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AUTHOR Ford, Lucille G.; Praas, John W.
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ABSTRACT

An economic education program at Ashland College designed to improve the economic literacy of preservice teachers is described. The hypothesis behind the current program is that the level of economic literacy of both the preservice teachers and their students may be substantially improved by a unified and total approach to the transmission of economic knowledge. The program consists of four separate classes which stress the knowledge of economics, the methodology of teaching economics, and the practice of teaching economics in the classroom of preservice teachers. The economics course stresses the view of economic man as a three-part interrelationship among personal and household finance, producer and manager of production, and director of public production. Each of these areas includes eight general economic concepts, such as specialization, income distribution, price, consumption, and role of government, and 36 subdivisions which are reproduced in the appendix. A description of an experimental course taught on the basis of this model program and plans for future research and publications are also included. (Author/DE)

EASTERN ECONOMIC ASSOCIATION
April 16, 1976
at
Bloomsburg State College
Bloomsburg, Pennsylvania

A UNIFIED PROGRAM IN PREPARING PRE-SERVICE COLLEGE EDUCATION MAJORS FOR THE TEACHING OF ECONOMICS

by
Lucille G. Ford, Ph.D.
and
John W. Fraas, M.A.

Both Professors are at Ashland College, Ashland, Ohio. Dr. Ford is Chairman of the Economics Department and Director of the Center for Business and Economic Education. Mr. Praas is an assistant Professor of Economics and Director of In-Service Economic Education at the Ashland Center.

Developmental History of Economic Education at Ashland College

Conscious encouragement in four major areas of societal activity is a goal of Ashland College. The four areas of interest include major tenets of American Life. First, the church and religion. No one can be said to be truly educated until he has faced the problem of his relationship with the infinite as well as the finite. Second, the family and social standards. Marriage remains the basis of our social structure. Third, law and government. The need for regulations and the processes of legal action need be understood to maintain the respect for public office and the importance of voter participation. And fourth, economics and business. It is important that as a people we define our economic goals and understand how it is the total product is brought about.

Relative to economic literacy, Ashland College took action in 1968 to establish a Center for Business and Economic Education. The Ashland Center, since its inception, has been affiliated with the Ohio Council on Economic Education and the Joint Council on Economic Education. As the second oldest Center in the state of Ohio, the Ashland Center hosted the first National Conference of the JCEE and its state and local affiliates in 1969.

The Center's purpose is: "To provide a facility through which Ashland College and the business community may join in an effort to advance economic and business literacy."[1] The areas of effort in this regard are:

1. Pre-Service Economic Education

2. In-Service Economic Education
3. Business In-Service Education
4. Business and Economic Research

The philosophy upon which the Center rests is more than a service agency to business or an attraction to students; it is a fundamental dedication to the tenet of freedom - specifically freedom of choice, freedom of enterprise, freedom to rise or fall by one's judgement, one's productivity, and one's desire. It is Ashland's position that the United States will rise or fall on the competency and economic judgement of its people. Therefore, there is a critical need to replace ignorance with understanding of:

1. The American economic order and how to function in it.
2. The American business structure and how to produce in it.

In the short run, optimum improvement in economic literacy can be achieved by teaching the practicing teacher economics. An important step toward economic literacy may be made when the teacher is able to erase such misunderstanding as reported from the following study by R. B. McKenzie of Radford College:

> "Children in the fourth and seventh grades were found to have grossly distorted visions of the economic life around them. Many thought that the prices of most things they buy are controlled by God, that the government owns most of the nation's factories and stores and rations such things as bubble gum, that everyone would be better off if each individual had a machine which could print money, and that a new house can be purchased for as little as $100."[2]

Therefore, the Joint Council on Economic Education in general and Ashland College in specific sought practicing teachers for instruction. Ashland College, to date, has conducted fifty two in-service credit courses with 1089 participants from 1968 to 1976. These students receive undergraduate or graduate credit through an arrangement with Ohio University. At this level 136,120 students are reached annually by the instructed teachers from the Center. Extrapolation of those figures for the next ten years, with no increase, should be an impressive 1,360,000 students.

The improvement in economic literacy of the practicing teacher herself is measured by the change rate in the nationally known Test of Economic Understanding. For example, in 1973-74 in Holmes County Schools, Millersburg, Ohio the class showed a positive gain of 7.7 in the mean (raw score) and a positive gain of 8 (raw score) in the median score. This is a 29.6% improvement with one three hour quarter course in economics.

From the beginning of the economic education program of in-service teachers at Ashland the teaching approach has been to combine an educator and an economist. The economist presents the discipline and the educator demonstrates methodology for the implementation of the material in the classroom. The economics teaching in these in-service courses at Ashland has evolved significantly over time. In the beginning, the traditional textbook teaching of economics, where a basic principles book was assigned chapter by chapter for class discussion, was used. This technique was found to be inappropriate. The practicing teacher is anxious to see the immediate relevance of the material to herself and to her students as well as to learn the techniques of application for her personal classroom. As a result the teaching approach of the economics has evolved to include current issues as well as games and simulations. All the while the educator, to instruct in methods, has been and is currently being teamed with the economist for the in-service classes.

The evolution of economics teaching at the Ashland Center includes not only the use of current issues, games and simulations but a conceptual approach to the entire discipline. The economic identities of the 1961 National Task Force on Economic Education have been re-grouped for facility of teaching and learning. The 38 concepts identified by the Task Force for a minimal understanding of economics for effective citizenship are re-classified into 8 economic areas that follow a conceptual thread of development. The 8 concepts identified with 36 subdivisions for natural inter-relationships and teaching needs are given on the next page.[3] In the appendix are the concept statements for each of the eight "umbrella" concepts.

