

The University of North Carolina
at Greensboro

JACKSON LIBRARY



CQ

no. 1112

UNIVERSITY ARCHIVES

KEARNEY, PAULA LUCKADOO. The Economic Socialization of Elementary School Children: Their Experiences and Understanding. (1973)
Directed by: Dr. Kay P. Edwards. Pp. 94.

The purpose of this study was to investigate the economic socialization of elementary school children relative to their economic experiences and their understanding of selected economic concepts, and to investigate the relationship of several demographic variables to economic learning.

A systematic, stratified random sample of seventy-two subjects was drawn from all pupils enrolled during the 1972-73 school year in the public elementary schools of Greensboro, North Carolina. Each of the six grade levels was represented by twelve subjects equally distributed between boys and girls and white and non-white subjects.

The interview schedule, administered individually to each subject by the investigator, consisted of a fifteen-item questionnaire on economic experiences and an oral vocabulary measure of economic understanding. Demographic data were obtained from the subjects' permanent school records.

Subject responses were tabulated for the total sample and for several subgroups. Scales of Economic Experience and Economic Understanding were constructed by the internal consistency method. Relationships between these measures and the independent variables of grade level, age, sex, race, and socio-economic status were measured by both the Pearson correlation technique and stepwise multiple regression analysis.

Analysis of the data showed economic experience to be significantly related to a subject's sex, grade level, age, and socio-economic status. Females tended to have lower scores of economic experience than males. An increase in grade level or age was associated with an increase in economic experience. Subjects from the high socio-economic group tended to have higher scores of economic experience than did those from the low socio-economic group.

Economic understanding was found to be significantly related to a subject's grade level, age, economic experience, socio-economic status, and race. Higher grade levels and ages were associated with higher scores of economic understanding. High scores of economic experience were also associated with higher scores of economic understanding. White subjects and those from the high socio-economic group tended to score higher on economic understanding than non-white subjects and those from the low socio-economic group.

An equation predicting the score of economic understanding from a subject's grade level, socio-economic status, and score of economic experience was offered with suggestions for its use by classroom teachers. A difficulty gradient of the twenty-five economic concepts was also developed.

THE ECONOMIC SOCIALIZATION OF ELEMENTARY

//

SCHOOL CHILDREN: THEIR EXPERIENCES

AND UNDERSTANDING

by

Paula Luckadoo Kearney

///

A Thesis Submitted to
the Faculty of the Graduate School at
The University of North Carolina at Greensboro
in Partial Fulfillment
of the Requirements for the Degree
Master of Science in Home Economics

Greensboro
1973

Approved by

Ray P. Edwards
Thesis Adviser

APPROVAL PAGE

This thesis has been approved by the following committee
of the Faculty of the Graduate School at The University of North
Carolina at Greensboro.

Thesis Adviser

Kay P. Edwards

Oral Examination
Committee Members

More J. Leary
William E. King

June 26, 1973
Date of Examination

ACKNOWLEDGMENTS

The writer wishes to express thanks and appreciation to:

Dr. Kay P. Edwards, Chairman of her Graduate Committee, for her constant support and guidance during this research;

Dr. William E. Knox, Department of Sociology, and Dr. Donald G. Jud, School of Business and Economics, for their interest and counsel as members of the Committee;

Dr. Thomas J. Leary, School of Business and Economics, who so graciously substituted for Dr. Jud at the oral examination;

Dr. Carl Cochoran and Dr. William A. Powers, III, Statistical Consultants, for their invaluable assistance with the statistical analysis and computer programming;

Mr. Leroy Delionbach, psychologist, for his assistance in checking the reliability of the writer's scoring techniques;

the administrative personnel of Greensboro City Schools, especially Mr. William R. Johnson, Assistant Superintendent, and Dr. Vera Lentz, Director of Psychological Services;

the participating principals, teachers, and students of Greensboro City Schools, without whom this study would not have been possible;

the North Carolina Agricultural Experiment Station and
the School of Home Economics of the University of
North Carolina at Greensboro for the research assis-
tantship which made possible her graduate study;
her parents, Mr. and Mrs. James B. Luckadoo, who have
always encouraged and supported her educational
endeavors;
and finally, her husband, Gary, for his unfailing encou-
ragement and understanding throughout the study.

