program this letter proposes (p. 2).

3. Business education has an important contribution to make the economic literacy of every high school boy and girl (p. 3).

4. Special effort should be made to apply economic understandings and appreciations to pertinent topics and activities in all business subjects (p. 3).

5. The modern course in General Business should provide a basic background and a frame of reference for junior-senior studies in the social sciences and in business (p. 3).

6. If the American secondary schools fail to prepare young people to make informed decisions about economic problems as well as to be successful in occupational life, our young will be ill equipped to live in these times (p. 6).

7. Able young people are needed not only in the fields of science and mathematics. They are also urgently needed in important positions as managers, supervisors, and as management personnel. (p. 6).

8. . . . most of the eight out of ten boys and girls now in elementary school will seek to enter the labor market without a college degree (p. 6).

9. Unless these young people are adequately prepared in terms of job skills and in terms of economic backgrounds to deal with their personal and political problems, the schools will be blamed for failing to serve the needs of all young people (p. 6).

10. Each student should develop an awareness of the total economic system and its dynamic nature if he is to participate effectively in improving the economic system and maintaining a useful place for himself within it (p. 19).

11. The strong case for economic education has been presented and understood during the past decade. The growing concern of leaders in business, labor, agriculture, government, and education that economic illiteracy be wiped out has resulted in the formulation of effective procedures and the establishment of productive programs to achieve that objective. The Joint Council on Economic Education was founded two decades ago to provide direction and dynamism to the movement (p. 20).

12. Business education has an important contribution to make to the economic literacy of all secondary school students (p. 21).

13. Encourage general business teachers to teach the application of economic principles to business, labor, personal, and civic problems (p. 24).

14. Develop an economic education materials center (p. 24).

15. We Believe that a Professional Teacher . . . Understands youth and adults and the significant values of business and economic concepts which contribute to the development of an informed and effective member of society (p. 34).

16. We Believe that a Professional Teacher . . . Through preparation and experience identifies and organizes a body of knowledge into concepts, units of study, and learning experiences (p. 34).

17. With education, skills, and guidance, it is possible for individuals to select the kinds of work which will enable them to satisfy economic and psychological needs (p. 35).

18. . . . we strongly support business education about business which provides instruction for learning how the enterprise business system functions and how to manage efficiently one's personal, business, and economic life (p. 37).

19. As critical as the impact of free enterprise is to the American way of life, it is mis-understood and not understood by the general populace. Most citizens have difficulty understanding, describing, or appreciating how the economic system functions. This widespread lack of understanding and appreciation frequently is the result of free enterprise concepts and principles not being taught or being taught effectively (p. 39).

20. Business educators, because of their experience in the world of work as well as their academic preparation in business, are well qualified to teach in this area (p. 39).

21. Free enterprise concepts and principles can be taught as a separate course as well as be integrated into existing business courses (p. 39).

Michigan Department of Education

The Michigan State Board of Education (1980) emphasizes the interdisciplinary approach to learning about economics throughout the public schools. The Common Goals of Michigan Education declares that the goals for its schools "must be common to all students in Michigan's elementary and secondary schools" (p. 1). In the goal area entitled "Student Learning," the publication states that learnings are needed in order for students "to select and effectively function in their life-career roles of workers" (p. 7). One goal is that each student should "acquire knowledge of the principles, methods, and general content of the social sciences," which includes acquiring "knowledge of economics and economic systems" (p. 7).

In Consumer Economics Education Guidelines, also printed by the Michigan Department of Education (1981), the "Guiding Principles for Consumer Economics Education in Schools" also emphasizes the interdisciplinary approach:

The success of consumer economics education depends upon the success with which it can be integrated into various disciplines. If it is to be representative of the breadth and scope of real life conditions, consumer economics education must include the social, political, cultural, and economic influences on these conditions. Consumer economics education, then, should be integrated into, and correlated with, the existing school curriculum in all subject matter areas (p. 88).

The principles also emphasize continuous effect by including in one goal:

All grade levels have a direct responsibility to integrate consumer economics education concepts into their programs. Consumer economics education

in a school should be designed to coordinate efforts in each grade, which requires cooperative planning among all levels of education including elementary, secondary, and adult (p. 90).

Test of Economic Literacy

The Test of Economic Literacy (TEL) is a commercially sold instrument published by the Joint Council on Economic Education; it sells for \$6 per 25 copies. More than 150,000 have been sold. The TEL was an outgrowth of the Test of Economic Understanding (TEU). The TEU was referred to but not reviewed in the Buros Eighth Mental Measurements Yearbook. James V. Mitchell, author of Tests in Print III, made reference to the fact that the TEL was a substantive revision of the TEU, which prompted a telephone call to Dr. Mitchell at the University of Nebraska. On April 9, 1984, Dr. Mitchell stated that the review for the TEL is presently being checked. Once approved, the review will be entered in the Bibliographical Retrieval Services under access number 09132258 and will begin with a sentence similar to: "In summary, the test is a strong one for most of the content categories it measures."

Content Categories

The Test of Economic Literacy items are broken down into seven economic content categories, based upon the Master Curriculum Guide Framework (Hansen, 1977, pp. 7-25). A brief description of each of the content categories follows.

(A) The Basic Economic Problem - Economics is that branch of the social sciences which deals with how people use productive resources to satisfy their wants. The basic economic problem confronting individuals, groups of individuals, and entire societies is that resources are limited relative to their wants. This basic condition of scarcity requires them to make choices about how to utilize these resources most effectively in satisfying their wants. Were resources available in unlimited quantities, people would be able to produce and consume all they wanted. This would eliminate the need to make many difficult decisions about resource allocation. In the absence of such a world, people must make choices and, to make such choices, they must have a decision-making apparatus, which we call an economic system.

The basic economic problem of scarcity that has confronted all societies--ancient and modern, developed and underdeveloped, capitalist or communist--is the central problem from which all other economic problems flow. It is the starting point for an understanding of economics.

(B) Economic Systems - The way people and societies organize economic life to find answers to the questions posed above is called an economic system. An economic system can be described as the collection of institutions, laws, activities, controlling values, and human motivations that collectively govern economic decision-making.

(C) Microeconomics: Resource Allocation and Income Distribution - Microeconomics is the study of the behavior of individual households, firms and markets, of how prices and outputs are determined in those markets, and of how the price mechanism allocates resources and distributes income. To understand what goods and services an economy will produce requires that we know how the prices of goods and services are determined, how these prices determine the pattern of production, and how this pattern is influenced both by the structure of markets and by government actions.

(D) Macroeconomics: Economic Stability and Growth. Macroeconomics is the study of the functioning of the economy as a whole--of the total output of the economy, the total level of employment, and movements in the average level of all prices. The essence of macroeconomics lies in analyzing the determinants of aggregate supply (the total productive capacity of an economic system) and of aggregate demand (the total spending by economic units on the goods and services produced). In the short run, the main problem of macroeconomics is why aggregate demand sometimes exceeds and sometimes

falls short of aggregate supply, thus bringing on inflation and/or recession. In the long run, macroeconomics is concerned primarily with economic growth--increases in the productive capacity of the economy and average real income per person.

(E) The World Economy - Economists are concerned with economic relations among nation-states, including international trade and investment and international monetary relationships.

In general, economists use the same tools of analysis to understand the world economy as they do to understand a national economy. The principles underlying international trade are the same as those underlying domestic trade. Goods and services are sold in international markets at prices determined by demand and supply. However, special problems arise in international analysis because of the existence of national boundaries and different monetary systems. Moreover, the free functioning of market forces is modified in many international markets by government intervention in the form of tariffs, quotas, subsidies, state trading, and cartel action (e.g., oil).

(F) Economic Institutions - The institutions of an economy are of several kinds. There are formal organizations, such as households, corporations, government agencies, banks, labor unions, and cooperatives. There are also the customary ways of doing things, such as the use of money and of collective bargaining. And there are common prevailing sets of beliefs which pervade an economic system. The nature of economic institutions varies depending on the kind of economic system, although some institutions are common to almost all systems.

(G) Concepts for Evaluating Economic Actions and Policies - The heart of economics is decision-making--choosing among alternatives. Economic decisions are not made in a vacuum. Rather, they are made in the light of a set of goals. These goals vary from one society to another, and they vary among groups and individuals within societies. The goals most evident in the modern world, and particularly in American society are: freedom, economic efficiency, equity, security, stability (full employment and the absence of inflation), and growth.

These goals or criteria provide means for evaluating the performance of economic systems and parts of them, as well as the desirability of existing programs and newly proposed policies.

Cognitive Levels

The Test of Economic Literacy items used in this study are also broken down into five cognitive levels, a variant of Benjamin S. Bloom's taxonomy which includes six levels. (The sixth was omitted here for the reason noted below.) The five cognitive levels are: "(I) Knowledge," "(II) Comprehension," "(III) Application," "(IV) Analysis," and "(V) Comprehension." These five levels are described more fully in Chapter 3 and Appendix E, but some discussion of the cognitive levels and domain follows.

In 1956 Bloom wrote the Taxonomy of Education Objectives: The Classification of Educational Goals, Handbook 1: Cognitive Domain in which he detailed six cognitive levels. Dr. Bloom is currently Distinguished Service Professor of Education, University of Chicago. He also is a leading educational researcher and has had numerous publications.

Bloom et al. (1981) commented about the Taxonomy of Educational Objectives:

Handbook 1, Cognitive Domain, was published in 1956; it classifies objectives which involve intellectual tasks. For some of these objectives the student has to do little more than remember; for others the student must determine the essential problem and then reorder given material or combine it with ideas, methods, or procedures previously learned.

Bloom's categories are arranged along a continuum:

The three taxonomies place the behavioral aspect of the objective within a hierarchical framework: each category is assumed to include behavior more complex, abstract, or internalized than the previous category. In the Cognitive

Domain these categories are arranged along a continuum from simple to complex . . . (p. 150).

Bloom et al. wrote a condensed version of Bloom's taxonomy. The headings of the "Cognitive Domain" section are listed below and indicate that the taxonomy is current in terminology and use. Bloom's synthesis level, which is part of the "Outline of Bloom's Taxonomy of Educational Objectives: Cognitive Domain" (pp. 271-273, 331-333), is not described here because it was omitted by the TEL working committee. The committee presumed that little of this level is taught in economics units.

KNOWLEDGE

1.00 Knowledge

1.10 Knowledge of specifics

1.20 Knowledge of ways and means of dealing with specifics

1.30 Knowledge of the universals and abstractions in a field

INTELLECTUAL ABILITIES AND SKILLS

2.00 Comprehension

2.10 Translation

2.20 Interpretation

2.30 Extrapolation

3.00 Application

4.00 Analysis

4.10 Analysis of elements

4.20 Analysis of relationships

4.30 Analysis of organizational principles

6.00 Evaluation

6.10 Judgments in terms of internal evidence

6.20 Judgments in terms of external criteria

In the chapter entitled "Analysis of Learning Units," Bloom et al. discuss one type of analysis used to "determine the behaviors or learning outcomes related to each new element of content Given a new idea, relation, statement of truth, or other information," Bloom questions what the student is expected to learn, remember, and be able to do with the specific subject matter introduced in a learning unit (p. 157).

Bloom et al. classifies new elements of subject matter or content according to some of the categories in the 1956 Taxonomy of Educational Objectives. "These classifications attempt to define a hierarchy of levels of behavior that relate to the difficulty and complexity levels of the learning process" (p. 157). The following are the levels.

LEVELS/CLASSIFICATIONS/CATEGORIES OF THE LEARNING PROCESS (pp. 158-9)

Knowledge of terms

Knowledge of facts

Knowledge of rules and principles

Skill in using processes and procedures
(correctly)

Ability to make translations

Ability to make application

Bloom et al. explains why the "Skill in using processes and procedures" category is not included in the original Taxonomy of Educational Objectives.

We found, after inspecting a number of courses and especially some of the newer curriculum materials, that students are frequently expected to be able to use certain procedures and operations accurately and rapidly. Quite frequently these are particular steps in a process which the students learn in the appropriate sequence. It is sometimes possible for students to learn a process before they have a name or rule to identify it--for example, they may be able to speak correctly before they have grammatical rules (p. 158).

Harvey and Horton (1977) state about cognitive entry behaviors: "All learning tasks are built on some previous learning. The school curriculum assumes prerequisite knowledge and skills before new learning tasks are undertaken" (p. 190). They add:

"The research by Bloom and his students suggests that learning achievement is largely determined by the extent to which students possess the necessary cognitive entry behaviors applicable to subsequent learning tasks" (p. 190).

CHAPTER 3

DESIGN OF THE RESEARCH AND PROCEDURES USED

The research design and procedures of this study are described in this chapter. Five elements are discussed: population, population selection, gathering the data, the data instruments, and analysis of the data.

The purpose of this study was to provide interested professionals with information about the basic economic understanding of selected Michigan business education students. Data were acquired about the students demographic profiles and from an economic literacy test.

The descriptive method was used. According to Good (1966), "descriptive studies gather evidence about current conditions with a forward-looking frame of reference" (p. 172). This descriptive study provides data on "what is" in terms of the information derived from the test and demographic questionnaires.

Population

The study population consisted of 1,506 secondary school students who were enrolled in business classes taught by participating Vocational Office Block (VOB) project teachers. The population was comprised of tenth, eleventh,

and twelfth grade students and represented 53 schools located in lower Michigan.

Many business education classes are arranged on a rotation basis with varying time periods for activities and competency assignments. Teachers cooperate more readily if all the students in a class can participate because the rotation arrangement is thus not severely upset or changed. The pattern was favorable for this study in that all of the students in the class on the day of the test constituted the population. Thus the population represented a census rather than a sample.

Population Selection

Student participants were selected because their teachers were involved in the Vocational Office Block (VOB) project. The choice of population was a consideration in determining the extent of response. The VOB teachers attend in-service sessions, and high returns were expected because of anticipated cooperation in administering and returning the data instruments by a specified date. Cooperation by the students taking the test was at risk, however, in that their willingness to participate was unknown.

The students attended schools receiving vocational reimbursement for at least one of the 14.0000 Office Education (OE) code programs. This code was subsequently changed to Classification of Instructional Programs (CIP) 07. Funding for these programs was received from the Vocational-

Technical Education Service, Michigan Department of Education. The schools' eligibility was confirmed from the 1979-1980 Reimbursable Vocational Education computer printout between pages 292-322, and pages 340-401.

The classification of school size was obtained from the Michigan High School Athletic Association based on its January, 1981, listing and was as follows: Class A, student enrollment of 1,344 or more; Class B, student enrollment between 676 and 1,343; and Class C, student enrollment of 349-675. Class D schools were not part of this study because there were no VOB teachers in schools with fewer than 349 students.

Gathering the Data

A letter was mailed on April 12, 1981, to each of the 98 Michigan State University Vocational Office Block (VOB) project teachers (Appendix A). The letter requested that the teachers' administer a 40-minute Test of Economic Literacy (TEL) to their classes. A stamped, addressed response card was enclosed on which to indicate the number of students in the class. A second letter and card were mailed on April 20, 1981, to those who did not respond.

Packets were prepared for distribution to each VOB teacher whose students could participate. Each packet contained a cover letter, instructions, teacher survey questionnaire sheet, student survey questionnaire sheets, instruction sheet for the test, test booklets, score sheets,

number 2 pencils for each respondent, and a stamped, addressed return envelope. In addition, a telephone number was provided for questions or comments. The packets were mailed first-class on April 28, 1981, to participating teachers.

The tests were administered between May 7, 1981, and June 10, 1981. Each participating student completed two instruments. The first was a sheet of eight questions seeking demographic information. The second was the Test of Economic Literacy, which is designed to assess student understanding of the basic economic concepts. The teachers administering the test also completed a questionnaire which obtained demographic and related information about the respondents.

On June 8 and June 10 follow-up telephone calls were made to teachers who had not returned the packets. A VOB teacher or colleague monitored the class during the test. All students were treated the same as to instructions and time limits, in accordance with the instruction sheet (Appendix B).

The Data Gathering Instruments

This study was conducted with a test instrument designed to measure secondary students' present understanding of basic economic concepts. This instrument, the Test of Economic Literacy (TEL), is included in Appendix B. The TEL was administered by vocational business education

teachers to business education students enrolled in secondary-level classes. The TEL instrument was not altered.

This study also included two questionnaires for the purpose of gathering demographic information about the respondents. One was designed for the students to complete, the other designed for the administrators of the test. The questionnaire items were carefully constructed and then revised after comments for modifications and improvements were received from a jury of experts.

The questionnaire to the administrator of the TEL, the questionnaire to the students taking the TEL, and the TEL were the instruments used to gather all demographic and research data.

The Questionnaire to the Teachers Administering the Test

The questionnaire sent to the teachers consisted of eight questions. This questionnaire was duplicated on yellow paper to distinguish it from the students' questionnaire on white paper (Appendix B).

Questions 1 and 2 requested each administrator's name and school, which remained anonymous for this study.

Question 3 inquired whether the administrators would like to receive the scores of their students.

Question 4 asked whether the students being tested were in a vocationally reimbursed class.

Questions 5 and 6 solicited information as to whether the school required or offered an economics course.

Question 7 sought information about class size and/or enrollment in the school or vocational area center.

Question 8 asked if the instructors would like to attend economic education in-service programs.

The Questionnaire to the Students

The student questionnaires consisted of eight questions (Appendix B).