Important work has been done by Ashland and others in a variety of in-service economic education programs for teachers. However, it is time as E. S. Wallace of the University of Nebraska pointed out in the Journal of Economic Education:

> "The bottleneck in the movement toward a more economically enlightened citizenry appears to be the inability thus far to upgrade sufficiently the content knowledge of the teacher of economics. The problem is not likely to be solved by traditional in-service programs, although these should be continued. Emphasis in the decades ahead must shift to better pre-service training but as yet there is little evidence of such a change."[4]

<u>Current Research in Economic Education at Ashland College</u>

The <u>hypothesis</u> of the current research in economic education at the Ashland Center is: the level of economic literacy of both the pre-service teacher and her students may be substantially

ECONOMIC CONCEPT UNITS

1. Role of specialization and mechanization for production
   - 1.1 Scarcity, the need for economizing
   - 1.2 Economic production-conversion of resources into output
   - 1.3 Productive resources-factors of production
   - 1.4 Division of labor, specialization and exchange
   - 1.5 Costs--opportunity costs, money costs
   - 1.6 Monopoly, anti-trust laws

2. Role of alternative systems for income distribution
   - 2.1 Comparative economic systems
   - 2.2 Economic security as a goal
   - 2.3 Incomes as based on productivity
   - 2.4 Real and money wages
   - 2.5 Labor unions--collective bargaining

3. Role of Price
   - 3.1 Demand determination and diminishing marginal utility
   - 3.2 Supply determination and diminishing returns
   - 3.3 Functions of price in market place

4. Consumer Problems
   - 4.1 Personal finance
   - 4.2 Consumer spending problems
   - 4.3 Consumer savings plans

5. Role of savings and profit
   - 5.1 Economic growth sources
   - 5.2 Profit motive
   - 5.3 Use of profits for investment
   - 5.4 Savings are delayed consumption
   - 5.5 Capital formation

6. Role of government
   - 6.1 Aggregate demand and its components (consumer spending, business spending on investment, government spending)
   - 6.2 GNP, National income, per capita income
   - 6.3 Business cycle, depression, inflation
   - 6.4 Government budget, fiscal policy, public debt
   - 6.5 Government expenditures and taxes

7. Role of money and Federal Reserve System
   - 7.1 What is money and what is its use
   - 7.2 Central bank-Federal Reserve System
   - 7.3 Money-bank deposits and money creation through bank lending
   - 7.4 Equation of exchange

8. Role of international trade
   - 8.1 Balance of payments, balance of trade
   - 8.2 International specialization
   - 8.3 Comparative and absolute advantage
   - 8.4 Tariffs
   - 8.5 Problems in international trade

Concepts adapted from the study of minimal understanding of economics for effective citizenship by the National Task Force on Economic Education-1961.

improved by a unified and total approach to the transmission of knowledge needed. The pre-service teacher needs to understand not only economics but also needs to understand methods for transmission of that knowledge to her students. Therefore, the current research attempts in one class the teaching of economics, the teaching of methodology of teaching economics, and the practice of teaching economics in the classroom of the pre-service teachers' students. Specifically the current research design on the Ashland campus reads as follows:[5]

A. Controlled study to measure relative growth in economic understanding of a sample class of pre-service teachers; and relative economic growth of the economic understanding taught by the teachers to their students. All this compared to a like group of pre-service teachers and their students taught in the traditional fashion of instruction and separateness of goals. (Concepts to be taught by the pre-service teacher will be assigned by the professor to cover all the basics of economics. The sample class will share their economic teaching materials and experiences with each other.)

B. The following is a unified and total approach to the transmission of knowledge:

Discipline ------ + ---- Methodology ---- + ------ Practice in
Understandings   of teaching   the classroom

C. New Teaching Approach
Revolutionizing the textbook teaching of economics to pre-service students to view economic man as a three part interrelationship:

Red - PERSONAL AND HOUSEHOLD FINANCE
(Spending and savings program of the household)

Blue - PRODUCER AND MANAGER OF PRODUCTION
(Producer of output and consumer of that output)

Black - DIRECTOR OF PUBLIC PRODUCTION
(Spending and saving programs-as a citizen in his democratic role)

PERSONAL AND HOUSEHOLD FINANCE

1. Personal budgeting
   1.1 Use of consumer credit

2. Consumer spending
   2.1 Contracts
   2.2 Advertising

3. Consumer saving
   3.1 Rates of return and risk
   3.2 Social Security, unemployment insurance, old age insurance and private security measures

PRODUCER AND MANAGER OF PRODUCTION

1. Economic specialization and business organization
   1.1 Productive resources - factors of production
   1.2 Division of labor, specialization and exchange
   1.3 Economic production - conversion of resources into output
   1.4 Business forms - single proprietor, partnership, corporation

2. The market in operation
   2.1 Demand determination and diminishing marginal utility
   2.2 Supply determination and diminishing returns
   2.3 Business costs
   2.4 Functions of price in market place

3. Income distribution
   3.1 Incomes as based on productivity
   3.2 Real and money wages
   3.3 Labor unions - collective bargaining

DIRECTOR OF PUBLIC PRODUCTION AND CONSUMPTION PROGRAMS

1. Aggregate demand (GNP, national income, per capita real income)
   1.1 Consumer spending
   1.2 Business investment (use of profits for investment and delayed consumption for capital formation).
   1.3 Government budget, expenditures, and taxes.
   1.4 International trade and its barriers; balance of payments, comparative and absolute advantage

2. Money and its use
   2.1 Central bank - Federal Reserve System
   2.2 Money-bank deposits and money creation through bank lending
   2.3 Equation of exchange*

Instructional Materials (others to be added as needs are observed). The basic reference book of the program would be Basic Economic Principles, Robert A. Lynn, McGraw-Hill Book Company; New York, 1970. Suggested readings would include:

Bowden, Elbert V., Economics Through The Looking Glass

Consumers Union, Consumers Buying Guide

Ohio State Bar Association, You and the Law

Calderwood, J. D., Lawrence, J. D., and Haher, J. E., Economics in the Curriculum, Developmental Economic Education Program, New York, John Wiley and Sons, Inc., 1970.