TABLE OF CONTENTS

	Page
LIST OF TABLES	vi
INTRODUCTION	1
Statement of the Problem	1
Purpose and Significance of the Study	3
REVIEW OF LITERATURE	8
METHODS AND PROCEDURES	21
The Sample.	21
Instruments	23
Collection of Data.	27
Analysis of Data.	29
RESULTS AND DISCUSSION	33
The Sample.	33
Economic Experiences.	37
Economic Understanding.	48
Testing of Hypotheses	59
SUMMARY AND CONCLUSIONS.	60
BIBLIOGRAPHY	72
APPENDIXES	77
Appendix A Sample Selection.	78
Appendix B Instruments	81
Appendix C <u>Two Factor Index of Social Position</u>	86
Appendix D Correlation Matrix.	90
Appendix E Multiple Regression	92

448256

LIST OF TABLES

Table	Page
1 Summary of Subjects by Grade Level, Sex, and Race	33
2 Age of Subjects by Grade Level.	34
3 Educational Level of Family Heads	35
4 Occupation of Family Heads	35
5 Socio-economic Status of Subjects by Grade Level.	36
6 Economic Experiences by Grade Level	38
7 Mean Scores of Economic Experience by Independent Variables .	41
8 Numerical Values Assigned to Independent Variables.	42
9 Correlation Coefficients Between Economic Experience and the Independent Variables.	43
10 Economic Experience: Multiple Regression Equation Estimated from All Variables	44
11 Economic Experience: Multiple Regression Equation Estimated from Sex, Grade Level, and Socio-economic Status	46
12 Subject Responses to Economic Concepts.	49
13 Number of Subjects Responding Correctly to Each Concept by Grade Level	50
14 Mean Scores of Economic Understanding by Independent Variables	51
15 Correlation Coefficients Between Economic Understanding and the Independent Variables.	53
16 Economic Understanding: Multiple Regression Equation Estimated from All Variables	55
17 Economic Understanding: Multiple Regression Equation Estimated from Grade Level, Socio-economic Status, and Economic Experience Score	57
18 Difficulty Gradient of Economic Concepts.	58

INTRODUCTION

Statement of the Problem

Every individual in society functions in at least one economic role, that of consumer. Most adults also fulfill the role of producer. Human beings routinely perform a wide range of economic activities requiring various degrees of skill and understanding. They sell or rent their productive resources to others and allocate the resultant incomes among competing economic goals. Individuals make countless marketplace decisions concerning the selection, purchase, and use of goods and services. These activities are often performed with little or no conscious effort. What is it that enables an individual to perform complex economic tasks without intensive deliberation?

Economic behavior is governed by an individual's economic attitudes, values, and knowledge. Such behavior is further defined by the individual's economic role in a situation. There is some question about how economic roles are learned (8). Specifically, in what ways do individuals learn the economic behavior considered as appropriate in our society? What factors contribute to or influence their acquisition of knowledge, attitudes, and values relevant to economic behavior?

Denhardt and Jeffress (17) have proposed that economic behavior is learned in the same way as other social behaviors--through interaction within social groups. Children do not possess innately the knowledge of

economic operations essential to the performance of even simple economic activities. Rather, this knowledge is acquired, probably through their association with parents, teachers, and peers. Acceptable economic behavior, sharing one's toys for example, may be positively reinforced, while hoarding one's possessions is negatively reinforced. This, in a small way, provides the child with a basis for learning the more sophisticated notions of ownership and the distribution of wealth.

Socialization, or social learning through participation, is defined as the process by which "the accepted value orientations of members of a social system are transmitted to the incoming members of the social system to allow them to formulate socially 'proper' conceptions of their functional roles in the system" (17:115). Economic socialization is, therefore, "the process by which individuals selectively acquire economic skills, knowledge, attitudes, values, and motives current in the group of which they are members" (17:115).

If one accepts the hypothesis of economic learning as a process of socialization, it is appropriate that he then attempt to describe that process. Such a description would be useful to social scientists in the investigation of economic role performance. It would also provide educators with a basis for designing economic curricula and assessing pupil development in economic learning. Research is needed to identify the agents of economic socialization; to define the scope, sequence, and process of economic learning; and to identify social and personal variables which significantly affect economic socialization.

Purpose and Significance of the Study

The purpose of this study is to investigate the economic socialization of elementary school children relative to their understanding of selected economic concepts and their economic experiences.

The following five objectives were established:

1. To determine the levels of economic socialization attained by elementary school children as measured by their understanding of selected economic concepts.
2. To describe the economic experiences of elementary school children.
3. To investigate the relationships of measured levels of economic understanding and economic experience to each other and to the following independent variables: race, sex, grade level, and socio-economic status.
4. To develop a suitable scale of the selected economic concepts for use in assessing the relative economic learning of elementary school pupils.
5. To test the hypotheses of the study.

This study will contribute findings concerning the economic knowledge and experiences of elementary school students at a time when more children have more money to spend than ever before. Society is recognizing the importance of preparing these youngsters at an early age for their economic roles as producers and consumers. Kastner (36) notes the conclusion of elementary curriculum specialists that even very young pupils need to learn some basic economic principles to enable them to

grasp and analyze other social phenomena. With passage of the Vocational Education Amendments of 1968 (59), the 90th Congress specifically designated consumer education for emphasis within home economics programs.

This interest in furthering economic education at early ages has spawned at least two national organizations and numerous educational programs. The Council for Advancement of Secondary Education (CASE) (35) and the Joint Council on Economic Education (19) have both developed programs and materials for teaching economic literacy, but to date these efforts have focused primarily on the secondary school level. Findings relative to the scope and sequence of economic learning among elementary school children, and the identification of significant influences on such learning, should be useful to educators in the design and development of suitable curricula and text materials for this age group.