Question 1 asked the age, grade, and sex of the student.

Question 2 pertained to the economics course backgrounds of the student. An economics course was defined as "a course with a major focus on economics at least six weeks in length and taken in grades 8, 9, 10, 11, or 12."

Question 3 asked whether the student would be "taking a course entitled ECONOMICS before high school graduation."

Question 4 elicited information as to whether the student had ever taken courses in the basic business, marketing, and/or consumer areas. Examples of courses were provided for each area.

Question 5 and 6 pertained to the respondent's family background, including the educational level and occupational area of the father, mother, and/or guardian.

Question 7 solicited information about the approximate annual income of the respondent's family.

Question 8 requested the zip code of the respondent's home mailing address for geographical information.

The Test Instrument

The Test of Economic Literacy (TEL) is designed to measure cognitive achievement. The instrument, copyrighted by the Joint Council on Economic Education in 1979, was the outgrowth of the revised Test of Economic Understanding (TEU). The TEU was developed in 1964 because of a need for an appropriate instrument to measure the economic knowledge of high school students. The updating of the TEU started in 1976 with trial administrations and revisions by a TEL Working Committee. This committee was composed of economic educators, economists, and high school teachers. By the fifth trial version of the test, poor questions had been removed, there was discrimination power in individual test items, and overall reliability of the test was established. In addition, the TEL National Advisory Committee provided its reaction to the test (Soper, 1979, p. 2).

The TEL has two forms, Test A and Test B. Each is eight pages long and contains 46 multiple-choice items allowing four choices per question. Test A was arbitrarily selected for this study as the forms do not differ significantly.

Norming. The TEL was normed in May and June, 1977, using a nationwide sample. A stratified sampling procedure was used to assure representation of subgroups. Statistical data were obtained from the norm data and were used to judge

the technical adequacy of the test. The norm data were collected from classes in 92 high schools located in different geographical regions, areas, and sizes of schools within the United States. Although there is a high probability that the norming sample contains a random distribution of students, no claim was made that the group of 8,660 students tested exactly represents the student population (Soper, p. 11). Additional norming sample statistics are found in Appendix C.

Validity--Content and Concurrent. It was the judgment of the members of the TEL Working Committee and the National Advisory Committee that the content finally adopted best reflected the actual structure of the TEL. The relative scores of students in the norming sample who had or had not taken previous economics instruction was the check of the validity of any individual test items (Soper, p. 15).

There was also limited evidence of concurrent validity because the test correlated with other measures of achievement in economics. Data were obtained from a highly rated midwestern high school showing student performance on the test before and after economics instruction. The information and figures from a sample of 163 students indicated that the statistical differences were significant beyond the .01 level of confidence (Soper, p. 15).

Test of Reliability. The standard error of measurement was regarded as an index of the TEL's reliability and as an estimate of the amount of variation which could be

expected in the test score. The standard error of measurement was determined directly from the reliability coefficient and the standard deviation of the test scores from both forms of the TEL. The standard error of measurement was 3.02 for Form A. A raw score of 23 on a test with a standard error of measurement of 3.0 indicates that about 67 percent of the time a person's "true" score lies in a range from 20 to 26, or that about 95 percent of the time a person's true score lies in a range from 17 to 29. The other overall test for reliability was the Cronbach's alpha, which was .875. A Cronbach's alpha of 1.00 would indicate a perfectly reliable test (Soper pp. 13-14).

Content Categories. The questions from Form A of the TEL were used for this study. They were designed to test the knowledge of seven distinct content categories. The content categories are listed below. Also included are the number of questions in each category and the percentage of the content category items for the test. There are 46 questions in the test.

CONTENT CATEGORY NAME	NUMBER OF QUESTIONS	PERCENT
The Basic Economic Problem	4	8.7
Economic Systems	6	13.0
Microeconomics: Resource Allocation and Income Distribution	14	30.4
Macroeconomics: Economic Stability and Growth	17	37.0

CONTENT CATEGORY NAME	NUMBER OF QUESTIONS	PERCENT
The World Economy	1	10.8
Economic Institutions	2	
Concepts for Evaluating Economic Actions and Policies	2	
Total (percentage rounded)	<u>46</u>	<u>100.0</u>

Cognitive Levels. The TEL questions can also be broken down into a five-level schema of cognitive taxonomy. This is a variant of Benjamin S. Bloom's original taxonomy of six levels or categories (Soper, p. 3). The "synthesis" level on originality and creativity was omitted by the TEL Working Committee because it presumed that little or no synthesis was called for in a typical high school economics course or unit. The members of the committee believed the five learning levels were adequate. The five cognitive levels are (Soper, p. 4):

- I. Knowledge
- II. Comprehension
- III. Application
- IV. Analysis
- V. Evaluation

Cognitive Levels Matched With Content Categories.

The TEL questions were written to match the cognitive levels with the economic content categories. The following pages list in detail the content categories, the five cognitive

levels, and a matrix, page 70, which breaks down each test item by content category and cognitive level.

The TEL contains seven economic content categories. These concepts were an integral part of the Master Curriculum Guide in Economics for the Nation's Schools, Part I, A Framework for Teaching Economics: Basic Concepts. The seven economic content categories and their subcategories are as follows (Soper, p. 3).

A. THE BASIC ECONOMIC PROBLEM

1. Economic wants
2. Productive resources
3. Scarcity and choices
4. Opportunity costs and trade-offs
5. Marginalism and equilibrium

B. ECONOMIC SYSTEMS

6. Nature and types of economic systems
7. Economic incentives
8. Specialization, comparative advantage, and the division of labor
9. Voluntary exchange
10. Interdependence
11. Government intervention and regulation

C. MICROECONOMICS: RESOURCE ALLOCATION AND INCOME DISTRIBUTION

12. Markets, supply and demand
13. The price mechanism
14. Competition and market structure

- 15. "Market failures": information costs, resource immobility, externalities, etc.
- 16. Income distribution and government redistribution

D. MACROECONOMICS: ECONOMIC STABILITY AND GROWTH

- 17. Aggregate supply and productive capacity
- 18. Aggregate demand unemployment and inflation
- 19. Real and money income; price level changes
- 20. Money and monetary policy
- 21. Fiscal policy: taxes, expenditures, and transfers
- 22. Economic growth
- 23. Savings, investment, and productivity

E. THE WORLD ECONOMY

- 24. International economics

F. ECONOMIC INSTITUTIONS

G. CONCEPTS FOR EVALUATING ECONOMIC ACTIONS AND POLICIES

Economic goals: freedom, economic efficiency, equity, security, price stability, full employment, and growth

Trade-offs among goals

Following are listed the five cognitive levels used in the TEL which were modified from Bloom's six-level taxonomy (Soper, p. 4).

LEVEL	OBJECTIVE	EMPHASIS
I Knowledge	To show that the student knows	recognition and recall--ability to remember facts in a form close to the way they were presented
II Comprehension	To show that the student understands	grasp the meaning and intent of information--ability to tell or translate in own words
III Application	To show that the student can use what is learned	use of information--ability to apply learning to new situations and real-life circumstances
IV Analysis	To show that the student perceives and can pick out the most important points in material presented	reasoning--ability to break down information into component parts and to detect relationships of one part to another and to the whole
V** Evaluation	To show that the student can judge and evaluate ideas, information solutions, procedures and goals	criteria or standards for evaluation and judgment--ability to make judgments based on criteria or standards

The matrix on the following page sorts each item of Form A of the TEL by content category and cognitive level. Even though an individual might disagree with a given item, it was the judgment of the TEL Working Committee that the categories and levels adopted best reflected the actual structure of the TEL (Soper, p. 3). When combined, the "(I) Knowledge" and "(II) Comprehension" levels relate to 47.8 percent of the questions and the "(III) Application," "(IV) Analysis," and "(V) Evaluation" levels to 52.2 percent of the questions.

A MATRIX TO MATCH THE TEL COGNITIVE LEVELS WITH
CONTENT CATEGORIES BY TEST QUESTION NUMBER

CONTENT CATEGORIES	COGNITIVE LEVELS				
	I	II	III	IV	V
	Knowl- edge	Compre- hension	Appli- cation	Anal- ysis	Evalu- ation
The basic economic problem	0	1, 2	3, 19	0	0
Economic systems	4, 5	6, 7	8, 9	0	0
Microeconomics: Resource allocation and income distribution	10	11, 12 13	14, 15 16, 17 20, 21	22, 18	23, 24
Macroeconomics: Economic stability and growth	25, 26 30, 31 32	33, 34 35, 36	37	38, 39 27, 28 40, 41	42
The world economy	0	43	0	0	0
Economic institutions	44, 46	0	0	0	0
Concepts for evaluating economic actions and policies	0	0	0	0	29, 45
Total number of questions	10	12	11	8	5
Percent	21.7	26.1	23.9	17.4	10.9

*The test question numbers are listed. The questions are in Appendix B.

Hypotheses for Question 7. The following are formal hypotheses for research Question 7 addressed in this study, which required the comparison of group means.

1. H_0 : There is no difference between Class A, B, C, and secondary area vocational center schools regarding how students would answer test questions from the content category for "(A) The Basic Economic System."

2. H_0 : There is no difference between Class A, B, C, and secondary area vocational center schools regarding how students would answer test questions from the content category for "(B) Economic Systems."

3. H_0 : There is no difference between Class A, B, C, and secondary area vocational center schools regarding how students would answer test questions from the content category for "(C) Microeconomics: Resource Allocation and Income Distribution."

4. H_0 : There is no difference between Class A, B, C, and secondary area vocational center schools regarding how students would answer test questions from the content category for "(D) Macroeconomics: Economic Stability and Growth."

5. H_0 : There is no difference between Class A, B, C, and secondary area vocational center schools regarding how students would answer test questions from the content category for "(E) The World Economy."

6. H_0 : There is no difference between Class A, B, C, and secondary area vocational center schools regarding

how students would answer test questions from the content category for "(F) Economic Institutions."

7. H_0 : There is no difference between Class A, B, C, and secondary area vocational center schools regarding how students would answer test questions from the content category for "(G) Concepts for Evaluating Economic Actions and Policies. "

8. H_0 : There is no difference between Class A, B, C, and secondary area vocational center schools regarding how students would answer test questions from the cognitive level "(I) Knowledge. "

9. H_0 : There is no difference between Class A, B, C, and secondary area vocational center schools regarding how students would answer test questions from the cognitive level "(II) Comprehension."

10. H_0 : There is no difference between Class A, B, C, and secondary area vocational center schools regarding how students would answer test questions from the cognitive level "(III) Application."

11. H_0 : There is no difference between Class A, B, C, and secondary area vocational center schools regarding how students would answer test questions from the cognitive level "(IV) Analysis."

12. H_0 : There is no difference between Class A, B, C, and secondary area vocational center schools regarding how students would answer test questions from the cognitive level "(V) Evaluation."

H₁: For each of the above null hypotheses, the alternate hypothesis is that a difference does exist.

Analysis of the Data

When the research data had been collected and returned, information was entered onto the Michigan State University Cyber 10 computing system, verified, and analyzed by various subroutines of the Statistical Package for the Social Sciences (SPSS).

SPSS is a Fortran based program, originally developed as the result of a government grant, which affords researchers a relatively simple means for sorting and performing statistical analysis. Such tasks as determining frequency distributions or computing descriptive statistics, analyses of variance, and post-hoc comparisons are accomplished automatically, leaving researchers more time to review and consider the meaning of their findings. Frequency distributions were used to describe the data collected for this study. Analyses of variance were used to analyze the data and Scheffé's post-hoc multiple comparison test was used where significance was found.

CHAPTER 4

PRESENTATION OF RESEARCH FINDINGS

Descriptive information resulting from this study is presented in this chapter. Selected business education students responded to a questionnaire which provided demographic data and were given a test designed to assess their economic knowledge. Also, a questionnaire was completed by the teachers who administered the test.

The data are presented in two sections. The first addresses research questions one through four and reports demographic and related information obtained from the questionnaires. The second pertains to questions five through seven and presents descriptive information derived from the test scores. Percentages of totals may be rounded.

Research Questions One Through Four: Demographic and Related Information

Demographic information presented in Tables 1 through 12 present data which help answer the first four questions of this study. The information was obtained from the questionnaires (Appendix B).

Research Question 1

What was the composite profile of the students who were tested for current economic knowledge: sex; age;

grade; parents' or guardians' educational background, occupational area, and income level; and class size of secondary school?

Table 1 presents data by sex of respondents. Among the 1,506 respondents, 1,430 (95.0 percent) were female. Males represented less than 5 percent of the respondents.

Table 1
Sex of Respondents
N=1,506

Sex	Number of Respondents	Percent
Male	74	4.9
Female	1,430	95.0
No response	<u>2</u>	<u>.1</u>
Total	1,506	100.0

Table 2 provides data on the age distribution of the respondents. They ranged from 15 to 20 years of age, although 727 or almost one-half (48.3 percent) were 17 years of age, and 478 (31.1 percent) were 18 years of age. The least number of respondents fell into the 15 and the 20-year old groups.

Table 3 indicates the respondents' grade level. Most respondents 933 or 62 percent, were in the twelfth grade; 550 (36.5 percent) were in the eleventh grade.

Table 2
Age of Respondents
N=1,506

Age	Number of Respondents	Percent
15	2	.1
16	271	18.0
17	727	48.3
18	468	31.1
19	34	2.3
20	2	.1
No response	<u>2</u>	<u>.1</u>
Total	1,506	100.0

Table 3
Grade Level of Respondents
N=1,506

Grade Level	Number of Respondents	Percent
10	12	.8
11	550	36.5
12	933	62.0
No response	<u>11</u>	<u>.7</u>
Total	1,506	100.0

Educational levels attained by the respondents' fathers or male guardians are shown in Table 4. High school graduates accounted for 603 (40.0 percent). Approximately 29 percent had less education than a high school diploma, and approximately 28 percent had more education.

Table 4
Educational Level of Respondents'
Fathers or Male Guardians
N=1,506

Educational Level	Number of Respondents	Percent
Less than high school diploma	431	28.6
High school graduate	603	40.0
Some college or additional education	254	16.9
College degree	164	10.9
No response	<u>54</u>	<u>3.6</u>
Total	1,506	100.0

Educational levels attained by the respondents' mothers or female guardians are presented in Table 5. More than half, or 805 (53.5 percent), were high school graduates. Approximately 24 percent had less education than a high school diploma, and approximately 21 percent had more education.

Table 5

Educational Level of Respondents'
Mothers or Female Guardians
N=1,506

Educational Level	Number of Respondents	Percent
Less than high school diploma	355	23.6
High school graduate	805	53.5
Some college or additional education	219	14.5
College degree	99	6.6
No response	<u>28</u>	<u>1.9</u>
Total	1,506	100.0

Table 6 reveals the occupational area of the respondents' fathers or male guardians. Crafts, foremen, or operatives accounted for 674 (44.8 percent). Examples listed were: mechanic, repairman, carpenter, construction worker, truck driver, and shop worker. In the "other" category were 321 (21.3 percent). The three "other" occupational areas specified most frequently were: (1) management, supervision, and administration; (2) self-employment; and (3) federal, state, and local government (firemen, policemen, FBI agent, county worker). These were followed by: retired, disabled, computer operator, and accountant.

Table 6

Occupational Area of Respondents'
Fathers or Male Guardians
N=1,506

Occupational Area	Number of Respondents	Percent
Clerical	87	5.8
Crafts, foremen, operatives	674	44.8
Farmers	54	3.6
Homemaker	7	.5
Professional or technical	141	9.4
Sales	79	5.2
Service	46	3.1
Other	321	21.3
No response	<u>97</u>	<u>6.4</u>
Total	1,506	100.0

Table 7, which pertains to the occupation of the respondents' mothers or female guardians, reveals that 514 (34.1 percent) fell into the homemaker category and 310 (20.6 percent) into the clerical category (bookkeeper, secretary, typist). Some of the "other" occupational listings were: self-employment, management, computer operator, banking, accountant, cook, and unemployed.

Table 7

Occupational Area of Respondents'
Mothers or Female Guardians
N=1,506

Occupational Area	Number of Respondents	Percent
Clerical	310	20.6
Crafts, foremen, operatives	93	6.2
Farmer	8	.5
Homemaker	514	34.1
Professional or technical	88	5.8
Sales	71	4.7
Service	107	7.1
Other	243	16.1
No response	<u>72</u>	<u>4.8</u>
Total	1,506	100.0

Table 8, relating to the income level of the respondent's family, reveals that 777 or approximately one-half (51.6 percent) of the students marked "unknown." Among those who did specify an amount, 247 (16.4 percent) indicated they perceived the family income level was between \$20,000 and \$29,999. Only 65 (4.3 percent) perceived the income level to be less than \$10,000 a year.

Table 8

Income Level of Respondents' Family
N=1,506

Course Area	Number of Respondents	Percent
Under \$10,000 a year	65	4.3
\$10,000-\$19,999	182	12.1
\$20,000-\$29,999	247	16.4
\$30,000 or more	198	13.1
Unknown	777	51.6
No response	<u>37</u>	<u>2.5</u>
Total	1,506	100.0

Table 9 presents data on the classification of schools. The largest number of respondents attended Class A schools: 713 (47.3 percent) went to a school with an enrollment of 1,344 or more students. Class B schools, with an enrollment of between 676 and 1,343 students, accounted for 148 (9.8 percent). Class C schools, with an enrollment of between 349 and 675 students, accounted for 348 (23.1 percent). There were 297 (19.7 percent) respondents who attended area vocational education centers (vocational training facilities). These centers draw students from Class A, B, C, and D high schools, but Class D schools were not examined in this study.