State Department of Education, Consumer Education, Columbus, Ohio, 1975.

*Materials covered provide a minimum understanding of economics for effective citizenship as adapted from the National Task Force on Economic Education, 1961.

The experiment goal is to test the effectiveness of the tri-part approach to teaching basic economics to education majors, by way of four separate classes. Each section will consist of education majors only. The rank of the education students will range from freshmen to seniors and will include both secondary and elementary education majors.

The instruction for the first economic section, which will be referred to as Treatment #1 (T_1), will be the traditional approach used for beginning students at Ashland College. This instruction is a lecture-discussion approach to macro- and microeconomics. The education students in this section may or may not have previous instruction in educational techniques. Only the students who have had previous instruction in educational techniques will teach in the public schools. These college students will teach a total of approximately nine hours over a three week period.[6]

Instruction for the second section, Treatment #2 (T_2), will consist of the lecture-discussion approach to economics plus instruction on educational techniques or methods. None of the students assigned to this section will have previous instruction in educational methods. All of the college students in this section will teach in the public schools for the same length of time as the students in section T_1.

The method of instruction for the third, T_3, section will be the economic concepts approach. No instruction will be given with respect to educational methods. As will be the case for section T_1, the students enrolled in this section may or may not have previous instruction in educational methods. Only the students who have had previous method instruction will be allowed to teach in the public schools.

The fourth and final section, T_4, will use an approach which combines the economic concepts method of instruction with instruction in educational methods plus public school classroom teaching experience. The students assigned to this section will not have previous instruction in educational methodology. All of the students placed in this section will teach in the public schools. The economics discipline in this experimental class will be taught around the three part interrelationship of economic man with the eight concepts already discussed. A professional educator will present the methodology and arrange in class teaching experience for the education majors of the class. The economist will teach 6/7 (the remaining 1/7 by the educator) of the class sessions in the manner of the spring '76 dry run class discussed below.

<u>Measurement</u> of the effectiveness of this approach will be made

with respect to the following: (1) the increase in economic knowledge of the college students, (2) the increase in interest towards economics by the college students, and (3) the increase in economic knowledge of the public school student taught by teachers trained under Treatment #4.

Numerous detailed hypotheses will be tested in this study. Rather than list all of them, six generalized hypotheses are listed below:

(1) There is a significant increase in the knowledge of students in sections T_1, T_2, T_3, T_4 as measured by the Test of Economic Understanding (TEU).[7]

(2) The increase in economic knowledge as measured by the TEU is significantly greater for T_4 than T_1, T_2, or T_3.

(3) There is a significant increase in the interest towards economics for the students in sections T_1, T_2, T_3, and T_4 as measured by the Questionnaire on Student Attitude Toward Economics (QSATE).[8]

(4) The increase in interest towards economics, as measured by the QSATE, for the students in T_4 is significantly greater than for the students in sections T_1, T_2, or T_3.

(5) There is a significant increase in economic knowledge of the public school students taught by the college students trained in Sections T_1, T_2, T_3, and T_4.

(6) The increase in economic knowledge of the public school children taught by college students trained in Section T_4 is greater than the increase for the public school children taught by college students trained in Sections T_1, T_2, or T_3.

Analysis of data will be made with a simple t-test to determine the change in knowledge and interest for the college students involved in the study. A t-test will also be used to determine the change in economic knowledge of the public school students taught by college students trained in sections T_1, T_2, T_3, and T_4.

It will be impossible to use matching or random selection in the place of students in sections T_1, T_2, T_3, or T_4. Therefore, multiple regression analysis will be used to analyze the increase in economic knowledge and interest of the students in section T_4 as compared to the students in sections T_1, T_2, and T_3. The preliminary multiple regression models currently under consideration for this comparison, with respect to economic knowledge and interest are as listed below:

Economic Knowledge Model
Dependent Variable
(Post-TEU) - (Pre-TEU)
Independent Variable

X_1)	Age		
X_2)	Sex	1 = male	0 = female
X_3)	Socio-economic	Father (or "breadwinner of the Family") in white collar occupation = 1	not in white collar = 0
X_4)	SAT verbal score		
X_5)	SAT quantitative score		
X_6)	Grade point average		
X_7)	Treatment #2	Student in T_2 = 1	Not in T_2 = 0
X_8)	Treatment #3	Student in T_3 = 1	Not in T_3 = 0
X_9)	Treatment #4	Student in T_4 = 1	Not in T_4 = 0

Interest Model
Dependent Variable
(Post-QSATE) - (Pre-QSATE)
Independent Variable

X_1) Post-TEU

X_2) Sex

X_3) SAT verbal score

X_4) SAT quantitative score

X_5) Socio-economic (same as other model)

X_6) Age

X_7) Grade A or B = 1 C, D, or F = 0

X_8) Treatment #2 Student in T_2 = 1 Not in T_2 = 0

X_9) Treatment #3 Student in T_3 = 1 Not in T_3 = 0

X_{10}) Treatment #4 Student in T_4 = 1 Not in T_4 = 0

The independent variables were selected on the basis of previous studies.[10] The model will be refined and modified, with respect to multicollinearity, heteroscedacticity and other problems of regression analysis, after the data have been collected, the model utilized, and the results examined.

There are many problems which must be considered in the analysis of the increase in the knowledge of the public school students taught by college student trained in Section T_4 as compared to the public school children taught by college students trained in the other sections. Possible methods by which this analysis can be accomplished are currently under study.

It should be noted the eight concepts used in the current Ashland research are similar to the eight concepts developed earlier and found in the appendix of this paper. The emphasis shifts slightly to include more "consumer economics". This is premeditatively done to equalize the weight of the three roles played by the individual:

1. His personal role - household or consumer economics
2. His production role - microeconomics
3. His public role - macroeconomics

It is the goal of this teaching approach to help the student understand all three economic functions and responsibilities.