Table 9

Classification of Schools
N=1,506

Classification of School	Number of Respondents	Percent
Class A (1,344+)	713	47.3
Class B (676-1,343)	148	9.8
Class C (349-675)	348	23.1
Class D (348 or less)	000	0.0
Area vocational education centers (includes all school sizes)	297	19.7
Total	1,506	100.0

To summarize the data obtained from Question 1, a majority of the students were females enrolled in the eleventh or twelfth grade. More of the students' mothers (or guardians) than fathers (or guardians) had graduated from high school; among the parents who had more education than a high school diploma, more fathers than mothers had achieved this status. Two or three out of every ten parents had college or additional education beyond high school. The occupational areas for most fathers were "crafts, foremen, operatives;" the "other" category included "management, self-employment, government." Mothers were from the "home-makers" and "clerical" classifications. A majority of students could not give a family income figure.

Research Question 2

What is the composite profile of the students who were tested in terms of a previous economics course and/or related courses? Examples of related courses are basic business, marketing, and consumer.

Table 10 shows the number and percentage of respondents who had taken an economics course. In the student questionnaire the following definition was given: "An ECONOMICS course is a course with a major focus on economics at least six weeks in length and taken in grades 8, 9, 10, 11, or 12." Among the 1,506 students, 437 (29.0 percent) indicated they had taken an economics course.

In addition to the economics course background of the students, Table 10 includes data on three related areas: basic business, marketing, and consumer. These course areas, with various titles, provide economic units or integrate economic concepts to provide students with an understanding of the U.S. economic system. Among those who had taken related courses, 874 (58.0 percent) had taken a basic business course, 272 (18.1 percent) had taken a consumer course, and 133 (8.8 percent) had taken a marketing course. Since students may have taken none or any combination of these courses, the percentage column in Table 10 does not total one hundred.

Table 10

Courses Taken By Respondents Which
Include Economic Concepts
N=1,506

Course	Number of Respondents	Percent
Economics:		
Economics (Taken)	437	29.0
Economics (Anticipate taking)	183	12.2
Related Economics Courses:		
Basic Business	874	58.0
Marketing	133	8.8
Consumer	272	18.1

*Students may have taken none or any combination of courses.

Research Question 3

Is an economics course offered and required at the schools where the students were tested?

As shown in Table 11, 45 Class A, B, and C schools are represented in this study. Among the 26 Class A schools, 21 (81 percent) offer an economics course, and one (3 percent) requires it. Of the 7 Class B schools, 6 (86 percent) offer an economics course, and one (14 percent) requires it. Four (33 percent) of the 12 Class C schools offer an economics course, and three (25 percent) require it. Class D schools are not represented in this study. Eight secondary area vocational education centers were part of this study but do not offer economics courses.

Table 11

Number and Percentage of Schools By
Classification Which Offer and
Require an Economics Course
N=53

Classification of Schools	Number of Schools	<u>Economics Course Offered</u>		<u>Economics Course Required</u>	
		Number	Percent	Number	Percent
Class A	26	21	81	1	3
Class B	7	6	86	1	14
Class C	12	4	33	3	25
Class D	-	-	-	-	-
Area vocational education centers	8	-	-	-	-

Research Question 4

To what extent do the teachers express an interest in attending workshops, seminars, or in-service programs to learn more about methods of integrating economic concepts into their curriculum?

Table 12 reveals that 23 (43 percent) of the 53 teachers who administered the test expressed an interest in such activities for credit or noncredit, and approximately one-third or 17 (34 percent) responded they were undecided.

Table 12

Teachers' Expressed Interest in Attending
Workshops, Seminars, or In-service Sessions

Response	Number of Teachers	Percent
Interested	23	43
Not interested	11	21
Undecided	17	32
No response	<u>2</u>	<u>4</u>
Total	53	100

Research Questions Five Through Seven:
Descriptive Information

Research Questions 5, 6, and 7 relate to the students' understanding of basic economic concepts, and the data are most usefully interpreted descriptively. The economic concepts are broken down into seven categories and five cognitive levels (Appendices D and E). Scores were compiled from the Test of Economic Literacy taken by the 1,506 students (Appendix B). The narrative accompanying Tables 13 through 28 examines and analyzes the applicable data in an effort to assess the students' knowledge. The tables include both the number and the percentage of correct responses by the students. The questions and answers are presented by subcategories in chronological order. The narrative descriptions state the percentage of correct responses. The students chose an answer to each question from

the best of four choices (Appendix B). The correct answer or response to each question is revealed in this study with permission of the Joint Council on Economic Education.

The TEL was used to measure the students' achievement on two distinct dimensions: understanding of concepts and attainment of cognitive levels. For each, the percentage of items correctly answered was used as the dependent measure.

Research Question 5

Which of the seven content areas do students understand the most and the least as evidenced by their scores from the Test of Economic Literacy? The seven content categories are:

- A. The Basic Economic Problem
- B. Economic Systems
- C. Microeconomics: Resource Allocation and Income Distribution
- D. Macroeconomics: Economic Stability and Growth
- E. The World Economy
- F. Economic Institutions
- G. Concepts for Evaluating Economic Actions and Policies

Table 13 summarizes student achievement in each of the seven content categories measured in the TEL. The category in which students correctly answered the highest percentage of questions was "(B) Economic Systems." One-half (50.0 percent) of the responses to questions from this category were correct. The category for which the students

correctly answered the lowest percentage of questions was "(G) Concepts for Evaluating Economic Actions and Policies." Only 20.9 percent of the questions from this category were correctly answered.

Although it is important to address the students' achievement in the other five categories, it should be stressed that the first four categories include concepts "of fundamental importance because they provide a basis for understanding and using the other concepts" (Hansen, 1977, p. 7). Within these first four categories, students correctly answered the lowest percentage of questions in

Table 13

Percentage of Correct Responses to Questions in the
Test of Economic Literacy Related to the
 Seven Economic Content Categories
 N=1,506

Category Letter and Content Categories	Percent of Correct Responses
B Economic Systems	50.0
C Microeconomics: Resource Allocation and Income Distribution	40.4
A The Basic Economic Problem	34.4
D Macroeconomics: Economic Stability and Growth	33.5
F Economic Institutions	27.9
E The World Economy	24.5
G Concepts for Evaluating Economic Actions and Policies	20.9

"(D) Macroeconomics: Economic Stability and Growth."

Approximately one-third (33.5 percent) of the responses were correct in this category.

Table 13, on the previous page, shows the percentage of correct responses by students in each of the seven content categories. Tables 14 through 20 (pages 90 through 104) list all the 46 questions in the test according to content category. Each table gives the number and percentage of correct responses to the specific questions within each of the seven content categories.

Table 14 shows the number and percentage of correct responses by students to questions relating to "(A) The Basic Economic Problem" content category. Within this category, the highest percentage of correct responses (77.6 percent) was for Question 19 in the "Marginalism and Equilibrium" subcategory. Question 1 from the "Productive Resources" subcategory had the lowest percentage of correct responses (2.7 percent). Also, Question 3 in the "Opportunity Costs and Trade-Offs" subcategory was another which had a low percentage of correct responses (14.1 percent) when compared across the content categories.

The "(A) The Basic Economic Problem" category included the questions which had the highest and the lowest percentage of correct responses by students across all content categories measured by the TEL.

Table 14

Number and Percentage of Correct Responses to Questions
in the Test of Economic Literacy Related to Content
Category A: The Basic Economic Problem
N=1,506

Test Questions and Correct Responses	Number of Correct Responses	Percent of Correct Responses
<u>Productive Resources:</u>		
1. Three major factors of production are land, labor, and capital. Which of the following groups best illustrates these factors? Iron ore, clerks, and trucks.	40	2.7
<u>Scarcity and Choices:</u>		
2. What is meant by the statement that every economic system (such as tradition, command, or market economy) faces the fact of scarcity? There are not enough productive resources to satisfy all wants of society.	648	43.0
<u>Opportunity Costs and Trade-Offs:</u>		
3. The opportunity cost of a new public high school is the: other desirable economic goods that must be given up to build the school.	212	14.1
<u>Marginalism and Equilibrium:</u>		
19. Using the information in the table above, we know that as income increases the <u>rate</u> of taxation: increases and the amount of tax increases.	1,168	77.6

Table 15 presents the number and percentage of correct responses by students to questions related to the "(B) Economic Systems" content category. The highest percentage of correct responses (58.0 percent) was for Question 4 in the "Nature and Types of Economic Systems" category. Question 7 in the "Specialization, Comparative Advantage, and Division of Labor" subcategory had the lowest percentage of correct responses (40.4 percent).

Table 16, page 94, lists the number and percentage of correct responses by students to questions pertaining to the "(C) Microeconomics: Resource Allocation and Income Distribution" content category. The highest percentage of correct responses (73.1 percent) was for Question 15 in the "Markets, Supply and Demand" subcategory. Question 21 from the "Competition and Market Structure" subcategory had the lowest percentage of correct responses (19.7 percent).

The "(C) Microeconomics: Resource Allocation and Income Distribution" category included the question which had the second highest percentage of correct responses by students across all categories measured by the TEL.

Table 15

Number and Percentage of Correct Responses to Questions
in the Test of Economic Literacy Related to Content
Category B: Economic Systems
N=1,506

Test Questions and Correct Responses	Number of Correct Responses	Percent of Correct Responses
<u>Nature and Types of Economic Systems</u>		
4. Which of the following questions is faced by <u>all</u> economic systems (i.e., tradition, command and market)?	874	58.0
What goods and services will be produced?		
6. Which of the following is the <u>most</u> essential for a market economy?	697	46.3
Active competition in the marketplace.		
<u>Economic Incentives:</u>		
5. In a market economy, the purpose of profits is to:	840	55.8
persuade businesses to produce what consumers demand.		
<u>Specialization, Comparative Advantage and Division of Labor:</u>		
7. Specialization and exchange within a nation or between nations is likely to have which of the following effects?	608	40.4
More goods and services can be produced.		

Table 15 (Cont.)

Test Questions and Correct Responses	Number of Correct Responses	Percent of Correct Responses
<u>Voluntary Exchange:</u>		
8. Within a market economy a coastal state harvests a great quantity of fish; an inland state has a pro-ductive beef cattle in-dustry. If exchanges of fish and beef take place between these states: both states gain.	827	54.9
<u>Government Intervention and Regulation:</u>		
9. Suppose a large city is investigating the elimination of rent controls on housing at a time when the vacancy rate is extremely low--only 1% of all apartments in the city are vacant. Which of the following is most likely to occur if rent controls are eliminated? An increase in rents, perhaps followed later by an increase in the supply of housing.	675	44.8

Table 16

Number and Percentage of Correct Responses to Questions in
the Test of Economic Literacy Related to Content
Category C: Microeconomics: Resource
Allocation and Income Distribution
N=1,506

Test Questions and Correct Responses	Number of Correct Responses	Percent of Correct Responses
<u>Income Distribution and Govern- ment Redistribution:</u>		
10. Of the following which is the most general cause of low indi- vidual incomes in the United States?	352	23.4
Lack of valuable productive services to sell.		
18. The tax in the table above is a:	410	27.2
progressive income tax.		
<u>Markets, Supply and Demand:</u>		
11. The demand for a factor of production depends largely on:	743	49.3
the demand for the product or products which it helps produce.		
14. Teen Power, a teenage organiza- tion, proposed that the minimum wage for teens should be in- creased. What effect would this increase most likely have on teen wages and employment in a market economy?	785	52.1
Wage rates would go up and teen employment would go down.		

Table 16. (Cont.)

	Test Questions and Correct Responses	Number of Correct Responses	Percent of Correct Responses
<u>Markets, Supply and Demand:</u> (Cont.)			
15.	According to the "law of supply and demand," if twice as many heads of lettuce were grown this year because of good weather as were grown last year: the price of lettuce would go down this year.	1,101	73.1
<u>Competition and Market Structure:</u>			
12.	In a market economy, the public interest is served even when individuals pursue their own private economic goals, because of: the operation of competitive markets.	473	31.4
20.	You read the following headline: "COFFEE GROWERS FORM MONOPOLY." How will the new coffee monopoly most likely differ from a highly competitive coffee growing industry. There will be less incentive for the coffee growers to be efficient.	415	27.6
21.	If you saw a newspaper headline that read, "ACME WIDGET CORPORATION RAISES PRICES: REST OF WIDGET INDUSTRY EXPECTED TO FOLLOW," you would know that Acme Widget Corporation was most likely to be in an industry with: few sellers.	296	19.7

Table 16. (Cont.)

	Test Questions and Correct Responses	Number of Correct Responses	Percent of Correct Responses
	<u>"Market Failures:" Information Costs, Resource Immobility, Externalities, etc.</u>		
13.	If consumers are to exercise their freedom of choice wisely in a market economy, they must: know the prices of alternative products available.	920	61.1
23.	It is highly unlikely that private business firms would build and operate the plants and sell their services direct- ly to individual residents of the Central City Area because: (A story was provided for Questions 23 and 24.) it would probably be impos- sible to provide smog-free air to those who are willing to pay for it while withholding it from those who refuse to pay.	549	36.5
24.	Suppose that the government of Central City were to build and operate the air-purifi- cation plants. From the stand- point of achieving efficiency in the allocation of economic resources, which of the follow- ing taxes should be increased to provide the additional tax revenues needed to finance the operation of the air-purifi- cation plants? Motor vehicle fuel	486	32.3

Table 16. (Cont.)

Test Questions and Correct Responses	Number of Correct Responses	Percent of Correct Responses
<u>The Price Mechanism:</u>		
16. The price of shoes is likely to be increased by: a decrease in the supply of shoes.	611	40.6
17. Assume that the demand increases for bread produced by many competitive firms. The resulting rise in the price of bread will usually lead to: more being produced.	605	40.2
22. The supply of a product increases at the same time the demand for it falls. In the absence of other changes its price: will fall.	762	50.6

Table 17 reveals the number and percentage of correct responses by students to the questions relating to the "(D) Macroeconomics: Economic Stability and Growth" subcategory. The highest percentage of correct responses (52.6 percent) was for Question 25 in the "Aggregate Demand: Unemployment and Inflation" subcategory. Question 30 in the "Real and Money Income: Price Level Changes" subcategory had the lowest percentage of correct responses (15.0 percent).

Table 17

Number and Percentage of Correct Responses to Questions
in the Test of Economic Literacy Related to Content
Category D: Macroeconomics: Economic
Stability and Growth
N=1,506

Test Questions and Correct Responses	Number of Correct Responses	Percent of Correct Responses
<u>Aggregate Demand: Unemployment and Inflation:</u>		
25. The total output of the economy is bought by which of the following three large groups of spenders?	792	52.6
Consumers, business firms, and governments.		
38. Often an economy operates at less than full employment. This is most likely to occur:	391	26.0
when total spending is inadequate.		
39. If total demand declines rela- tive to the productive capa- city of the economy, which of the following is likely to occur?	463	30.7
A slower growth rate.		
<u>Real and Money Income: Price Level Changes:</u>		
26. The best single measure of the total economic output in the United States is the:	724	48.1
gross national product.		

Table 17. (Cont.)

	Test Questions and Correct Responses	Number of Correct Responses	Percent of Correct Responses
<u>Real and Money Income:</u>			
<u>Price Level Changes: (Cont.)</u>			
27.	Parkland had both rising un-employment and a high rate of inflation during which period? (Graphs were provided for Questions 27, 28 and 29.) Years 4-5.	790	52.5
28.	Parkland had an increase in output with a relatively low inflation rate during which period? Years 3-4.	532	35.3
30.	Which of the following groups is typically hurt the most by unexpected inflation? Lenders.	226	15.0
42.	Which of the following four statistics is generally accepted as the best measure of the economic growth of a nation? Real income per capita.	295	19.6
<u>Money and Monetary Policy:</u>			
31.	The commercial banking system creates money when banks: extend loans to the public.	673	44.7

Table 17. (Cont.)

	Test Questions and Correct Responses	Number of Correct Responses	Percent of Correct Responses
<u>Money and Monetary Policy:</u> (Cont.)			
32.	The functions of money are to serve as: a unit of account, a medium of exchange, and a store of value.	657	43.6
34.	The Federal Reserve Board generally tries to increase the money supply when it wants to: fight unemployment.	288	19.1
<u>Aggregate Supply and Productive Capacity:</u>			
33.	The limit of an economy's real output at any time is set by: the quantity and quality of labor, capital, and natural resources.	423	28.1
<u>Economic Growth:</u>			
35.	To experience economic growth a developing country must: increase investment	438	29.1
<u>Saving, Investment, and Productivity:</u>			
36.	In a market economy high wages depend largely upon: high output per worker.	609	40.4

Table 17. (Cont.)

	Test Questions and Correct Responses	Number of Correct Responses	Percent of Correct Responses
<u>Fiscal Policy: Taxes, Expenditures, and Transfers:</u>			
37.	Increasing the federal budget surplus is more desirable in a period of: inflation.	370	24.6
40.	If, when there is full employment the federal government increases its spending without increasing its tax revenues, generally: inflation will occur.	464	30.8
41.	Increased taxation is the preferred method of financing government spending when: the economy is experiencing inflation.	445	29.5

The "(D) Macroeconomics: Economic Stability and Growth" category included an unusual number of questions with low percentages of correct responses by the students when compared across the seven content categories.

The content categories examined in Table 18 through 20 reflect the type of factual knowledge usually required to gain a fuller understanding of economic issues. They include statistical concepts which measure and explain economic performance and the effect of various economic policies (Hansen, 1977, p. 7).

Table 18 provides the number and percentage of correct responses by the students relating to the "(E) The World Economy" content category. Question 43, the only question in the "International Economics" subcategory, had correct responses by 24.5 percent of the students.

Table 18

Number and Percentage of Correct Responses to the Question in
the Test of Economic Literacy Related to
Content Category E: The World Economy
N=1,506

Test Question and Correct Response	Number of Correct Responses	Percent of Correct Responses
<u>International Economics:</u>		
43. For most nations, the reduction of tariffs would probably: force some workers out of jobs in protected industries.	369	24.5

Table 19 lists the number and percentage of correct responses by the students pertaining to "(F) Economic Institutions" content category. The higher percentage of correct responses (32.6 percent) was for Question 45. Question 44 had the lower percentage of correct responses (23.2 percent).

Table 19

Number and Percentage of Correct Responses to Questions
in the Test of Economic Literacy Related to
Content Category F: Economic Institutions
N=1,506

Test Questions and Correct Responses	Number of Correct Responses	Percent of Correct Responses
44. One advantage of the corporate form of business organizations is that: stockholders have limited liability.	350	23.2
46. Labor unions in the United States: strengthened the bargaining position of unionized workers in relation to their employers.	491	32.6

Table 20 reveals the number and percentage of correct responses by the students relating to the "(G) Concepts for Evaluating Economic Actions and Policies" content category. The highest percentage of correct responses (30.8 percent) was for Question 40. Question 37 had the lowest percentage of correct responses (24.6 percent).

Less than one-third of the students correctly answered any of the questions for the last three categories discussed (E, F, and G). The percentage of correct responses ranged from 32.6 percent to 12.5 percent.

Table 20

Number and Percentage of Correct Responses to Questions
in the Test of Economic Literacy Related to Content
Category G: Concepts for Evaluating
Actions and Policies
N=1,506

	Test Questions and Correct Responses	Number of Correct Responses	Percent of Correct Responses
29.	What is the economic situation and the most appropriate monetary and fiscal policies during years 1-2? The economy is in a recession; a budget deficit and/or easy money policy is needed.	439	29.2
45.	A national system of free medical care for the aged poor is established. The system is paid for by an increase in the income tax. These actions promote one economic goal, but work against another. Specifically, these actions are likely to: reduce freedom but promote equity.	189	12.5

To summarize Question 5, among the seven content categories, students scored best on questions relative to category "(B) Economic Systems," followed by "(C) Microeconomics: Resource Allocation Income Distribution," "(A) The Basic Economic Problem," "(D) Macroeconomics: Economic Stability and Growth," "(F) Economic Institutions," "(E) The World Economy," and "(G) Concepts for Evaluating Economic Actions and Policies."

Research Question 6

In which cognitive levels are students the strongest and weakest as evidenced by their achievement on questions from the Test of Economic Literacy (TEL) designed to measure those levels? The five cognitive levels are:

- I. Knowledge
- II. Comprehension
- III. Application
- IV. Analysis
- V. Evaluation

Table 21 summarizes the students' achievement in each of the five cognitive levels measured in the TEL. The level within which students correctly answered the highest percentage of questions (that is, their strongest cognitive level) was "(III) Application." For this level, 42.7 percent of the responses to questions were correct. The level for which the students correctly answered the lowest percentage of questions was "(G) Evaluation." Only 26.0 percent of the questions were correctly answered by the students.

Table 21

Percentage of Correct Responses to the Test
of Economic Literacy as Related to the
 Five Cognitive Levels
 N=1,506

Category Letter and Cognitive Levels	Average Percent of Correct Responses
III Application	42.7
I Knowledge	39.7
IV Analysis	35.3
II Comprehension	34.6
V Evaluation	26.0

Table 21 provided the percentage of correct responses by students for each of the five cognitive levels. Tables 22 through 30 (pages 107 through 125), reveal the number and percentage of correct responses by students for specific questions within each of the five cognitive levels.

Table 22 indicates the number and percentage of students' correct responses to ten questions which measured the "(I) Knowledge" level. The highest percentage of correct responses (58.0 percent) was for Question 4. Question 30 had the lowest percentage (15 percent) of correct responses.

Table 23, page 109, presents the number and percentage of students' correct responses pertaining to twelve questions which measured the "(II) Comprehension" level. The highest percentage of correct responses (61.1 percent) was for Question 13. Question 1 had the lowest percentage

Table 22

Number and Percentage of Correct Responses to Questions
in the Test of Economic Literacy as Related
to Cognitive Level I: Knowledge
N=1,506

Test Questions and Correct Responses	Number of Correct Responses	Percent of Correct Responses
4. Which of the following questions is faced by all economics systems (i.e., tradition, command and market)? What goods and services will be produced?	874	58.0
5. In a market economy, the purpose of profits is to: persuade businesses to produce what consumers demand.	840	55.8
10. Of the following which is the most general cause of low individual incomes in the United States? Lack of valuable productive services to sell.	352	23.4
25. The total output of the economy is bought by which of the following three large groups of spenders? Consumers, business firms, and governments.	792	52.6
26. The best single measure of the total economic output in the United States is the: gross national product.	724	48.1
30. Which of the following groups is typically hurt the most by unexpected inflation? Lenders.	226	15.0

Table 22. (Cont.)

Test Questions and Correct Responses	Number of Correct Responses	Percent of Correct Responses
31. The commercial banking system creates money when banks: extend loans to the public.	673	44.7
32. The functions of money are to serve as: a unit of account, a medium of exchange, and a store of value.	657	43.6
44. One advantage of the corporate form of business organization is that: stockholders have limited liability.	350	23.2
46. Labor unions in the United States have: strengthened the bargaining position of unionized workers in relation to their employers.	491	32.6

Table 23

Number and Percentage of Correct Responses to Questions
in the Test of Economic Literacy Related
to Cognitive Level II: Comprehension
N=1,506

Test Questions and Correct Responses	Number of Correct Responses	Percent of Correct Responses
1. Three major factors of production are land, labor, and capital. Which of the following groups best illustrates these factors? Iron ore, clerks, and trucks.	40	2.7
2. What is meant by the statement that every economic system (such as tradition, command, or market economy) faces the fact of scarcity? There are not enough productive resources to satisfy all wants of a society.	648	43.0
6. Which of the following is the <u>most</u> essential for a market economy? Active competition in the marketplace.	697	46.3
7. Specialization and exchange within a nation or between nations is likely to have which of the following effects? More goods and services can be produced.	608	40.4
11. The demand for a factor of production depends largely on: the demand for the product or products which it helps produce.	743	49.3

Table 23. (Cont.)

	Test Questions and Correct Responses	Number of Correct Responses	Percent of Correct Responses
12.	In a market economy, the public interest is served even when individuals pursue their own economic goals, because of: the operation of competitive markets.	473	31.4
13.	If consumers are to exercise their freedom of choice wisely in a market economy, they must: know the prices of alternative products available.	920	61.1
33.	The limit of an economy's real output at any time is set by: the quantity and quality of labor, capital, and natural resources.	423	28.1
34.	The Federal Reserve Board generally tries to increase the money supply when it wants to: fight unemployment.	288	19.1
35.	To experience economic growth a developing country must: increase investment.	438	29.1
36.	In a market economy high wages depend largely upon: high output per worker.	609	40.4
43.	For most nations, the reduction of tariffs would probably: force some workers out of jobs in protected industries.	369	24.5

of correct responses (2.7 percent) for this level and when compared across all other cognitive levels.

Table 24 lists the number and percentage of students' correct responses relating to eleven questions which measured the "(III) Application" level. The highest percentage of correct responses (77.6 percent) was for Question 19. Question 3 had the lowest percentage of correct responses (14.1 percent). Test Questions 19 and 15, respectively, had the highest and second highest percentage of correct responses by the students across all cognitive levels.

Table 25, page 115, reveals the number and percentage of students' correct responses to eight questions which measured the "(IV) Analysis" level. The highest percentage of correct responses (52.5 percent) by the students was for Question 27. Question 38 had the lowest percentage of correct responses (26.0 percent).

Table 26, page 117, indicates the number and percentage of students' correct responses to five questions which measured the "(V) Evaluation" level. The highest percentage of correct responses (36.5 percent) was for Question 23. Question 45 had the lowest percentage of correct responses (12.5 percent).

Level "(V) Evaluation" had the narrowest range of correct responses by the students across all of the cognitive levels.

Table 24

Number and Percentage of Correct Responses to Questions
in the Test of Economic Literacy Related
to Cognitive Level III: Application
N=1,506

Test Questions and Correct Responses	Number of Correct Responses	Percent of Correct Responses
3. The opportunity cost of a new public high school is the: other desirable economic goods that must be given up to build the school.	212	14.1
8. Within a market economy a coastal state harvests a great quantity of fish; an inland state has a productive beef cattle industry. If exchanges of fish and beef take place between these states: both states gain.	827	54.9
9. Suppose a large city is investigating the elimination of rent controls on housing at a time when the vacancy rate is extremely low--only 1% of all apartments in the city are vacant. Which of the following is most likely to occur if rent controls are eliminated? An increase in rents, perhaps followed later by an increase in the supply of housing.	675	44.8

Table 24. (Cont.)

	Test Questions and Correct Responses	Number of Correct Responses	Percent of Correct Responses
14.	<p>Teen Power, a teenage organization, proposed that the minimum wage for teens should be increased. What effect would this increase most likely have on teen wages and employment in a market economy?</p> <p>Wage rates would go up and teen employment would go down.</p>	785	52.1
15.	<p>According to the "law of supply and demand," if twice as many heads of lettuce were grown this year because of good weather as were grown last year:</p> <p>the price of lettuce would go down this year.</p>	1,101	73.1
16.	<p>The price of shoes is likely to be increased by:</p> <p>a decrease in the supply of shoes.</p>	611	40.6
17.	<p>Assume that the demand increases for bread produced by many competitive firms. The resulting rise in the price of bread will usually lead to:</p> <p>more being produced.</p>	605	40.2
19.	<p>Using the information in the table above, we know that as income increases the <u>rate</u> of taxation:</p> <p>increases and the amount of tax increases.</p>	1,168	77.6

Table 24. (Cont.)

	Test Questions and Correct Responses	Number of Correct Responses	Percent of Correct Responses
20.	<p>You read the following headline: "COFFEE GROWERS FORM MONOPOLY." How will the new coffee monopoly most likely differ from a highly competitive coffee growing industry.</p> <p>There will be less incentive for the coffee growers to be efficient.</p>	415	27.6
21.	<p>If you saw a newspaper headline that read, "ACME WIDGET CORPORA- TION RAISES PRICES: REST OF WIDGET INDUSTRY EXPECTED TO FOLLOW," you would know that Acme Widget Corporation was most likely to be in an industry with:</p> <p>few sellers.</p>	296	19.7
37.	<p>Increasing the federal budget surplus is more desirable in a period of:</p> <p>inflation.</p>	370	24.6

Table 25

Number and Percentage of Correct Responses to Questions
in the Test of Economic Literacy as Related
to Cognitive Level IV: Analysis
N=1,506

Test Questions and Correct Responses	Number of Correct Responses	Percent of Correct Responses
18. The tax in the table above is a: progressive income tax.	410	27.2
22. The supply of a product in- creases at the same time the demand for it falls. In the absence of other changes its price: will fall.	762	50.6
27. Parkland had both rising unem- ployment and a high rate of inflation during which period? (Graphs were provided for questions 27, 28 and 29.) Years 4-5.	790	52.5
28. Parkland had an increase in output with a relatively low inflation rate during which period? Years 3-4.	532	35.3
38. Often an economy operates at less than full employment. This is most likely to occur: when total spending is inade- quate.	391	26.0
39. If total demand declines rela- tive to the productive capacity of the economy, which of the following is likely to occur? A slower growth rate.	463	30.7

Table 25. (Cont.)

Test Questions and Correct Responses	Number of Correct Responses	Percent of Correct Responses
40. If, when there is full employment, the federal government increases its spending without increasing its tax revenues, generally: inflation will occur.	464	30.8
41. Increased taxation is the preferred method of financing government spending when: the economy is experiencing inflation.	445	29.5

Table 26

Number and Percentage of Correct Responses to Questions
in the Test of Economic Literacy as Related
to Cognitive Level V: Evaluation
N=1,506

Test Questions and Correct Responses	Number of Correct Responses	Percent of Correct Responses
<p>23. It is highly unlikely that private business firms would build and operate the plants and sell their services directly to individual residents of the Central City Area because: (A story was provided for questions 23 and 24.)</p> <p>it would probably be impossible to provide smog-free air to those who are willing to pay for it while withholding it from those who refuse to pay.</p>	549	36.5
<p>24. Suppose that the government of Central City were to build and operate the air-purification plants. From the standpoint of achieving efficiency in the allocation of economic resources, which of the following taxes should be increased to provide the additional tax revenues needed to finance the operation of the air-purification plants?</p> <p>Motor vehicle fuel.</p>	486	32.3
<p>29. What is the economic situation and the most appropriate monetary and fiscal policies during years 1-2?</p> <p>The economy is in a recession; a budget deficit and/or easy money policy is needed.</p>	439	29.2

Table 26. (Cont.)

Test Questions and Correct Responses	Number of Correct Responses	Percent of Correct Responses
42. Which of the following four statistics is generally accepted as the best measure of the economic growth of a nation? Real income per capita.	295	19.6
45. A national system of free medical care for the aged poor is established. The system is paid for by an increase in the income tax. These actions promote one economic goal, but work against another. Specifically, these actions are likely to: reduce freedom but promote equity.	189	12.5

In summary of Question 6, among the five cognitive levels, students scored best on questions relating to level "(III) Application," followed by "(I) Knowledge," "(IV) Analysis," "(II) Comprehension," and "(V) Evaluation."

Research Question 7

Is the average percentage of correct responses, within content categories and for cognitive levels, significantly different across the four classifications of schools represented in the present study?

Tables 27 and 29 provide the analyses of variance used to identify differences between the four classifications of schools for content categories and cognitive levels in the TEL; Tables 28 and 30 display the average percentage of the students' correct responses to the TEL questions related to content categories and cognitive levels.

Table 27 shows the analyses of variance for the seven content categories which were used to identify any potential statistically significant differences between Class A, B, C, and secondary area vocational education center schools. A family alpha level of 0.05 was used for all of the analyses; no statistically significant differences were found.

Table 28, page 122, presents the percentage of correct responses by the students to the test questions for the seven content categories as distributed among Class A, B, C, and secondary area vocational education center schools. The highest percentage of correct responses (51.6 percent) was in the "(B) Economic Systems" content category by students from Class C schools. The lowest percentage of correct responses (15.0 percent) was in the "(G) Concepts for Evaluating Economic Actions and Policies" category by the students from secondary area vocational education centers.

Table 27

Analyses of Variance for the Seven Content Categories Included
in the TEL Items between Class A, B, C, and Secondary
Area Vocational Center Schools
N=1,506

Content Category		Sum of Squares	Degrees of Freedom	Mean Square	F	P
A The Basic Economic Problem	Between Groups	1.5	3	.5	.8	NS
	Within Groups	<u>908.8</u>	<u>1502</u>	.6		
	Total	910.3	1505			
B Economic Systems	Between Groups	9.1	3	3.0	1.6	NS
	Within Groups	<u>2,837.9</u>	<u>1502</u>	1.9		
	Total	2,847.0	1505			
C Microeconomics: Resource Allocation and Income Distribution	Between Groups	39.7	3	13.2	2.6	NS
	Within Groups	<u>7,623.2</u>	<u>1502</u>	5.1		
	Total	7,662.9	1505			

Table 27. (Cont.)

Content Category		Sum of Squares	Degrees of Freedom	Mean Square	F	P
D Macroeconomics: Economic Stability and Growth						
	Between Groups	19.6	3	6.6	1.4	NS
	Within Groups	<u>6,850.3</u>	<u>1502</u>	4.6		
	Total	6,869.9	1505			
E The World Economy						
	Between Groups	.6	3	.2	1.0	NS
	Within Groups	<u>278.0</u>	<u>1502</u>	.2		
	Total	278.6	1505			
F Economic Institutions						
	Between Groups	1.1	3	.4	1.0	NS
	Within Groups	<u>592.2</u>	<u>1502</u>	.4		
	Total	593.3	1505			
G Concepts for Evaluating Economic Actions and Policies						
	Between Groups	2.4	3	.8	2.5	NS
	Within Groups	<u>485.7</u>	<u>1502</u>	.3		
	Total	488.1	1505			

Table 28

Percentage of Correct Responses to the 46 TEL Questions for Seven
Content Categories as a Function of Class A, B, C, and
Secondary Area Vocational Education Center School
Classifications

Content Categories	Number of Questions In Category (N=46)	<u>Class A</u> Average Percent Correct (N=713)	<u>Class B</u> Average Percent Correct (N=148)	<u>Class C</u> Average Percent Correct (N=348)	<u>Area Centers</u> Average Percent Correct (N=297)
A The Basic Economic Problem	4	32.5	35.0	35.0	35.0
B Economic Systems	6	50.0	50.0	51.6	48.3
C Microeconomics: Resource Allo- cation and Income Distribution	14	40.0	39.2	42.1	38.5
D Macroeconomics: Economic Stability and Growth	17	32.9	33.5	34.1	34.1
E The World Economy	1	20.0	20.0	20.0	30.0
F Economic Institutions	2	30.0	25.0	30.0	25.0
G Concepts for Evalu- ating Economic Actions and Policies	2	20.0	20.0	25.0	15.0

Table 29 provides the analyses of variance for each of the five cognitive levels which were used to identify any potential statistically significant differences between Class A, B, C, and secondary area vocational education center schools. A family alpha level of 0.05 was used for all of the analyses, and the only difference found was between Class C schools and secondary area vocational education center schools for the "(V) Evaluation" level ($F = 3.483$, $p. < 0.0176$).