Furthermore a second emphasis should be made to pinpoint the tri-part teaching approach to economic literacy . . .

Discipline Understandings ------ + ---- Methodology of teaching ---- + ------ Practice in the classroom

Preliminary Experimentation for Current Research in Economic Education at Ashland College

This semester, spring 1976, author Ford is conducting a "dry run" on the research which will have its full implementation next fall. The brief Bowden economics history Economics Through The Looking Glass was assigned and discussed as introductory material to the course. The eight concepts outlined above are serving as the core of this introductory economics class of 37 students. A textbook, Economics from the Consumer's Perspective by Lewis Mandell, is also assigned. The text, however, is used only as a spring board to teach the concepts and is, in effect, background reading. This particular textbook was selected because it includes material on the consumer economics area not traditionally included in economics textbooks; and it was possible to find all eight umbrella concepts in the book. As an assigned chapter of the textbook covers a given concept, that concept is distributed to the students. Subsequently, questions relevant to the concept are asked in class for each individual to answer for himself. The next class session, in programmed learning fashion, the same questions are asked the students, then graded and returned to them for additional reinforcement. These 10-15 questions per concept require little time as the answers are short; in some cases a simple yes or no answer.

The concept material presented to the class is handled by lecture, discussion, simple games and simulations and films such as the Walt Disney production "Mrs. Peabody's Beach" and the Chamber of Commerce "Freedom 2000". The wide variety of teaching techniques is used to elevate interest and alter the approach to reach the variety of students in the class. The class chose a 50% objective and 50% essay testing form for the usual examinations of the semester.

The students are responding well to the concise concept approach, which presents a sharp picture of what it is they are to understand. Over and over it is possible to refer to the three economic roles of the individual and how a given concept fits into the whole. It is, of course, the goal of this project to significantly elevate economic literacy of the students involved.

This semester's preliminary research in contrast to the fall of 1976's complete research design includes only the first of the three parts of the total design, namely, the discipline understanding. However, it is interesting to observe tentative results from this preliminary work.

The increase in economic knowledge for the preliminary study was measured by sixteen microeconomic questions on the TEU. The number of right answers on the first sixteen questions of Form A and also Form B of the TEU test were recorded.

A t-test was used to determine if there was a significant increase in the amount of economic knowledge for both the experimental section and control section. The results are listed in Table 1.

TABLE 1
Improvement in TEU Scores for Control and Experimental Sections

	Pre-Test Mean	Post-Test Mean	t-test Comparing Means
Control (N=27)	8.33	9.48	1.42+
Experimental (N=29)	9.69	12.28	4.71++

+ Significant at a .05 level
++Significant at a .01 level

The results indicate that the change in TEU scores for the experimental section is significant at a .01 level. The change in TUE scores is also significant for the control section but at a .05 level.

A t-test of the differences between the TEU change rates, shown in Table 2, indicates that the treatment group showed a significant increase over the control group but only at a .10 level.

TABLE 2
Comparison between the Control Section and Treatment Section Change ~~Rates on~~ the TEU (16 microeconomic questions)

	Control Δ TEU $\bar{X}$ (N=27)	Experimental Δ TEU $\bar{X}$ (N=29)	T-Test
Absolute Improvement	1.15	2.14	1.34+

+ Significant at a .10 level

Matching or random placing of students into the experimental section or the control section could not be used. Therefore, many variables other than treatment may have caused the siginificant increases recorded on the microeconomic questions of the TEU. The data were fitted to a regression model which used the change in scores for the sixteen microeconomic questions on Form A and Form B of the TEU as the dependent variable.

The independent variables used are listed in Table 3.

TABLE 3
Independent Variables

Class rank	upperclassman = 1 other = 0
Age	
Sex	male = 1 female = 0
Major	education = 1 other = 0
Major	business = 1 other = 0
Socio-Econ	father or mother attended college yes = 1 no = 0
Socio-Econ	family breadwinner is a white collar worker yes = 1 no = 0
Treatment section	yes = 1 no = 0
Pre-Interest Test Score	
SAT - Total	
Grade Point Average	
Pre-TEU	

The variables which statistically appeared not to be related to the dependent variable were eliminated. The resulting regression equation included three independent variables which were membership to the treatment group, SAT score, and pre-TEU score. The regression results are as follows:

$$\Delta \text{TEU} = 1.523 + \underset{(2.01)}{1.427}\ \text{Treatment} + \underset{(2.92)}{.0061}\ \text{SAT}$$

$$- \underset{(-4.73)}{.635}\ \text{Pre-TEU} \qquad R^2 = .355 \quad F = 8.27$$

As indicated by the regression equation all of the t-values, which are indicated by the numbers in the parentheses, are significant at a .05 level. Both the treatment and the SAT scores are positively related to the change in TEU scores. However, contrary to a prior knowledge, the pre-TEU score is negatively relative to the change in the TEU scores.

The F-ratio indicates the R^2 is significant at a .01 level. However, the R^2 value also indicates that only .355 of the variation in the change of TEU scores can be explained by these three independent variables.

A third regression model was calculated to determine the contribution of the treatment to the explanation of the variance in the change of the TEU scores over and above the effects of the SAT scores and pre-TEU scores. The model is as follows:

$$\Delta TEU = 1.526 + .0064\ SAT - .581\ Pre\text{-}TEU$$

$$R^2 = .297$$
$$F = 9.73$$

In order to test the hypothesis that the change in the TEU scores is significantly greater for the treatment section than the control section over and above the effects of SAT and pre-TEU score differences, an F ratio was calculated. The value of the F ratio, which was $F = 2.71$ with $df_1 = 1$ and $df_2 = 46$, is <u>not</u> significant at a .05 level.

It should also be mentioned that in the preliminary study two professors were utilized, one in the experimental section and the other in the control section. Due to this fact, the contribution of the treatment towards the explanation of the dependent variable could in part be due to professor differences. This problem will not be encountered in the main study.