Table 30, page 125, reveals the percentage of correct responses to the test questions for the five cognitive levels as divided into Class A, B, C, and secondary area vocational education center schools. Class D schools were not considered in this study. Students from Class C schools had the highest percentage of correct responses (43.6 percent) to questions from the "(III) Application" level. The lowest percentage of correct responses (24 percent) to questions was from the "(V) Evaluation" level by the secondary area vocational center students. The percentage of correct responses for questions answered by the students followed the same rank order for all school classifications.

Table 29

Analyses of Variance for the Five Cognitive Levels Included in
the TEL Items between Class A, B, C, and Secondary Area
Vocational Center Schools
N=1,506

Cognitive Levels		Sum of Squares	Degrees of Freedom	Mean Square	F	P
I Knowledge	Between Groups	15.5	3	5.2	1.3	NS
	Within Groups	<u>3,736.2</u>	<u>1502</u>	2.5		
	Total	3,751.7	1505			
II Comprehension	Between Groups	11.3	3	3.8	1.2	NS
	Within Groups	<u>4,846.9</u>	<u>1502</u>	3.2		
	Total	4,858.2	1505			
III Application	Between Groups	4.9	3	1.6	.5	NS
	Within Groups	<u>4,676.5</u>	<u>1502</u>	3.1		
	Total	4,681.4	1505			
IV Analysis	Between Groups	6.5	3	2.2	1.0	NS
	Within Groups	<u>3,173.3</u>	<u>1502</u>	2.1		
	Total	3,179.8	1505			
V Evaluation	Between Groups	10.2	3	3.4	3.4	.017
	Within Groups	<u>1,506.1</u>	<u>1502</u>	1.0		
	Total	1,516.3	1505			

Table 30

Percentage of Correct Responses to the 46 TEL Questions for Five
Cognitive Levels as a Function of Class A, B, C, and Secondary
Area Vocational Education Center School Classifications

Cognitive Levels	Number of Questions In Category (N=46)	<u>Class A</u>	<u>Class B</u>	<u>Class C</u>	<u>Area Centers</u>
		Average Percent Correct (N=713)	Average Percent Correct (N=148)	Average Percent Correct (N=348)	Average Percent Correct (N=297)
I Knowledge	10	39.0	39.0	41.0	40.0
II Comprehension	12	34.2	35.0	35.8	34.2
III Application	11	42.7	41.8	43.6	42.7
IV Analysis	8	35.0	35.0	36.2	35.0
V Evaluation	5	26.0	26.0	28.0	24.0

CHAPTER 5

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Findings, conclusions, and recommendations are presented in this chapter.

Summary of Problem and Procedures

Since the 1950s the business education profession has made consistent progress toward integrating economic concepts into its curriculum. A goal of the profession and supporting organizations has been to increase the economic literacy level of young people. In 1969 the Policies Commission for Business and Economic Education (PCBEE) published a statement reporting a concern for developing an understanding of economics.

The intent of this descriptive study was to provide business education teachers, educators, and state department personnel with information about business education students' understanding of and cognitive achievement in basic economic concepts. In 1979 the Joint Council on Economic Education (JCEE) copyrighted the Test of Economic Literacy (TEL). It was administered in 1977 to secondary school students nationwide. The TEL was used for this study as the instrument to measure selected Michigan business education students' understanding of economics.

Problem

The major problem of this study was to assess the economic knowledge of selected Michigan business education students at the secondary level. The economic literacy status of the students' knowledge was to be measured by using the Test of Economic Literacy. Each question in the test was categorized by a content category and a cognitive level (Appendices D and E). Demographic and related data were also collected.

Procedures

The population for this study was 1,506 students enrolled in courses taught by Vocational Office Block (VOB) project teachers. They were selected because of their availability and expressed interest in improving business education in general. At least 90 percent of these students' classes were part of a secondary vocational business and office education program funded through the Vocational-Technical Education Service (V-TES). Testing occurred in four classifications of secondary schools: Class A, B, C, and secondary area vocational education center schools. Class D schools were not part of this study because none of the VOB participating teachers were from schools with a student enrollment of less than 349.

The testing instrument, the Test of Economic Literacy Form A, consisted of 46 questions sorted into five cognitive levels and seven content categories (Appendices D and E). Another instrument, a questionnaire for the

students, solicited demographic data on personal, family, and school background. A questionnaire for completion by the teachers administering the test requested data on population, school classification, and related information (Appendix B).

The correspondence relevant to this study is included in Appendices A and B. The first letter and a reply card were mailed to 98 teachers on April 12, 1981. A second letter and card were mailed on April 20, 1981, to teachers who did not respond. Packets were mailed on April 28, 1981, to 53 teachers who agreed to participate. Each packet contained a cover letter, instructions, teacher survey questionnaire sheet, student survey questionnaire sheets, instruction sheet for test, test booklets, score sheets, number 2 pencils for each respondent, and a stamped addressed return envelope. In addition, a telephone number was provided for questions or comments. On June 8 and June 10 follow-up telephone calls were made to teachers who had not returned the packets. Fifty-three teachers from Michigan secondary schools administered the instruments to 1,506 participating students between May 7 and June 10, 1981.

The data were entered onto the Michigan State University Cyber 10 computing system and analyzed by the Statistical Package for the Social Sciences (SPSS) program. Frequency distributions and descriptive statistics were computed. No attempt at randomness was made in the study, thus limiting its generalizations. Analyses of variance and

Scheffé's post hoc multiple comparison test were used to evaluate the hypotheses for research Question 7.

Findings

The data used in this study were compiled from the responses of 1,506 selected Michigan business education students. Each of them responded to a questionnaire and took a 40-minute Test of Economic Literacy. Each of the 53 teachers who administered the instruments also completed a questionnaire. Information from the questionnaires revealed demographic and related data about the students; the test measured economic knowledge.

The following is a summary of findings relating to the specific questions posed in this descriptive study. (Percentages may be rounded.)

Research Question 1

What is the composite profile of the students who were tested for current economic knowledge: sex; age; grade; parents' or guardians' educational background, occupational area, and income level; and classification of secondary school?

To summarize the students' profiles the findings for Question 1 are highlighted in outline form as follows.

Highlights of Student Profile

SEX, AGE, GRADE

Sex: 95% female (4.5% male)
Age: 69% 17 or 18 years old
Grade: 99% 11th (37%) and 12th grade (62%)

EDUCATIONAL LEVEL OF PARENTS OR GUARDIANS

Father: 40% high school graduates
29% less than high school diploma
28% more than high school status
Mother: 54% high school graduates
24% less than high school diploma
21% more than high school status

OCCUPATIONAL AREA OF PARENTS OR GUARDIANS

Father: 45% crafts, foremen, operatives
21% "other" (management, self-employment, government)
Mother: 34% homemaker
20% clerical
16% "other" (self-employment, management, computer operations)

INCOME LEVEL OF FAMILY (YEARLY)

Unknown 52% plus 2.5% "Blank"
\$20,000+ 30% over \$20,000
\$20,000- 16% under \$19,000

CLASSIFICATION OF SCHOOL

Class A: 47% enrollment of 1,344+

Class B: 10% enrollment of 676-1,343

Class C: 23% enrollment of 349-675

Centers: 20% area vocational education centers

Research Question 2

What was the composite profile of the students who were tested in terms of a previous economics course and/or related courses? Examples of related courses are basic business, marketing, and consumer.

The findings indicate that 437 (29.0 percent) of the 1,506 students had taken an economics course. An additional 183 (12.2 percent) indicated they would be taking an economics course before graduating from high school. In the questionnaire it was stated that "An ECONOMICS course is a course with a major focus on economics at least six weeks in length and taken in grades 8, 9, 10, 11, or 12."

The findings reveal that 874 (58.0 percent) of the students had taken a basic business course, 272 (18.1 percent) had taken a consumer course, and 133 (8.8 percent) had taken a marketing course. Students could have taken none or any combination of the course areas listed.

Research Question 3

Is an economics course offered and required at the schools where the students were tested?

Among the 26 Class A schools, 21 (81 percent) offered an "economics" course; only one school required it. Six (86 percent) of the seven Class B schools offered an "economics" course; only one school required it. Four of the twelve Class C schools offered an "economics" course; three required it. Class B had the highest percentage that required an "economics" course. Secondary area vocational education centers offer vocational programs at their training facilities and do not offer courses in "economics."

Research Question 4

To what extent do the teachers express an interest in attending workshops, seminars, or in-service programs to learn more about methods of integrating economic concepts into their courses?

Twenty-three (43 percent) of the 53 teachers who administered the test would like to attend workshops, seminars, or in-service programs either for credit or noncredit to learn more about methods of integrating economic concepts into their office education courses. Approximately one-third of the teachers responded they were undecided, and approximately 20 percent indicated no interest.

Research Question 5

Which of the seven content areas do students understand the most and the least as evidenced by their scores on the Test of Economic Literacy? The seven content categories are:

- A. The Basic Economic Problem
- B. Economic Systems
- C. Microeconomics: Resources Allocation and Income Distribution
- D. Macroeconomics: Economic Stability and Growth
- E. The World Economy
- F. Economic Institutions
- G. Concepts for Evaluating Economic Actions and Policies

The findings reveal that the content category within which students correctly answered the highest percentage of questions was "(B) Economic Systems." The category for which the students correctly answered the lowest percentage of questions was "(G) Concepts for Evaluating Economic Actions and Policies." The category among the first four categories in which the students correctly answered the lowest percentage of questions was "(D) Macroeconomics: Economic Stability and Growth."

The content categories and percentage of correct responses by the students to the TEL questions, listed from highest to lowest and as they relate one to another, are:

<u>Category</u>	<u>Percent</u>
B. Economic Systems	50.0
C. Microeconomics: Resource Allocation and Distribution	40.4
A. The Basic Economic Problem	34.4
D. Macroeconomics: Economic Stability and Growth	33.5
F. Economic Institutions	27.9

<u>Category</u>	<u>Percent</u>
E. The World Economy	24.5
G. Concepts for Evaluating Economic Actions and Policies	20.9

Specific questions within five of the seven content categories had high or low percentages of correct responses by the students as compared with the remaining questions. The four highest and the four lowest percentages of correct responses to these questions are combined and discussed with findings for research Question 6.

Research Question 6

In which cognitive levels are students the strongest and weakest as evidenced by their achievement on questions from the Test of Economic Literacy, which is designed to measure those levels? The five cognitive levels are:

- I. Knowledge
- II. Comprehension
- III. Application
- IV. Analysis
- V. Evaluation

The findings reveal that of the five cognitive levels the students had the greatest percentage of correct responses to questions at the third cognitive level, "(III) Application," followed by "(I) Knowledge," "(IV) Analysis," and "(II) Comprehension." The most complex cognitive level, "(V) Evaluation," was the students' weakest when compared with the other levels, with the least percentage of

questions correctly answered. The order of the cognitive levels within which the students correctly answered the highest to lowest percentage of questions (that is, strongest to weakest) as related to one another are:

<u>Level</u>	<u>Percent</u>
III. Application	42.7
I. Knowledge	39.7
IV. Analysis	35.3
II. Comprehension	34.6
V. Evaluation	26.0

Additional findings from research Questions 5 and 6 relate to eight specific items from the Test of Economic Literacy. Of the eight items listed below, four were questions with the highest percentage of correct responses by the students and four were questions with the lowest percentage of correct responses by the students.

Each of the eight TEL items are presented in the following order: content category and subcategory; cognitive level; percentage of correct responses; and test question and answer. The three incorrect choices to each test question are given in the TEL (Appendix B).

The four questions with the highest percentage of correct responses by the students are as follows.

(A) The Basic Economic Problem, Marginalism and Equilibrium, (III) Application, 77.6 percent. Question 19: Using the information in the table above, we know that as

income increases the rate of taxation (increases and the amount of tax increases).

(C) Microeconomics: Resource Allocation and Income Distribution, Markets, Supply and Demand, (III) Application, 73.1 percent. Question 15: According to the "law of supply and demand," if twice as many heads of lettuce were grown last year (the price of lettuce would go down this year).

(C) Microeconomics: Resource Allocation and Income Distribution, "Market Failures": Information Costs, Resource Immobility, Externalities, etc., (II) Comprehension, 61.1 percent. Question 13: If consumers are to exercise their freedom of choice wisely in the market economy, they must (know the prices of alternate products available).

(B) Economic Systems, Nature and Types of Economic Systems, (I) Knowledge, 58.0 percent. Question 4: Which of the following questions is faced by all economic systems (i.e., tradition, command and market)? (What goods and services will be produced?)

The four questions with the lowest percentage of correct responses by the students are as follows.

(A) The Basic Economic Problem, Productive Resources, (II) Comprehension, 2.7 percent. Question 1: Three major factors of production are land, labor, and capital. Which of the following groups best illustrates these factors? (Iron ore, clerks, and trucks.)

(G) Concepts for Evaluating Economic Actions and Policies, no subcategory, (V) Evaluation, 12.5 percent.

Question 45: A national system of free medical care for the aged poor is established. The system is paid for by an increase in income tax. These actions promote one economic goal, but work against another. Specifically these actions are likely to: (reduce freedom but promote equity).

(A) The Basic Economic Problem, Opportunity Costs and Trade-Offs, (III) Application, 14.1 percent. Question 3: The opportunity cost of a new public high school is the: (other desirable economic goods that must be given up to build the school).

(D) Macroeconomics: Economic Stability and Growth, Real and Money Income: Price Level Changes, (I) Knowledge, 15.0 percent. Question 30: Which of the following groups is typically hurt the most by unexpected inflation? (Lenders.)

Research Question 7

Is the average percentage of correct responses, within content categories and for cognitive levels, significantly different across the four classifications of schools represented in the present study?

Among schools no statistically significant differences were found in either the content categories or cognitive levels, except for the "(V) Evaluation" level. For these items, students in Class C schools scored higher than students in secondary area vocational education centers ($F = 3.483$, $p. < 0.0176$). A family alpha level of 0.05 was used for all of the analyses of variance.

Even though no statistically significant differences were found, the following points are highlighted because they may be of educational interest to some readers.

The students from Class C schools: (1) averaged the same or a slightly higher percentage of correct responses for the categories as compared across the school classifications, (2) averaged the highest percentage (51.6 percent) of correct responses from the "(B) Economic Systems" category as compared to the population's 50.0 percent, (3) averaged a higher percentage of correct responses for "(G) Concepts for Evaluating Economic Actions, and Policies" than for "(E) The World Economy" category, and (4) averaged the highest percentage (43 percent) of correct responses for the "(III) Application" level when compared with the population's 42.7 percent.

Also, the students from Class A schools averaged a slightly higher percentage of correct responses for the "(C) Macroeconomics: Economic Stability and Growth" category than for "(A) The Basic Economic Problem" category, and Class B students averaged the same for both the "(II) Comprehension and "(IV) Analysis" levels.

Conclusions

Based on the findings of this study, several conclusions may be drawn.

1. Assuming the content of the test is within the range of abilities of the students, and assuming the test

measures adequately the seven economic content categories, the students tested were not achieving as highly in any of the economic content categories as might be expected. Among the seven content categories, the students correctly answered the highest percentage (50.0 percent) of questions in the category of "(B) Economic Systems," and the lowest percentage (20.9 percent) of questions in the area of "(G) Concepts for Evaluating Economic Actions and Policies."

2. Assuming the content of the test is within the range of abilities of the students, and assuming the test measures adequately the five cognitive levels, the students tested were not achieving as highly as might be expected in any of the cognitive levels. Among the five cognitive levels which the test items were designed to measure, the students correctly answered the highest percentage (42.7 percent) of questions at the "(III) Application" level, and the lowest percentage (26.0 percent) of questions at the "(V) Evaluation" level.

3. Although students did better in three of the seven economic content categories, they were not predominately stronger in any one of those three; that is, of all the test items, the four with the highest percentage of correct responses were distributed among those three categories.

4. Although students did better in three of the five cognitive levels, they were not predominately stronger in any one of those three; that is, of all the test items,

the four with the highest percentage of correct responses were distributed among those three levels.

5. Although students were weaker in three of the seven economic content categories, they were not predominately weaker in any one of those three; that is, of all the test items, the four with the lowest percentage of correct responses were distributed among those three categories.

6. Although students were weaker in four of the five cognitive levels, they were not predominately weaker in any one of those four; that is, of all the test items, the four with the lowest percentage of correct responses were distributed among those four categories.