Another dependent variable was also examined with the independent variables mentioned above. Potential gain which is equal to the change in the TEU post-test score and pre-test score divided by sixteen (the number of possible right answers) minus the pre-TEU score was utilized as the dependent variable. The use of this dependent variable gave results similar to the models discussed above.

Although the results of the preliminary study are far from conclusive, they are generally positive and warrant the main study in the Fall of 1976.

Fully Tested Research and Publication Plans

A second year, 1977-78 the preparation of a college teacher guide based on this research is planned. The guide could be used by any college instructor with any economics materials for the teaching of pre-service education majors. The guide would follow the evaluation, organization and refinement of the 1976-77 research. Publication of this guide, which would include the umbrella concepts and materials and methods to be used by the college teacher for implementation of the concepts, should serve as a highly useful instrument in the goal of economic literacy of pre-service education majors and the school children they subsequently teach.

There is no simple way to improve the economic literacy of the American public. It would appear the best approach is to work with teachers both in-service and pre-service. This research project is directed to the training and equipping of pre-service education majors in economics. The approach, indeed the innovations contained herein, ought go a long way to the end of improved economic literacy of those served.

In agreement with this statement a leader in support of curriculum study and educational progress, the Martha Holden Jennings Foundation of Cleveland, gratefully funded the first year of this research with the invitation to apply for the second year.

A plea is made for ever more research in economic education. There is much to be lost and the hour is late.

Footnotes

1 L. G. Ford, "Purpose: Center for Business and Economic Education, Ashland College", Ashland College, Ashland, Ohio. unpublished papers, 1968, 1.

2 R. B. McKenzie, "An Exploratory Study of the Economic Understanding of Elementary School Teachers", The Journal of Economic Education, Fall, 1971, 29.

3 L. G. Ford, "Economics for Problems of Democracy", Ashland College, 1974, 3.

4 E. S. Wallace, "The Preparation of High School Teachers of Economics", The Journal of Economic Education, Fall 1970, 76.

5 L. G. Ford and J. W. Fraas, "Proposal to Martha Holden Jennings Foundation Pre-Service Teacher Economic Education Program", Ashland College, Unpublished papers, 1975, 5.

6 N. A. Flanders, "A National Coordinated Program of Research on Teaching Effectiveness", How Teachers Make a Difference, Washington: U.S. Office of Education, 1971, 106. (Research has found that instruction of one hour a day for two weeks is sufficient to provide for between-group differences for topics in the social studies.)

7 Committee for Measurement of Economic Understanding, Joint Council of Economic Education, "Test of Economic Understanding". Chicago: Science Research Association, 1963.

8 Lewis Karstensson and R. K. Vedder, "A Preliminary Study on Student Attitude Toward Economics", (unpublished). And "A Note on Attitudes as a Factor in Learning Economics", The Journal of Economic Education, Vol. 5, #2, 1974, 100-112.

9 The increase in economic knowledge for the public school student will be measured by one of the following: (a) The Primary Test of Economic Understanding (Grades 2 and 3), (b) Test of Elementary Economics (Grades 4 - 6), (c) Junior High School Test of Economics (Grades 7 - 9), and (d) the Test of Economic Understanding (Grades 10 - 12).

10 E. D. Emery and T. P. Enger, "Computer Gaming and Learning in an Introductory Economics Course", The Journal of Economic Education, Spring 1972, 77-84. Attyeh, Bach and Lunsden, "Factor Affecting Student Learning of Elementary Economics", Recent Research in Economic Education. Paden and Moyer, "The Relative Effectiveness of Three Methods of Teaching Principles of Economics", Journal of Economic Education, Fall 1969, 1.

APPENDIX

CONCEPT I

Role of Specialization and Mechanization for Production

Human wants exceed society's ability to satisfy them. Resources (land, labor, capital, and entrepreneurship) are scarce and must in some way be rationed. Moreover, human wants tend to increase at a faster rate than the ability to increase production of goods and services. Thus, the basic questions in any economic system are: What is to be produced? How much should be produced? How should production take place? And, how should what is produced be distributed?

The satisfaction of individual wants is limited by the individual's income which, in turn, is limited by his capacity to produce. The satisfaction of society's wants is limited by the availability and productivity of its scarce factors of production (land, labor, capital and entrepreneurship). Since resources are scarce relative to human wants, the most efficient use of resources would lead to greater satisfaction of these wants. If a more efficient way is found to produce something, or if a more productive use is found for a particular resource, then taking advantage of the greater efficiency will release some productive resource for some other use. Some of the ways to be more efficient are division of labor, specialization and mechanization of production methods. Objectives of various economic societies are quite similar; such as economic growth, stability, and security. However, the objectives of economic freedom and justice, are viewed differently by different economic systems.

Each business firm will seek to produce at the lowest possible cost. A businessman selling at any given market price can, by lowering his costs, make more profit or diminish his losses. To lower costs, businessmen continually seek: (1) more efficient techniques of production; (2) less expensive combinations of factors that can produce their commodity; and (3) a larger, more efficient scale of production. If one businessman can produce more efficiently than others, he may continue to sell at the same price as the others, making greater profits, or he may (under some circumstances) cut his price somewhat to take business away from his competitors, and thereby make greater profits. But usually this is an unstable situation; as the drive for profits leads other businesses to adopt the lower cost methods. Competition between businesses, if effective, drives the price down to a new level. The new price covers the new costs of production, plus the normal level of profit. Thus, effective competition wipes out the temporary large profit margins of one firm, lowers the price to consumers, and forces the remaining businesses to adopt the more efficient methods of production. Firms that cannot keep up with and continually adjust to improved and lower-cost methods are eliminated by losses as their successful competitors drive the price down.

To the individual the real cost of anything purchased is the satisfaction given up by not being able to acquire anything else. This is known as "opportunity cost".

The market place without competition is known as imperfect. This imperfection, which in the extreme case is monopoly - one producer - may work to the disadvantage of the consumer. The reverse results of perfect competition found in imperfect competition would be higher prices and lower quantities of goods and services for the consumer. Since such results may come from imperfect market structure conditions, the United States passed legislation such as the Sherman Anti-Trust Act and Clayton Act to foster or protect competition. Extenuating conditions, however, may indicate consumer welfare is better served by the imperfect than the perfect market structure. Such extenuating conditions include large scale or large size requirements for production efficiency, and the "natural" monopoly state of non-duplicating services such as telephones.

CONCEPT II
Role of Alternative Systems
for Income Distribution

The usual classification of economic systems is tradition, command, and market. Tradition solves the problem of production and distribution by enforcing continuity of tasks and rewards through social institutions such as the caste system. Typically, the solution imposed by tradition is a static one in which little change occurs over long periods of time. The command solves the economic problem by imposing allocations of effort or reward by a governing authority. Command can achieve rapid economic growth. The government role can be one of an extreme totalitarian nature or one of a more mild democratic form. The market system is a complex mode of organizing society in which order and efficiency emerge from a seemingly uncontrolled society. The economic decisions are made by people as voters, consumer workers, savers, and investors. Signals well inscribed on the market system in the form of supply and demand largely determine price. The prices, in turn, play a large part in answering the basic economic questions.

The economic systems of the world can be placed on a continuum with no government ownership of productive resources on one end and total government control forming the other end. The market assumes the principle burden of solving the basic economic problems in the first situation while the government planners determine how to solve these problems in the second situation. Communism is a kind of command. Key decisions are made by the Communist party, and there is important denial of political and civil liberties. There is greater government control of an economic system in a Communist system than in a socialistic system. The socialist system can be placed somewhere in the middle of the continuum.

Any economy and thereby those within that economy have what they collectively produce and only what they produce. The key to a better standard of living - that is a rising real income - is based on improved productivity. Productivity is the output per man hour worked. The phrase real income refers to one's actual purchasing power. A dollar increase in income matched by an increase in cost leaves the purchasing power of the individual unchanged. Real income increases only as real output increases. Economic security is a prime goal of most individuals.

National income is classified into payments to the four factors of production - rent to land; wages to labor; interest to asset holders; and profit to owners or entrepreneurs of business. Price or cost of the factors of production is the exchange value of these products or services. The costs, which become income to the receiver are largely determined by supply and demand forces in the market place. Therefore, rent, wages, interest and profit are all types of prices as well as types of costs.

The income of one family will depend to some extent on the ability of the family to save and to accumulate private property (capital and natural resources) as well as one's own personal labor. Total family income is determined by both the quantity of factor service he has to sell and the price he receives for them in the market. An individual, then has low income if:

a. he works (sells his labor) in a market where the price (pay) is low
b. he owns no property
c. he is unemployed part of the time

An individual has high income if:

a. he sells his labor in a market where the price is high
b. he has a large quantity of factors to sell in addition to his own labor - he owns property - and the price for these factors is favorable
c. he and the factors he owns are continually employed

It can be seen by an example at this point how the lack of effective competition can affect income distribution in the economy. A strong barbers' association of owners or employees can prevent an increased supply of barbers from competing effectively with existing barbers, for example, by licensing regulations. The price of haircuts can be kept high, and therefore the barbers' incomes kept high. Removal of licensing regulations and more effective competition by people wishing to practice as barbers would increase the supply of barbers, lower the price of haircuts, and reduce barbers' incomes. Control over effective competition in the hands of the barbers' association gives the barbers, instead of impersonal market forces, a significant degree of control over the price of what they have to sell and therefore over their income.

It is the goal of each factor of production to increase its share of national income. For example, organized labor organizations have attempted to increase the income share going to their members. Government transfer payments such as social security, the government tax structure, (which taxes higher income at a high rate than low incomes), inheritance laws, and so forth, redistribute a portion of personal income.

CONCEPT III

Role of Price

Demand is different from want. A person can want anything, but a demand indicates the person is able and willing to buy a product or goods. Many factors determine demand such as taste, money available, spending habits, availability of products, and cost of borrowing. Specifically, demand is defined as the amount of a good buyers will actually buy at any one time at each of the possible prices that might be charged. The various amounts at different prices demanded will change as the factors which determine demand change. Significantly, the character of the demand comes from what is called the law of diminishing marginal utility - that is to say that with the consumption of a given product the utility or satisfaction from the added units of that product will decline. Furthermore, demand character reflects that more persons have low income than high. Supply can be defined as the amount of goods a seller will actually sell at any one time at each of the possible prices that might be received. More producers are able to offer to the market a given product, the higher the price because of varying operating efficiency of producers and rising input prices with larger quantities being consumed. As with the level of demand, supply offered at various prices will change as the factors that determine amount of supply change such as higher or lower input prices.

The so-called equilibrium price which is the result of the interaction of supply and demand is the price paid in the market place. Other things, equal, prospective buyers will usually offer to buy more of a commodity at any one time as the price goes down. Other things, equal, prospective sellers will usually offer to sell more of a commodity as the price goes up, at any one time. In competitive markets, prices will be determined where both the buyer's and seller's offers are alike. Three important functions of price can be observed. The first function is that of allocator of resources. It is apparent that as the value of a given resource is higher in one use than in another, those resources will be pulled to the higher-priced use. The second function of price is that of rationer. If anyone chooses to buy a product at a price below the equilibrium price, he is rationed out of the market because of the equilibrium price. Finally, the third function of price is that of income distributor. As the market mechanism determines the value of a product; the value, or the prices of the factors of production necessary to produce the product are also determined. This price to the factors of production is income distribution.