7. The classification of schools which the students attended made no difference in their economic understanding as measured by the TEL except at the "(V) Evaluation" level. On questions from that level, students in Class C schools scored significantly higher than did students from area vocational education center schools.

Recommendations

Based on the findings and conclusions of this study, a number of recommendations may be made.

1. Each school system should develop a long-range plan or review its existing plan with at least two objectives in mind: infuse economics into the kindergarten through twelfth grade curriculum, basing the program on local needs and making it consistent with the school's philosophy of education. Of the seven content categories,

the students correctly answered only half the questions in the content category they understood the most. If students could learn about economic concepts earlier in their education, perhaps their achievement tests would result in higher scores.

2. Curriculum committees should develop workable guidelines and systematic, effective approaches to ensure relevance, continuity, and consistency in integrating economic concepts into the business education curriculum. In comparison with the other categories, it appears that students are deficient in understanding concepts, particularly in areas such as microeconomics and economic stability and growth.

3. In-service education programs should include appropriate instructional strategies and methods which allow teachers to develop and evaluate curriculum materials that will be useful when integrating economic education into their business education courses. As evidenced by their scores, the students were weakest in the evaluative area. If the teaching and learning process can result in a better student understanding of economic concepts at higher cognitive levels, the test scores should gradually improve in all levels, including the evaluative level.

4. The content of pre-service methods courses should be periodically reviewed to ensure that methods are taught which make business education teachers better prepared to teach economics. If administrators expect

first-year teachers to have an economic education background, then students from all school classifications should benefit, and the result should be greatly increased economic understanding.

5. Vocational Office Block teachers with work experience in the business world, academic preparation in business education, and a block period of teaching time should accept the challenge to integrate economic concepts into their skills and related materials to raise their student's literacy in economics. Teachers could introduce specific concepts through the semester or year so that students could have the opportunity to understand the concepts at the knowledge through evaluation levels. In this study, the highest percentage of correct responses (42.7 percent) was at the "(III) Application" level, and the lowest (26.0 percent) was at the "(V) Evaluation" level.

6. Monies should be available from the state and federal government to ensure that vocational business education students have access to high quality instruction which prepares them to be gainfully employed as informed members in the world of work. The four questions with the highest percentage of correct responses by the students ranged from 58.0 percent to 77.6 percent. Given the funds for a sequenced pattern of learning, students could attain higher economic understanding.

7. Vocational business education teachers should include in their programs the knowledge and skills needed to

help students address economic problems and issues likely to be encountered in the business and office occupations.

8. Members of various business and economic education organizations should continue to support and re-emphasize the notion that having the ability to understand business and economic issues and problems is important for students who are seeking business and office occupation careers.

Recommendations for Further Study

Based on the findings, conclusions, and recommendations of this study, it is possible to suggest a number of topics for future studies.

1. Another assessment of students' understanding of basic economic concepts should be conducted once business education teachers, educators, or state department personnel are ready to draft and participate in a plan of action.

2. A study should be made to determine whether students or former students, after assuming their first business and office positions, have the opportunity to learn about economics relevant to understanding their workplace.

3. An investigation might identify the economic concepts most needed for vocational business education students about to start working at entry-level positions.

4. An examination of the structure and substance of the basic economic concepts taught from the kindergarten

through twelfth grade, including the business education area, would be useful.

5. Additional studies might determine which principles of economics are presently included in basic business courses, as these courses are the preferred choice of the business education students examined here.

6. Further research could examine how to attract teachers to in-service programs which train them to integrate economic concepts into their courses.

7. A series of studies might measure the effect of increased economics training for business education teachers on their students' performance in the classroom and subsequently in the workplace.

8. It would be useful to know how more effective curricula can be planned so that students will have the opportunity to acquire higher degrees of economic literacy. These efforts should include studying the effects on student learning within cooperating school districts that participate in the Developmental Economic Education Program (DEEP) following the Master Curriculum Guide Framework originated by the Joint Council on Economic Education.

9. An investigation to identify where resources may be obtained which can result in long-term, quality, district-wide programs to increase students' understanding of economics would be most helpful. Possible sources to investigate are the Association of Michigan Economic Education Centers, Michigan Business Education Association, Delta

Pi Epsilon, school boards, business and community organizations, the Michigan Department of Education, federal funding agencies, and foundations.

10. A study to determine whether business education students' understanding of the basic economic concepts is at the primary, intermediate, or advanced cluster level.

Brenneke (1981) describes the concept clusters and explains that primary concept clusters make up a core of economic knowledge which can be expanded and built upon with concepts found in the intermediate and advanced clusters (p. 8).

Implications

This study has a number of implications for business education at the secondary school level.

1. When compared with the results obtained from the nationally normed Test of Economic Literacy, the students examined here appeared to be the low end of the national study. In both studies, the percentage of correct responses was higher for the first four content categories than for the last three. If it is the case that concepts within the first four categories are fundamental to understanding the other concepts, then one might surmise that the last three categories would not have ranked as low if the students' mastery of the first four concepts had been stronger.

2. The students in this study had the highest percentage of correct responses to questions at the "(III) Application" cognitive level. Perhaps this was because they

had not formally learned or remembered facts and vocabulary, but had informally learned applications of economics from family, friends, workers, television programs, or reading--at home, school, or work. In addition, some knowledge and comprehension information may be implicit in the questions at the "(III) Application" level. Also, students were more able to analyze and break down information into parts and detect relationships than to understand and tell the information in their own words. It is possible that students are not studying economic concepts in school, are not studying them enough, are being presented with more of one concept than others, or are learning by rote.

3. Many of the teachers questioned in this study did not express an interest in attending workshops to help them integrate economic education into their courses. Ryckman (1981), to the contrary, found that Michigan business and office education teachers ranked "workshops, seminars, or conferences" as their first preference for an inservice format" (p. 94). Ryckman also found that teachers considered "performance tasks concerned with course planning and instruction" as important to them (p. 96). These findings might imply that once educators could get teachers interested, then workshops concerned with course planning or construction would be feasible. To effectively integrate economic concepts a personal commitment and cooperation is needed from the teachers, followed by enthusiastic and continuous involvement.

4. When more refined data are obtained to determine the economic concepts used most frequently in the business and office workplace, then that body of knowledges and skills should be integrated into the business education curriculum so that the students' economic deficiencies may be lessened, a higher level of economic literacy may be achieved, and gaps may be closed.

5. Perhaps if a long-range effort is made by school organizers to increase business education students' understanding of economics, it will provide an incentive to a greater percentage of male students to enroll in vocational business education programs, currently a nontraditional area for males.

Reflections

This study helped to assess business education students' understanding of basic economic concepts. These are considered essential for all students, including those who want to be effective in filling their present and/or future role in business and office occupations.

If the students' TEL scores had been the same or higher when compared with the nationally normed data, then this writer would not as urgently request that attention be directed toward integrating economic concepts into the curriculum. The process must begin with recognition by school districts and teachers of the need to improve economic education.

Resistance to changing teaching methods, materials, and curricular patterns is not a new phenomenon among teachers and is to be expected. The reasons are very valid, as teachers may react in much the same way as students when asked to manipulate content information in which they do not have a strong background.

Most teachers are not economics majors and may become embarrassed or angry if expected to produce results in a subject unfamiliar to them. If teachers are not knowledgeable or are insecure with a topic, they may avoid, skim, or delay learning or teaching its content. Some teachers may rote teach at the cognitive level of application, perhaps geared toward tests, rather than aim for knowledge and comprehension levels because either they are unfamiliar with the material or they believe students already have the basic terminology.

When teachers feel favorable about integrating economic concepts into their curriculum, specifically in the vocational business education area, diagnostic tools need to be provided to assess periodically what the student knows and subsequently learns. Teachers cannot do assumptive teaching; they must find out what the student knows about the concepts they plan to develop.

It must be remembered that students need to be taught concepts so that they are meaningful to them. The materials cannot be contrived. It must also be remembered that teachers must place a value on integrating economic

concepts into the curriculum if such an endeavor is to begin and be effective.

Teachers who are interested in improving their skills will become better teachers, and well-constructed materials will make their job easier. A difference should occur for teachers as well as students.

APPENDICES

APPENDIX A

MICHIGAN STATE UNIVERSITY

COLLEGE OF BUSINESS
DEPARTMENT OF BUSINESS LAW AND OFFICE ADMINISTRATION

EAST LANSING • MICHIGAN • 48824

As a former capstone teacher, I believe we have the ideal learning environment for integrating economics into the office education classroom. In a *Policies Commission for Business and Economic Education 1959-1979* document, it was stated that "business education, more than other fields, deals with the very things that economics is all about." Anne S. Daughtrey, author and business education leader, stresses the importance of including economic concepts in block and simulation programs because it is "vital to the preparation of students for office occupations in the future." Your help is needed in a study to assess the level of economic understanding of our business education students.

Your participation in this assessment is requested by administering a 40-minute *Test of Economic Literacy (TEL)* to your vocational office education class(es) on a date of your choice in the early part of May. You have been selected because you have demonstrated educational leadership as a Vocational Office Block (VOB) Project in-service participant. A packet will be provided including the instruments, pencils, and postage-paid return envelope.

I hope that you will be able to participate. As you know, the more scores included in the study, the more meaningful the study. The scores of your students will be combined with the scores of the other students. The names of your students, your name, and your school name will NOT be used as part of this study. YOU are the only person who will receive the scores of your class in relation to the total scores from the other VOB project participants in this study for use such as, information for curriculum planning, workshops, in-service projects, or professional development.

Please inform your principal about your plan to measure the economic background of your vocational office students because the principal will probably be interested in the results.

Please complete and return the enclosed postage-paid card by April 17 to receive the packet and general information.

Sincerely yours,

Annette Ryckman
Researcher


Ellis R. Thomas
Researcher's Advisor


Robert P. Poland
VOB Project Director

PLEASE RETURN THIS CARD

_____ YES - I will have the *Test of Economic Literacy (TEL)*
administered to my vocational office class/es.

_____ TOTAL NUMBER OF STUDENTS THAT WILL PARTICIPATE.

- - - - -

_____ NO - I am unable to participate at this time.

_____ Total number of students that could not participate.

Note: If your name, address, or zip code on the other side of this
card is incorrect, please make the correction.

INSTRUCTOR'S NAME _____

TELEPHONE NUMBER () _____ Ext. _____

PLEASE RETURN THIS CARD

_____ YES - I will have the *Test of Economic Literacy (TEL)*
administered to my vocational office class/es.

_____ TOTAL NUMBER OF STUDENTS THAT WILL PARTICIPATE.

_____ NO - I am unable to participate at this time.

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Note: If your name, address, or zip code on the other side of this
card is incorrect, please make the correction.

INSTRUCTOR'S NAME _____

TELEPHONE NUMBER () _____ Ext. _____

MICHIGAN STATE UNIVERSITY

COLLEGE OF BUSINESS
DEPARTMENT OF BUSINESS LAW AND OFFICE ADMINISTRATION

EAST LANSING • MICHIGAN • 48824

April 22, 1981

Enclosed is a copy of my letter which was mailed to you on April 10. Final plans are now being made to conduct this study. I have not heard from you. If you wish to participate, and I hope you will, please answer "yes" and indicate the number of participants on the enclosed card. If you cannot participate, please answer "no" and indicate the number of students in your class.

I sincerely believe, and I hope you will agree, that the results of this study will be of benefit to both of us.

Please mail the card so it will reach me by April 30. If you have any questions, you may call me at 517/353-8676 between the hours of 9 a.m. and 2 p.m.

I hope you and your students will be able to participate in this study.

Sincerely

Annette Ryckman

Enclosures

COPY

MICHIGAN STATE UNIVERSITY

COLLEGE OF BUSINESS
DEPARTMENT OF BUSINESS LAW AND OFFICE ADMINISTRATION

EAST LANSING • MICHIGAN • 48824

As a former capstone teacher, I believe we have the ideal learning environment for integrating economics into the office education classroom. In a *Policies Commission for Business and Economic Education 1959-1979* document, it was stated that "business education, more than other fields, deals with the very things that economics is all about." Anne S. Daughtrey, author and business education leader, stresses the importance of including economic concepts in block and simulation programs because it is "vital to the preparation of students for office occupations in the future." Your help is needed in a study to assess the level of economic understanding of our business education students.


Your participation in this assessment is requested by administering a 40-minute *Test of Economic Literacy (TEL)* to your vocational office education class(es) on a date of your choice in the early part of May. You have been selected because you have demonstrated educational leadership as a Vocational Office Block (VOB) Project in-service participant. A packet will be provided including the instruments, pencils, and postage-paid return envelope. }

I hope that you will be able to participate. As you know, the more scores included in the study, the more meaningful the study. The scores of your students will be combined with the scores of the other students. The names of your students, your name, and your school name will NOT be used as part of this study. YOU are the only person who will receive the scores of your class in relation to the total scores from the other VOB project participants in this study for use such as, information for curriculum planning, workshops, in-service projects, or professional development.

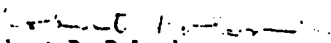
Please inform your principal about your plan to measure the economic background of your vocational office students because the principal will probably be interested in the results.

Please complete and return the enclosed postage-paid card by April 17 to receive the packet and general information.

Sincerely yours,


Annette Ryckman
Researcher


Ellis R. Thomas
Researcher's Advisor


Robert P. Poland
VOB Project Director

APPENDIX B

MICHIGAN STATE UNIVERSITY

COLLEGE OF BUSINESS
DEPARTMENT OF BUSINESS LAW AND OFFICE ADMINISTRATION

EAST LANSING • MICHIGAN • 48824

TO: VOB Teachers
FROM: Annette Ryckman *A.R.*
DATE: April 30, 1981
SUBJ: Office Education Students
Economic Understandings Status

Thank you for indicating that you will participate in the TEL testing of your students.

The TEL (Test of Economic Literacy) requires about 40 minutes of testing time. The instrument was designed as a power test rather than a speed test. For your information, the eleventh- and twelfth-grade students who were participants in the national 1977 TEL study and ranged near the fiftieth percentile rankings, scored between 17 and 26 points out of the possible 46 TEL questions.

After you have collected the test booklets and answer sheets, please place them, along with your completed teacher questionnaire, in the enclosed stamped, addressed envelope and return to me.

If you or your principal wish to repeat this test at a future date, you may request the booklets, answer sheets, and the test guide from: The Association of Michigan Economic Education Centers, X Executive Director, BOA Department, 109 Olds Hall, Michigan State University, East Lansing, MI 48824, or telephone 517/353-8676 or 355-0252.

P.S. I do not want individual names! If the names are on your student answer sheets or if you code them, I will be happy to return all of your answer sheets to YOU. Otherwise, I will mail you the findings of your class as compared to the total classes tested. (I do not have a need to look at names, codes, or class scores as I am only concerned with information from the questionnaires and test scores.)

TEL TEST INFORMATION**GENERAL INFORMATION TO TEACHER**

- . The TEST OF ECONOMIC LITERACY has been designed to be used primarily by teachers.
- . The TEL has been administered to many student groups throughout the United States.
- . The TEL is printed in a reusable test booklet which can therefore be used again.
- . The answers will be hand scored, so any regular pencil will be acceptable.

MATERIALS

- . Test booklets, pencils, questionnaires for students, questionnaire for instructor, and answer sheets for students.

SPECIFIC DIRECTIONS

- . Pass out to the students the answer sheets and student questionnaires.
- . Pass out the test booklets and pencils.
- . Say to the students,

"THE TEST BOOKLETS SHOULD REMAIN FACE UP AND CLOSED UNTIL THE SIGNAL TO BEGIN IS GIVEN."

And then say to the students,

"FILL OUT THE APPROPRIATE INFORMATION IN THE QUESTIONNAIRE."

After everyone has received all of the necessary materials and had sufficient time to complete the questionnaire,

Say to the students,

"READ THE DIRECTIONS TO YOURSELVES AS I READ THEM ALOUD:"

"DIRECTIONS..." (read the directions on the face of the test booklet--any regular pencil is acceptable)

After reading the directions to the students,

Say,

"SAMPLE QUESTION 1 AND 2 ON THE FRONT COVER OF THE TEST BOOKLET GIVES EXAMPLES OF A PROPERLY MARKED ANSWER. NOTICE THAT RESPONSE C ON QUESTION 1 AND RESPONSE A ON QUESTION 2 HAVE BEEN FILLED IN CLEARLY. WHEN YOU BEGIN THE TEST, READ THE QUESTION CAREFULLY AND CHOOSE YOUR ANSWER. THEN, USE YOUR PENCIL TO BLACKEN THE LETTERED SPACE ON THE ANSWER SHEET THAT CORRESPONDS TO THE LETTER ON THE ANSWER YOU HAVE CHOSEN."

Then say,

"WHEN YOU FINISH THE TEST, GO BACK AND CHECK YOUR ANSWERS. IF YOU HAVE ANY QUESTIONS, RAISE YOUR HAND NOW. NO QUESTIONS CONCERNING ANY ASPECT OF THE TEST WILL BE ANSWERED AFTER THE TEST HAS BEGUN. BUT, IF YOUR PENCIL BREAKS OR IF YOU DETECT A FAULTY BOOKLET OR ANSWER SHEET, RAISE YOUR HAND."

Answer questions, if any, and then say,

"YOU WILL HAVE 40 MINUTES FOR THE TEST. BEGIN."