CONCEPT IV

Consumer Decision Making

The consumer goal is to obtain maximum satisfaction from his available resources. Family financial management is organized spending and saving geared to a family's way of life. The plan should be reached by mutual agreement of family members. This planning permits the family to think of alternative living plans and therefore helps to clarify, to appraise and to put in priority personal goals and values. These can be worked into short-term, intermediate and long-term goals. Goals are best handled by establishing a personal time plan; then reviewing, at regular intervals, actual conduct against the plan. The consumer has specific and personal problems to consider:

a. Intelligent budgeting and buying
b. Appropriate savings and investment
c. Alternative credit forms and their costs

The principle of opportunity or alternative costs is important in analyzing buying and budgeting problems. The principle is that for any item which the consumer might purchase, he must consider if there is any other item he could buy which would bring more satisfaction.

An individual family budget should be tailored to the family goals; however, it does help to know how other people live and divide their incomes. A typical household in the USA spends about one-fourth of its budget on housing, one-fourth on food, one-fourth on clothing, personal and medical care and the remaining one-fourth on transportation, education, recreation and savings.

A careful shopper is not an impulse buyer; does not expect something for nothing; does not buy high fashion, quickly out-of-date merchandise; does not charge purchases and does not shop uninformed. That same careful shopper will make a plan for large expenditures; will buy in quantities with the lowest cost per unit; will read labels and guarantees; will consider time and energy as well as money and will exercise his right to protest, if needed.

Americans save between 6% - 7% of their disposable income. These savings may be put in savings and loan associations, in banks, in life insurance companies, in bonds, in stocks, in real estate, in investment companies, and in credit unions. Individuals save in order to provide for incomes during periods of reduced income, such as sickness or retirement. The higher the interest paid and the higher the variability of income the more is saved. The savings of individuals are used by businesses for purchasing capital goods, important in terms of efficiency, increased profits, and the general growth of the economy.

Some of the factors which investors should consider are the amount of return, the risk involved, and the liquidity (ease with which the investment can be converted into cash). Investment means the exchange of money for bonds, stocks, real estate, etc., with the hope of a rise in value or income. All schemes to "get rich quick" should be investigated thoroughly; rarely will any such scheme guarantee you a higher than normal rate of return without a higher amount of risk.

Individuals borrow in order to obtain service of large consumer items without paying for them all at once. Installment payments can be thought of as matching the service flow from the purchase. Interest is a price and must therefore rise when the rate of inflation is high. It is important to understand the different forms and costs of credit available to the consumer as well as the value of a good credit rating and the role of collateral.

CONCEPT V

Role of Savings and Profit

The profit motive is the desire to maximize income. This gain concept applies to income received by all factors of production - land, labor, capital, entrepreneurship. The role of profit in a market economy is to direct production to the satisfaction of the greatest number of human wants. Profit motivates people to do the things which make the economy function . . . to take a risk, to be efficient, to respond to consumer demand, and to expand.

The payments to factors of production are: rent to land, wages to labor; interest to physical resource holders and profit to the fourth factor - entrepreneurship. The economist views profits as the return to this special type of human resource - entrepreneurship or entrepreneural ability.

The functions of the entrepreneur - the services performed are: (a) to effectively bring together the other three factors of production, (b) to make basic business-policy decisions; (c) to innovate - to introduce new products, production techniques or forms of business organization; and (d) to assume risk..

A "normal" profit is the minimum return or payment necessary to retain the entrepreneur in some specific line of production. This is a cost - payment for service rendered. Profit as the prime mover of the market system influences both the level of resource utilization and the allocation among alternative uses.

Capital goods are required for economic growth in order to make labor more productive and to realize the efficiencies of mass production. Producer goods or capital goods means tangible items such as machinery, building, and equipment. Businesses can add to a nation's wealth by using existing factories and machines (capital goods) to produce new objects of wealth, both consumer goods and capital goods.

"Savings", to an economist, means not consuming and thereby making money available to business, government, and other individuals for their investment or consumption. Business firms fulfill most of their money requirements by selling securities (stocks and bonds) to investors, or by retaining profits in the business instead of paying larger dividends to stockholders. Individuals seldom invest their savings directly in producer or capital goods; rather, they make their money savings available to business firms which then invest in these capital goods. Financial institutions provide the vehicle for collecting the savings of many individuals and thereby make huge sums of money available for investment by industry, government, and other individuals.

The demand for liquid capital follows the Law of Demand: at high prices (interest rates) the quantity of savings demanded will be lower than at low prices. Many forces discourage people from saving: the desire for current consumption, the need to have ready cash for emergencies, and uncertainties regarding the future. To overcome these forces, a price (interest) must be paid and the higher the interest rate offered, the more willing people are to make a portion of their current incomes available for investing.*

Economic growth can take place only when savings are made available for investment in a growing stock of capital goods. Therefore, an economy's growth depends on its supply of capital goods (as well as natural resources, labor, and technological innovations). A healthy environment (full employment) stimulates growth by encouraging investment in new capital goods. Because national income is high, savings - so necessary for investments - are also high.

*Note: A careful distinction should be made between saving and investing. When a person deposits money in a savings account or buys a few shares of common stock, he is <u>saving</u> his liquid capital. Only when real (tangible) items of wealth are acquired (e.g. a new home, new plant, or new machines) is an investment being made. When one "invests" in the stock market, one is actually saving. When a person "saves" by building a new home, rather than renting an apartment, he is actually investing.

of the factors of production; in other words, all that is being produced is being consumed. Converting real GNP to a per capita basis and then examining how fast this per capita figure is growing gives an idea of how much the standard of living is rising.

Another measure of economic growth is national income, a figure arrived at by totaling five income classifications: compensation of employees, proprietor's income, rental income of persons, corporate profits, and net interest. A healthy economic environment (full employment) stimulates growth by encouraging investment in new capital goods and by stimulating research and development expenditures. When national income is high, savings - so necessary for investment - are also high.

There are a number of ways in which taxes may retard economic growth. Taxes may reduce the income which individuals have to spend which reduces the sales and profits of business firms which reduces their incentive to expand; taxes may reduce the amounts people have to save which may bring about a reduction of investments in new plant and equipment, thus retarding economic growth and the creation of new job opportunities; high taxes may reduce after tax profits making risky business ventures even more unattractive; high taxes may reduce individual incentive to work, thus retarding economic productivity.

The public debt (also called "national debt") refers to the total amount borrowed and not yet repaid by the federal government. Although the public debt has grown in absolute size over the years, it has declined as a percentage of national income. And a growth in national income reflects an increased ability to bear debt and to pay interest.

Inflation, an increase in the general level of prices, is a result of the economy attempting to spend beyond the existing level of output. The two major theories of inflation are demand-pull inflation (excessive demand pulls prices up) and cost-push inflation (increased industrial costs push prices up). Often inflation is a combination of the two and is called push-pull inflation.

The business cycle, a fluctuation in economic activity, can be measured for both intensity and duration. During a downward movement of the business cycle, income, production, profits, and sales fall, while unemployment rises. During an upswing, the process is reversed. Of the many factors which are thought to contribute to business cycles, probably the most significant is a change in aggregate demand. Others include mismanagement of the money supply, fluctuation in capital goods, expenditures and inventories, population changes; industrial innovations, and certain psychological factors.

Economic instability is caused by fluctuations in aggregate demand; it manifests itself in fluctuations in the total volume of spending in the economy. Monetary policy (money supply change pointed by the President. Throughout the regulation of the money supply, the Federal Reserve System indicates its monetary policy of promoting economic stability and growth. It does this by setting the discount rate, which is the rate of interest federal reserve banks charge on loans to member banks, by adjusting reserve requirements, which refers to the percentage of demand deposits and time deposits that a member bank must keep on hand or on deposit in a federal reserve bank, and selling and buying securities called open-market operations.

Briefly observe how in practice the money supply can be changed by the federal reserve system. The higher the interest rate (discount rate) charged by the Fed to member banks, the higher the interest rate charge that must be made to the member bank's customers. The higher the interest rate or charge to borrow money, the less money will be borrowed. As the reserve requirement is changed, the money supply will likewise change. Banks are required to maintain reserves equal to only a fraction of their deposits. Reserve in excess of this amount may be used to increase the bank's earnings. For example, assume the reserve requirement is 20% on demand deposits. If an individual deposits 100 dollars in bank A, bank A may lend $80 of this deposit, which it may do, to another individual, the second individual now has $80 and the bank still has the $100 it obtained from the first depositor, so the money supply has been expanded by $80. This process may be repeated until there are no more excess reserves. If the reserve requirement is 20%, the full money expansion is $500, while if the reserve rate is 25%, the money expansion is $400. Finally, the money supply is affected by the federal open-market committee as it decides to buy or sell government securities to the public. For example, in order for people to buy the government securities, they may withdraw the money from the bank, thus, lowering the reserves and the lending power of the member bank. This, in turn, lowers the total money supply. The amount of money in the economy directly affects the quantity of business transactions possible.

Monetary policy of the Federal Reserve System along with fiscal policy of the government are the two primary tools used in the U.S. to bring about the economic goals of growth and stability for the country.

CONCEPT VIII

Role of International Trade

International trade involves the exchange of products between the peoples of different nations. The reasons for such trade are (1) different kinds of resources are found or can be produced more efficiently in different parts of the world, and (2) the economic principle of "specialization" works in the same way between countries as between individuals or between regions in a single country. Foreign trade is a method by which the demands of people for more and better goods can be satisfied at lower costs.

A small country, with few economic resources or products, cannot hope to maintain an adequate standard of living without engaging in international trade. A large nation, such as the United States or the Soviet Union, which have diversified resources, is less dependent upon international trade than small nations, but likewise fare much better with international trade than without it. Every country depends on international trade to supply some of its material goods and to sell some of its raw materials or manufactured products.

In terms of volume, a country's most important foreign economic transactions are importing (the purchasing of commodities from foreign countries) and exporting (the selling of commodities to foreign countries). Imports and exports involve the exchange of different currencies and are, therefore, more complex than ordinary economic transactions.

The most obvious reason nations engage in foreign trade is for absolute advantage; that is, many commodities cannot be grown or produced in certain regions of the world. Without foreign trade, Americans for example would not have coffee, cocoa, tea, coconuts, bananas, or any of a large number of commodities that cannot be produced in the country. Even if a nation could produce everything more cheaply than other nations, it would still pay that nation to specialize and trade if it had a comparative advantage in producing some commodity. To illustrate, suppose a two-commodity, two-nation world existed in which Florida could produce both oranges and wool more cheaply than Australia. If Florida's production cost advantage were greater in oranges than in wool, specialization and trade would profit both nations. It would pay Florida to specialize in orange production, where its cost advantage was greater, and it would pay Australia to specialize in wool production, where its cost disadvantage was less.

An excess of exports over imports, as measured in monetary values, is called a favorable balance of trade. This means that a country is selling more abroad than it is buying. The reverse - that is, buying more from abroad than is sold abroad is called an unfavorable balance of trade. Note that these terms refer only to the purchase and sale of goods.

The "balance of payments" refers to the flow of funds between nations. A "favorable" balance of payments exists when more funds come into a country from abroad than go out; an "unfavorable" balance of payments is the opposite.

A country may impose restrictions on what can be imported or upon the purposes for which foreign receipts may be used when a country's available foreign exchange is dwindling. At other times, a country may establish import "quotas" to protect the domestic producers of given products from outside competition. These and other similar devices are barriers to free international trade. The most commonly used barrier is the tariff (a tax or "duty" assessed against imported products).

Some other parts of the world and especially the European Common Market have made considerable progress toward free trade and other types of cooperation. American products, therefore, moving into these areas will face continuously keener competition.