TEST OF ECONOMIC LITERACY, FORM A-

QUESTIONNAIRE FOR THE OFFICE EDUCATION INSTRUCTOR OR ADMINISTRATOR OF THE TEL TEST

1. Your Name _____
2. School Name _____
3. Do YOU wish to receive the scores of your students to compare with the vocational office block (VOB) total? (Your students' scores are part of a total.)
 _____ Yes _____ No
4. Is the class(es) you are testing included in the Vocational-Technical Education Service (VTES), Michigan Department of Education, funding as a 14.0000 OE (office education) code? (i.e. funding for vocationally reimbursable or added cost type of related or block class programs such as steno/clerical/secretarial/general office)
 _____ Yes _____ No _____ Unknown
5. Is a course in ECONOMICS currently being taught in your school?
 _____ Yes _____ No _____ Unknown
6. If you answered "yes" to number 5, is a course in ECONOMICS currently a required course for students in your school?
 _____ Yes _____ No _____ Unknown
7. What classification or student enrollment size is the school or center in which you are testing?
 _____ 1,344+ Class A size _____ 349-675 Class C size
 _____ 676-1,343 Class B size _____ 349 or less Class D size
8. Would you like to attend workshops, seminars, or in-service programs either for credit or non-credit to learn more about methods of integrating economic concepts into your office education courses?
 _____ Yes _____ No _____ Undecided

STUDENT QUESTIONNAIRE FOR TEST OF ECONOMIC LITERACY, FORM A-

Directions: Please place a check (✓) mark or fill in the appropriate blanks.

1. Age _____ Date of Birth _____ Grade Level _____ Sex: _____ Male _____ Female
(month/year)
2. Have you had or are you currently taking a course entitled ECONOMICS?
(An ECONOMICS course is a course with a major focus on economics at least six weeks in length and taken in grades 8, 9, 10, 11, or 12.)
_____ Yes _____ No
3. If you answered "no" to question 2 above, will you be taking a course entitled ECONOMICS before high school graduation?
_____ Yes _____ No _____ Unknown
4. Have you had any of the following titled courses? (If yes, please check appropriate area.)

<u>Course area</u>	<u>Examples</u>
_____ Basic Business	.general business, exploring business, business management, introduction to business, other: _____
_____ Marketing	.retailing, sales, distributive education, other: _____
_____ Consumer	.consumer education, consumer economics, other: _____
5. What is the highest educational level achieved by your:

<u>Father or Guardian</u>	<u>Mother or Guardian</u>	<u>Educational level</u>
_____	_____	Less than high school diploma
_____	_____	High school graduate
_____	_____	Some college or additional education
_____	_____	College degree
6. What is the major occupational area of your:

<u>Father or Guardian</u>	<u>Mother or Guardian</u>	<u>Occupational area</u>	<u>Examples</u>
_____	_____	Clerical	.bookkeeper, secretary, typist
_____	_____	Crafts, Foremen, or Operatives	.mechanic, repair, carpenter, construction, truck driver, shop worker
_____	_____	Farmer	.farm manager, laborer, foreman
_____	_____	Homemaker	.manager of own personal home and/or family
_____	_____	Professional or Technical	.engineer, doctor, teacher, nurse
_____	_____	Sales	.retail, other than retail
_____	_____	Service	.cleaning, food, health, person, protective
_____	_____	Other	.please specify: _____
7. What is the approximate annual or yearly income of your family? (Please check one.)
 _____ Under \$10,000 a year
 _____ \$10,000 to \$19,999
 _____ \$20,000 to \$29,999
 _____ \$30,000 or more
 _____ unknown
8. What is the ZIP CODE of your HOME mailing address?
 _____ ZIP CODE

Thank you.

TEST OF ECONOMIC LITERACY

SAMPLES									
S1	<input type="radio"/> A	<input type="radio"/> B	<input checked="" type="radio"/> C	<input type="radio"/> D	S2	<input checked="" type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D

- 1 ☐ A ☐ B ☐ C ☐ D
 2 ☐ A ☐ B ☐ C ☐ D
 3 ☐ A ☐ B ☐ C ☐ D
 4 ☐ A ☐ B ☐ C ☐ D
 5 ☐ A ☐ B ☐ C ☐ D
 6 ☐ A ☐ B ☐ C ☐ D
 7 ☐ A ☐ B ☐ C ☐ D
 8 ☐ A ☐ B ☐ C ☐ D
 9 ☐ A ☐ B ☐ C ☐ D
 10 ☐ A ☐ B ☐ C ☐ D

- 11 ☐ A ☐ B ☐ C ☐ D
 12 ☐ A ☐ B ☐ C ☐ D
 13 ☐ A ☐ B ☐ C ☐ D
 14 ☐ A ☐ B ☐ C ☐ D
 15 ☐ A ☐ B ☐ C ☐ D
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- 21 ☐ A ☐ B ☐ C ☐ D
 22 ☐ A ☐ B ☐ C ☐ D
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 40 ☐ A ☐ B ☐ C ☐ D

- 41 ☐ A ☐ B ☐ C ☐ D
 42 ☐ A ☐ B ☐ C ☐ D
 43 ☐ A ☐ B ☐ C ☐ D
 44 ☐ A ☐ B ☐ C ☐ D
 45 ☐ A ☐ B ☐ C ☐ D
 46 ☐ A ☐ B ☐ C ☐ D

A

TEST OF ECONOMIC LITERACY

Directions

1. Please fill out the information requested on the answer sheet before beginning your test.
2. When marking your answer sheet, use *only* a regular No. 2 pencil. DO NOT USE A BALLPOINT PEN. Do not make any stray marks on the answer sheet. If you make a mistake, erase completely the answer you wish to change.
3. This test is designed to measure your understanding of economics. Not all students will have taken a formal course in economics, but most have learned something about the subject in their regular courses, through reading, listening to the radio, or watching television. These questions will measure how well you understand the principles of economics and the way our economy operates. It is probable that you will not know the answers to some questions. However, you should answer *every* question by marking what you think is the best choice, using the information you *do* have to select your answer. Work at a comfortable speed, but do not spend too much time on any one item. The test consists of forty-six questions or incomplete statements, for each of which you are to choose the *one best answer*. Even though in some instances more than one answer may appear to be correct, your task is to choose the *best* answer.

Sample Question 1

In our economy, income is usually received in the form of

- A. basic necessities.
- B. services.
- C. money.
- D. wealth.

Sample of Answer Sheet

1. ☐ A ☐ B ☒ C ☐ D

Sample Question 2

The federal government exercises the closest control over

- A. banking and money.
- B. high school education.
- C. food distribution.
- D. oil companies.

2. ☒ A ☐ B ☐ C ☐ D

Do not turn the page and begin the test until you are told to do so.

TEST OF ECONOMIC LITERACY

Form A

MAKE NO MARKS IN THIS BOOKLET. MARK YOUR ANSWERS ON THE ANSWER SHEET PROVIDED. USE PENCIL ONLY.

1. Three major factors of production are land, labor, and capital. Which of the following groups best illustrates these factors?
 - A. Rent, workers, and money.
 - B. Oil, taxi drivers, and bonds.
 - C. Iron ore, clerks, and trucks.
 - D. Farmers, investors, and manufacturers.
2. What is meant by the statement that every economic system (such as tradition, command, or market economy) faces the fact of scarcity?
 - A. There are not enough productive resources to satisfy all wants of a society.
 - B. Every young society faces scarcity, but older economies overcome this problem.
 - C. There are times when some products can be had only by paying high prices.
 - D. All economies have depressions during which scarcities exist.
3. The opportunity cost of a new public high school is the
 - A. money cost of the new building.
 - B. necessary increase in the annual tax rate.
 - C. other desirable economic goods that must be given up to build the school.
 - D. cost of constructing it now as opposed to the cost of a new school at a later date.
4. Which of the following questions is faced by all economic systems (i.e., tradition, command and market)?
 - A. How will corporations be organized?
 - B. How can markets be kept competitive?
 - C. What goods and services will be produced?
 - D. How will governments protect private property?
5. In a market economy, the purpose of profits is to
 - A. get businesses to act in a socially responsible manner.
 - B. persuade businesses to produce what consumers demand.
 - C. provide funds to pay workers better wages.
 - D. redistribute income from poor to rich.
6. Which of the following is the most essential for a market economy?
 - A. Functioning labor unions.
 - B. Good government regulation.
 - C. Active competition in the marketplace.
 - D. Responsible action by business leaders.

7. Specialization and exchange within a nation or between nations is likely to have which of the following effects?
 - A. All costs of production will rise.
 - B. More goods and services can be produced.
 - C. The danger of economic instability is reduced.
 - D. The independence of both nations and individuals is increased.

8. Within a market economy a coastal state harvests a great quantity of fish; an inland state has a productive beef cattle industry. If exchanges of fish and beef take place between these states
 - A. one cannot determine gains or losses from the given information.
 - B. one state gains at the expense of the other.
 - C. both states lose.
 - D. both states gain.

9. Suppose a large city is investigating the elimination of rent controls on housing at a time when the vacancy rate is extremely low—only 1% of all apartments in the city are vacant. Which of the following is most likely to occur if rent controls are eliminated?
 - A. A decrease in rents and a decrease in the supply of housing.
 - B. An increase in rents, perhaps followed later by an increase in the supply of housing.
 - C. An increase in the demand for housing, followed by a decrease in the supply of housing.
 - D. No change in rents, since price controls are usually set where supply and demand intersect.

10. Of the following which is the most general cause of low individual incomes in the United States?
 - A. Lack of valuable productive services to sell.
 - B. Discrimination against nonunion employees.
 - C. Unwillingness to work.
 - D. Progressive tax rates.

11. The demand for a factor of production depends largely on
 - A. the supply of the factor.
 - B. the supply of other factors of production.
 - C. the demand for other factors of production.
 - D. the demand for the product or products which it helps produce.

12. In a market economy, the public interest is served even when individuals pursue their own private economic goals, because of
 - A. the operation of competitive markets.
 - B. the social responsibility of business leaders.
 - C. careful planning and coordination of market activity.
 - D. individuals who understand what is in the public interest.

13. If consumers are to exercise their freedom of choice wisely in a market economy, they must
 - A. know where and when products are produced.
 - B. know the prices of alternative products available.
 - C. know whether a product was produced by a monopolist.
 - D. have sufficient income to permit them to purchase whatever they choose.

14. Teen Power, a teenage organization, proposed that the minimum wage for teens should be increased. What effect would this increase most likely have on teen wages and employment in a market economy?
- Wage rates would go up and teen employment would go up.
 - Wage rates would go down and teen employment would go up.
 - Wage rates would go up and teen employment would go down.
 - Wage rates would go up and teen employment would stay the same.
15. According to the "law of supply and demand," if twice as many heads of lettuce were grown this year because of good weather as were grown last year
- the supply of lettuce would stay the same this year.
 - the demand for lettuce would go down this year.
 - the price of lettuce would go down this year.
 - the price of lettuce would go up this year.
16. The price of shoes is likely to be increased by
- new machines reducing the cost of shoe production.
 - more capital investment by producers.
 - a decrease in the demand for shoes.
 - a decrease in the supply of shoes.
17. Assume that the demand increases for bread produced by many competitive firms. The resulting rise in the price of bread will usually lead to
- more being produced.
 - less being produced.
 - no change in production.
 - elimination of inefficient businesses from the market.

Questions 18 and 19 are based on the following table.

State Tax Table			
Income	Percentage Rate	Tax Amount	
		Minimum	Maximum
\$ 0-1000	0	\$ 0	\$ 0
\$1001-2000	10	\$100	\$ 200
\$2001-3000	20	\$400	\$ 600
\$3001-4000	30	\$900	\$1200

18. The tax in the table above is a
- proportional income tax.
 - progressive income tax.
 - regressive income tax.
 - fixed income tax.
19. Using the information in the table above, we know that as income increases the rate of taxation
- increases and the amount of tax increases.
 - increases and the amount of tax decreases.
 - decreases and the amount of tax increases.
 - decreases and the amount of tax decreases.

20. You read the following headline: "COFFEE GROWERS FORM MONOPOLY." How will the new coffee monopoly most likely differ from a highly competitive coffee growing industry?
- A. Profits in the coffee industry will now be certain.
 - B. The coffee growers will increase their use of capital goods.
 - C. The coffee growers will increase output and hire more workers.
 - D. There will be less incentive for the coffee growers to be efficient.
21. If you saw a newspaper headline that read, "ACME WIDGET CORPORATION RAISES PRICES; REST OF WIDGET INDUSTRY EXPECTED TO FOLLOW," you would know that Acme Widget Corporation was most likely to be in an industry with
- A. one seller.
 - B. few sellers.
 - C. many sellers.
 - D. total regulation.
22. The supply of a product increases at the same time the demand for it falls. In the absence of other changes its price
- A. cannot be determined.
 - B. will stay the same.
 - C. will rise.
 - D. will fall.

Questions 23 and 24 are based on the following information:

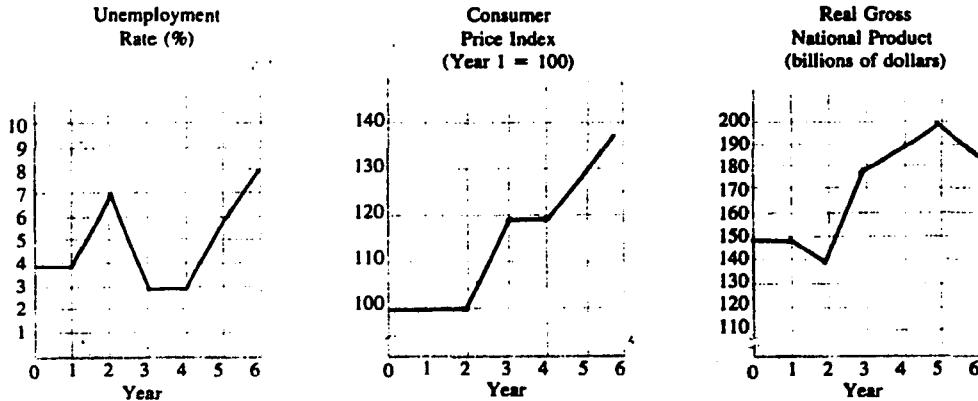
The Central City area is largely covered by smog. The smog is estimated to be approximately 100 miles long and 10 miles wide. The smog is estimated to be approximately 100 miles long and 10 miles wide. The smog is estimated to be approximately 100 miles long and 10 miles wide. The smog is estimated to be approximately 100 miles long and 10 miles wide.

23. It is highly unlikely that private business firms would build and operate the plants and sell their services directly to individual residents of the Central City area because
- A. the cost of operating the plants would be too great.
 - B. people are unlikely to be willing to pay for smog-free air.
 - C. it would be less costly for the government to build and operate the plants than for private business firms to do so.
 - D. it would probably be impossible to provide smog-free air to those who are willing to pay for it while withholding it from those who refuse to pay.
24. Suppose that the government of Central City were to build and operate the air-purification plants. From the standpoint of achieving efficiency in the allocation of economic resources, which of the following taxes should be increased to provide the additional tax revenues needed to finance the operation of the air-purification plants?
- A. Motor vehicle fuel.
 - B. General sales.
 - C. Property.
 - D. Income.
25. The total output of the economy is bought by which of the following three large groups of spenders?
- A. Farmers, laborers, and householders.
 - B. Corporations, households, and investors.
 - C. Investors, speculators, and manufacturers.
 - D. Consumers, business firms, and governments.

26. The best single measure of the total economic output in the United States is the
- consumer price index.
 - gross national product.
 - total amount of take-home pay.
 - index of industrial production.

Questions 27, 28, and 29 are based on the following graphs.

PARKLAND GRAPHS



27. Parkland had both rising unemployment and a high rate of inflation during which period?
- Years 1-2.
 - Years 2-3.
 - Years 3-4.
 - Years 4-5.
28. Parkland had an increase in output with a relatively low inflation rate during which period?
- Years 1-2.
 - Years 2-3.
 - Years 3-4.
 - Years 4-5.
29. What is the economic situation and the most appropriate monetary and fiscal policies during years 1-2?
- Unemployment is falling; a budget deficit and/or easy money policy is needed.
 - The economy is in a recession; a budget deficit and/or easy money policy is needed.
 - Inflation continues and accelerates; a budget surplus and/or tight money policy is needed.
 - Unemployment is rising while inflation accelerates; a budget surplus and/or easy money policy is needed.
30. Which of the following groups is typically hurt the most by unexpected inflation?
- Farmers.
 - Debtors.
 - Lenders.
 - Manufacturers.

31. The commercial banking system creates money when banks
- A. sell bonds to the public.
 - B. extend loans to the public.
 - C. increase loans to the Federal Reserve System.
 - D. purchase bonds from the Federal Reserve System.
32. The functions of money are to serve as
- A. a determinant of capital spending and aggregate supply.
 - B. a unit of account, a medium of exchange, and a store of value.
 - C. a determinant of investment, consumption, and aggregate demand.
 - D. a stabilizing force, a means of income redistribution, and a resource allocator.
33. The limit of an economy's real output at any time is set by
- A. the quantity and quality of labor, capital, and natural resources.
 - B. business demand for final goods and services.
 - C. government regulations and spending.
 - D. the amount of money in circulation.
34. The Federal Reserve Board generally tries to increase the money supply when it wants to
- A. hold down the government debt.
 - B. increase the government debt.
 - C. fight unemployment.
 - D. fight inflation.
35. To experience economic growth a developing country must
- A. increase investment.
 - B. increase consumption.
 - C. use the market system.
 - D. use central economic planning.
36. In a market economy high wages depend largely upon
- A. socially responsible business leaders.
 - B. high output per worker.
 - C. actions of government.
 - D. minimum wage laws.
37. Increasing the federal budget surplus is more desirable in a period of
- A. inflation.
 - B. depression.
 - C. falling prices.
 - D. mass unemployment.
38. Often an economy operates at less than full employment. This is most likely to occur
- A. whenever competition is intense.
 - B. when total spending is inadequate.
 - C. when there is excess demand inflation.
 - D. when there is a scarcity of unskilled labor.

39. If total demand declines relative to the productive capacity of the economy, which of the following is likely to occur?
- A. Inflation.
 - B. Increased employment.
 - C. A slower growth rate.
 - D. A government budget surplus.
40. If, when there is full employment, the federal government increases its spending without increasing its tax revenues, generally
- A. an increase in unemployment will occur.
 - B. a serious depression will occur.
 - C. the national debt will decrease.
 - D. inflation will occur.
41. Increased taxation is the preferred method of financing government spending when
- A. the interest rate is low.
 - B. corporate profits are low.
 - C. the economy is experiencing inflation.
 - D. the economy is experiencing a recession.
42. Which of the following four statistics is generally accepted as the best measure of the economic growth of a nation?
- A. Total employment.
 - B. Index of stock prices.
 - C. Money income per capita.
 - D. Real income per capita.
43. For most nations, the reduction of tariffs would probably
- A. force some workers out of jobs in protected industries.
 - B. lessen job opportunities in export industries.
 - C. lower the average level of living.
 - D. injure most farmers.
44. One advantage of the corporate form of business organization is that
- A. corporations do not pay taxes.
 - B. stockholders make larger profits.
 - C. stockholders have limited liability.
 - D. corporations are larger than other forms of business.
45. A national system of free medical care for the aged poor is established. The system is paid for by an increase in the income tax. These actions promote one economic goal, but work against another. Specifically, these actions are likely to
- A. reduce security but promote efficiency.
 - B. reduce equity but promote efficiency.
 - C. reduce stability but promote growth.
 - D. reduce freedom but promote equity.
46. Labor unions in the United States have
- A. strengthened the bargaining position of unionized workers in relation to their employers.
 - B. greatly increased the wages of union workers compared to non-union workers.
 - C. organized a majority of the American labor force.
 - D. increased competition in the labor market.



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APPENDIX C

**Aggregate Statistics for the TEL,
Norming Sample, Spring 1977**

	Form A	Form B
Mean	21.59	22.89
Standard deviation	8.52	8.43
N	4,192	4,468
Standard error of measurement (S.E.M.)	3.02	3.01
Cronbach Alpha	0.875	0.872
Per cent with economics	55	58

Soper, John C. Test of Economic Literacy Discussion
Guide and Rationale. New York: Joint Council on
Economic Education, 1979, p. 11.

APPENDIX D

Content Categories for the TEL

A. The Basic Economic Problem

- 1 Economic wants
- 2 Productive resources
- 3 Scarcity and choices
- 4 Opportunity costs and trade-offs
- 5 Marginalism and equilibrium

B. Economic Systems

- 6 Nature and types of economic systems
- 7 Economic incentives
- 8 Specialization, comparative advantage, and the division of labor
- 9 Voluntary exchange
- 10 Interdependence
- 11 Government intervention and regulation

C. Microeconomics: Resource Allocation and Income Distribution

- 12 Markets, supply and demand
- 13 The price mechanism
- 14 Competition and market structure
- 15 "Market failures": information costs, resource immobility, externalities, etc.
- 16 Income distribution and government redistribution

D. Macroeconomics: Economic Stability and Growth

- 17 Aggregate supply and productive capacity
- 18 Aggregate demand: unemployment and inflation
- 19 Real and money income; price level changes
- 20 Money and monetary policy
- 21 Fiscal policy: taxes, expenditures, and transfers
- 22 Economic growth
- 23 Saving, investment, and productivity

E. The World Economy

- 24 International economics

F. Economic Institutions

G. Concepts for Evaluating Economic Actions and Policies

- Economic goals: freedom, economic efficiency,
equity, security, price stability, full
employment, and growth
- Trade-offs among goals
-

Soper, John C. Test of Economic Literacy Discussion Guide and Rationale. New York: Joint Council on Economic Education, 1979, p. 3.

APPENDIX E

Five-Level Cognitive Taxonomy for the *Test of Economic Literacy*

Level	Objective	Operative Verbs	Emphasis
I Knowledge	To show that the student knows	list, recall, remember, tell, define, identify, label, locate, recognize	recognition and recall—ability to remember facts in a form close to the way they were first presented
II Comprehension	To show that the student understands	explain, illustrate, describe, summarize, interpret, expand, convert, measure, understand, translate, extrapolate	grasp the meaning and intent of information—ability to tell or translate in own words
III Application	To show that the student can use what is learned	demonstrate, apply, use, construct, find solutions, collect information, perform, solve, use abstractions, choose appropriate procedures	use of information—ability to apply learning to new situations and real-life circumstances
IV Analysis	To show that the student perceives and can pick out the most important points in material presented	analyze, debate, differentiate, generalize, conclude, distinguish, organize, determine	reasoning—ability to break down information into component parts and to detect relationships of one part to another and to the whole
V* Evaluation	To show that the student can judge and evaluate ideas, information, solutions, procedures, and goals	compare, decide, judge, evaluate, conclude, contrast, appraise, develop criteria	criteria or standards for evaluation and judgment—ability to make judgments based on criteria or standards

SOURCE: Adapted from Sally R. Campbell, *Consumer Education in an Age of Adaptation* (Chicago: Sears, Roebuck, 1971), p. 10.

*This is actually the *sixth* level of Bloom's original taxonomy. We decided to delete the *fifth* level ("Synthesis") from the original schema, as it does not appear to fit in with what is normally taught in the economics classroom. In Bloom's formulation, the emphasis in the "synthesis" category is on originality and creativity.

Soper, John C. Test of Economic Literacy Discussion Guide and Rationale. New York: Joint Council on Economic Education, 1979, p. 4.

BIBLIOGRAPHY

BIBLIOGRAPHY

- Abrell, Ron. "Free Enterprise Education: An Idea Whose Time Has Come." Journal of Business Education, 56 (May 1981), 320-23.
- Blockus, Wanda. "Promoting Business Education Through Teaching Economic Concepts." Promoting Business Education. Business Education Forum Yearbook, 37 (April-May 1983), 24-27.
- Bloom, Benjamin S. All Our Children Learning. New York: McGraw-Hill, 1981.
- Bloom, Benjamin S. Human Characteristics and School Learning. New York: McGraw-Hill, 1976.
- Bloom, Benjamin S., J. Thomas Hastings, George F. Madaus. Handbook on Formative and Summative Evaluation of Student Learning. New York: McGraw-Hill, 1971.
- Bloom, Benjamin S., George F. Madaus, and J. Thomas Hastings. Evaluation To Improve Learning. New York: McGraw-Hill, 1981.
- Brenneke, Judith Staley. Integrating Consumer and Economic Education into the School Curriculum. New York: Joint Council on Economic Education, 1981.
- Brickell, H. M., and M. C. W. Scott. "The Effectiveness of Economic Education in Senior High Schools." Policy Studies in Education. New York: ERIC ED 143 571, 1976.
- Bronner, Michael. "Keeping 'Fit' in the Basics of Business and Economics." Business Education Forum, 36 (December 1981), 14-17.
- Brower, Walter A. "Current Concerns in Business Education." Journal of Business Education, 57 (March 1982), 215-18.
- Byrnside, O.J., Jr., and John D. Lee. "A Call to Action." National Business Education Association, Business and Office Education Newsletter. February 1980.
- Brown, Betty J. "Methods and Materials for Revitalizing Basic Business." Revitalization of Basic Business Education at All Instructional Levels. National Business Education Yearbook, No. 20. Reston, Virginia: National Business Education Association, 1982.

- Brown, Betty J. "The Basic Business and Economic Education Area." Journal of Business Education, 56 (January 1981), 161-63.
- Buros, Oscar Krisen, ed. The Eighth Mental Measurements Yearbook. Highland Park, N.J.: Gryphon Press, 1978.
- Busch, Frank M., Jr. "Effective Instructional Patterns for Revitalizing Basic Business." Revitalization of Basic Business Education at All Instructional Levels, ed. Eugene Jones. National Business Education Yearbook, No. 20. Reston, Virginia: National Business Education Association, 1982.
- Calhoun, Calfrey. "Planning a Career in Business Teaching." Business Education Forum, 36 (October 1981), 28-34.
- Clow, John E. "The Impact of Economic Education on Basic Business." Revitalization of Basic Business Education at All Instructional Levels, ed. Eugene Jones. National Business Education Yearbook, No. 20. Reston, Virginia: National Business Education Association, 1982.
- Conover, Hobart, Adele F. Schrag, and Eugene D. Wylie. "The Policies Commission for Business and Economic Education: Past, Present, and Future." Policies Commission for Business and Economic Education 1959-1979. Reston, Virginia: 1979.
- Darcy, Robert L. "The World of Work: New Thrust in Economic Education." Two Decades of Partnership in Economic Education, 1969, Washington D.C.: National Business Education Association, 63-72.
- Daughtrey, Anne Scott. "Basic Business Revisited." Revitalization of Basic Business Education at All Instructional Levels, ed. Eugene Jones. National Business Education Yearbook, No. 20, Reston, Virginia: National Business Education Association, 1982.
- Daughtrey, Anne Scott. "The Responsibility of Business Education for the Development of Economic Understanding." The Emerging Content and Structure of Business Education. National Business Education Yearbook, No. 8, Reston, Virginia: National Business Education Association, 1970.
- Directory of Affiliated Councils and Centers. New York: Joint Council on Economic Education, Fall 1980.
- Dlabay, Les R. "Basic Business: A Mandate for All Business Educators." Business Education Forum, 36 (February 1982), 37-38.

- D'Onofrio, Marianne J. "Teaching About Productivity." Business Education Forum, 35 (May 1981), 15-17.
- Dorty, Carolyn Henley, Marie Dalton, and Carol Wheeler. "Are We Adequately Training Students for WP Management?" Business Education Forum, 35 (February 1981), 7.
- Duff, Thomas B. "Basic Economic Concepts in the High School Curriculum." Journal of Economic Education, 3 (Fall 1971), 5-16.
- Fersh, George L. "The Need for Economic Understanding." The Emerging Content and Structure of Business Education, National Business Education Yearbook, No. 8, Reston, Virginia: National Business Education Association, 1970.
- Frankel, M. L. "The Emerging Role of the Business Teacher in Economic Education." The Emerging Content and Structure of Business Education. National Business Education Yearbook, No. 8. Washington, D.C.: National Business Education Association, 1970.
- Garman, E. Thomas. "The Consumer Education Ship Sailed and You Missed the Boat." Journal of Business Education, 56 (February 1981), 170-71.
- Gilliam, John C. "Economic Education--A Challenge to Business Educators." Balance Sheet, 43 (December 1961), 151-53.
- Good, Carter V. Essentials of Educational Research. New York: Appleton-Century-Crofts, 1966.
- Gratz, Jerre. "Major Issues in Business Education." Monograph 106. Cincinnati: South-Western, 1961.
- Hansen, W. Lee, et al. Master Curriculum Guide in Economics for the Nation's Schools, Part I. A Framework for Teaching Economics: Basic Concepts. New York: Joint Council on Economic Education, 1977.
- Haynes, James Franklin. "An Analysis of the Relationship Between Economic Knowledge and Attitudes Toward Economic Issues." PhD dissertation, George Peabody College for Teachers of Vanderbilt College, Dissertation Abstracts International, 42 (December 1981), 2767-A.
- Hill, Richard Nelson. "The Joint Council on Economic Education: A Program for Curriculum Change." EdD dissertation, Duke University, Dissertation Abstracts International, 41 (March 1981), 3979-A.

Harvey, Karen, and Lowell Horton. "Bloom's Human Characteristics and School Learning." Phi Delta Kappan, 59 (November 1977), 189-193.

Hopkins, Charles R., and Ray G. Price, eds. Developing Economic Understanding Through General Business and Advanced Basic Business: Course Outlines and Instructional Guides. New York: Joint Council on Economic Education, 1975.

Houghton, Charles Gerald. "Perceptions Regarding Selected Aspects of the Vocational Clerk-Stenography Programs in the Public Secondary Schools of Southwestern Ohio." EdD dissertation, University of Cincinnati, Dissertation Abstracts International, 42 (July 1980), 73-A.

Interstate Distributive Education Curriculum Consortium (IDEC). Course of Study Guide. Columbus: The Ohio State University, 1980, p. 14.

Jackstadt, Stephen Lovis. "A Study of the Knowledge and Attitudes of High School Students." EdD dissertation, Indiana University, Dissertation Abstracts International, 42 (August 1981), 650-A.

Kesten, Cyril Allan. "A Study to Determine the Relationship Between Business Education Teachers' Understanding of College Economics and their Understanding of Personal Economics." PhD dissertation, The University of Iowa, Dissertation Abstracts International, 41 (October 1980), 1358-A.

Leaderer, Edwin A. "Re-evaluation of Business Education in Terms of Modern Educational Philosophy," National Business Education Quarterly, (Winter 1950), 12.

Liles, Parker. "Basic Business Education--A Challenge." Modern Business Education, (March 1950), 9.

MacDowell, Michael A. "Presentation to the Association of Michigan Centers for Economic Education." Annual Report for Fiscal Year Ended June 30, 1980. East Lansing: The Association of Michigan Economic Education Centers, 1979.

Matthews, Anne L. "Twentieth Anniversary." Policies Commission for Business and Economic Education 1959-1979. Reston, Virginia: 1979.

Michigan Department of Education. Consumer Economics Education Guidelines, 1981.

- Michigan Department of Education, Vocational-Technical Education Service. 1979-80 Reimbursable Vocational Education Programs.
- Michigan State Board of Education, Vocational-Technical Education Service. Reference Guide for Vocational Education in Michigan, January 1984, II-C.
- Michigan State Board of Education. The Common Goals of Michigan Education, May, 1980.
- Millington, Clayton. "Business Teacher Education and Economics." Two Decades of Partnership in Economic Education. Washington, D.C.: National Business Education Association, 1969.
- Nolen, C. A., Carlos K. Hayden, and Dean R. Malsbary. Principles and Problems of Business Education. Cincinnati: South-Western, 1967.
- Olson, Milton C., et al. "The Business Teacher and Economic Education." Economics in the Business Curriculum. (1963; rpt.) New York: Joint Council on Economic Education, 1972.
- Peters, Donald Clyde. "Personal Consumer Economics Understanding of Senior Students in Selected Florida Universities' Secondary Teacher Education Preparatory Programs." EdD dissertation, The University of Florida, Dissertation Abstracts International 41 (August 1980), 640-41-A.
- Policies Commission for Business and Economic Education (PCBEE). Policies Commission for Business and Economic Education 1959-1979. Reston, Virginia: 1979.
- Ryckman, Lynn A. "Identification of In-service Needs as Related to Performance Tasks and Related Demographic Factors by Selected Michigan Business and Office Education Teachers." PhD dissertation, Michigan State University, 1982.
- Scriven, Jolene D. "Opinions of Illinois Secondary Business Teachers Concerning Selected Political and Socio-Economic Issues." Delta Pi Epsilon Journal, 17 (May 1975), 35.
- Sheppard, James J. "Place of the High School In Commercial Education." Journal of Political Economy, 21 (March 1913), 209-20.
- Snedden, Robert W. "The Obligation To Our Students." Balance Sheet, 42 (September 1960), p. 3.

- Soper, John C. Test of Economic Literacy Discussion Guide and Rationale. New York: Joint Council on Economic Education, 1979.
- Soper, John C., and Judith Staley Brenneke. "The Test of Economic Literacy and Evaluation of the DEEP System." Journal of Economic Education, 12 (Summer 1981) 1-14.
- Speers, Mary Louise Lemmer. "Teachers' Attitudes Toward A Consumer Economic Education In-Service Program Based on Involvement in Planning." EdD dissertation, The University of Michigan, Dissertation Abstracts International, 41 (March 1982), 3974-A.
- Stocker, H. Robert. "Integrating Computer-Based Technology in the Total Business Education Program." Business Education Forum, 35 (February 1981), 25-28.
- Suglia, Tony, and Joyce Murphy, Joint Council on Economic Education. Telephone interview. 22 November 1983.
- Swanson, Edwin A. "Trends in Business Education." NEA Journal, 49 (November 1960), 51.
- Tonne, Herbert A. "Hot House Job Training." Journal of Business Education, 26 (February 1951), 243.
- Tonne, Herbert A. "Relationship to the Total Educational Process." Principles of Business Education, 3rd ed. New York: McGraw Hill, 1961.
- Walstad, William B., and John C. Soper. "A Model of Economics Learning in the High Schools." Journal of Economic Education, 13 (Winter 1982), 40-54.
- Yerian, Theodore. "The Business Teacher's Role Outside the Classroom in the Economic Education Program." Economic in the Business Curriculum. (1963; rpt.) New York: Joint Council on Economic Education, 1972.
- Zancanella, James, and Olive Church. "Keeping 'Business' in Business Education." Business Education Forum, 35 (May 1981), 3-6.