This thesis will also provide classroom teachers and curriculum specialists with a means for assessing the relative levels of economic learning among elementary school students, therefore enabling them to tailor instruction to the appropriate developmental levels. This should be especially useful now that much of the racial and socio-economic segregation has been eliminated from public schools and has made the assumption of homogeneity in economic learning more questionable.

Boulding (8) contends that inquiry into the human learning process as it relates to economic functions and behaviors would be a valuable adjunct to the traditional foci of economics, for economic activity is a social process guided in part by the learned beliefs and attitudes of its participants. On the personal level, the increasing necessity for knowledgeable, responsible economic behavior and consumer competency,

especially as they relate to ecological protection, calls for investigation of how such roles are learned.

It is the paradox of our national economic situation that, at the present time, we are faced simultaneously with rising family incomes, increasing unemployment, and spiraling inflation. Admittedly perplexing to trained economists, it is frustrating and unsettling to the majority of American citizens. It seems likely that those citizens having even a basic understanding of the roles and relationships within our economic system would be better able to cope with economic crises, such as we are now experiencing, than those persons largely ignorant of economic phenomena. Its contribution to the goal of more effective citizenship is another valid reason for early economic education and the study of economic learning.

Hypotheses

The following hypotheses were developed and tested in this study:

1. There will be significant relationships between the scores of economic experience of elementary school children and the following variables: grade level, age, sex, race, and socio-economic status.
2. There will be significant relationships between the scores of economic understanding of elementary school children and the following variables: grade level, age, sex, race, socio-economic status, and score of economic experience.

- a. No direction is predicted for the associations of sex, race, or socio-economic status with economic understanding.
- b. Grade level, age, and economic experience will have positive associations with economic understanding.

Basic Assumptions

The following statements were assumed to be true by the investigator:

1. Children acquire economic knowledge through a gradual process of assimilation.
2. It is possible to measure the economic understanding and experience of elementary school children.
3. There is consensus in society regarding appropriate economic role behavior and understandings.

Definition of Terms

Certain operational definitions were developed or adapted for the purposes of this thesis and are presented here to aid in understanding of the study.

Concept: a generalized idea or notion (62).

Economic experience: a measure of socially mediated activities which involve the economic processes of production, consumption, allocation, and/or exchange, and which provide opportunity to function in an economic role.

Economic socialization: the process by which individuals selectively acquire economic skills, knowledge, attitudes, values, and motives current in the group of which they are members (17:115).

Economic understanding: the degree to which the meanings, uses, and implications of selected economic concepts have been accurately assimilated.

Limitations

The study was limited to the verbal responses of seventy-two children enrolled for the school year 1972-73 in the public elementary schools of Greensboro, North Carolina. The subjects were selected by a systematic, stratified random sample of the enrollees in grades one through six.

REVIEW OF LITERATURE

Of the groups which might conceivably act as agents of economic socialization, the family can be expected to serve as the initial and primary agent for most persons (15, 47, and 49).

Through interaction in the family setting the child first learns attitudes and behaviors acceptable in his environment and is introduced to the basic social roles which he is expected to fulfill. Although the contemporary family has lost some of its former functions, such as its self sufficiency as an economic unit, due to mass industrialization of society, it has more exclusively assumed other functions, specifically the socialization of young children (46). Russell (50) suggests that the social precepts of the young child are formed primarily within his immediate family. Goode describes the family as "the fundamental, instrumental foundation of the larger social structure" upon which all other institutions depend (21:4).

Although the family serves as the prime agent of socialization, Danziger (15) cautions against considering socialization as strictly a family process. The child is also socialized by educational institutions, peer groups, and the media. As children grow older, they tend to depend more and more upon peers and non-familial models (3), and thus, identification must be viewed as a continuous process involving multiple modeling. Bijou (6) recognizes adolescence as the beginning of a period of societal socialization in which peers and social institutions other than the family become increasingly influential agents of socialization.

The possibility of exposure to parental and peer models who display conflicting standards in the same area can greatly complicate the process of socialization (3). That response patterns can be acquired on a purely observational basis is also substantiated by Bandura (3), who contends that the effect of the mass media on the process of socialization is probably underestimated in light of the popularity of television, radio, and motion pictures.

There seem to be two basic processes through which children acquire social behavior patterns and the accompanying values and attitudes: (1) indirectly, through models offered unintentionally, and (2) through direct instruction in which models are presented deliberately (12 and 20). Printed materials, most media presentations, and overheard conversation would be considered indirect models. Direct models include adults and children whose behaviors are noted as desirable, educational media presentations, assigned tasks, and religious instruction. Three primary sources from which children acquire knowledge about money were identified by Ilg and Ames (34): experiences with personal spending money, behavior observed in their homes, and guidance from adults. Kohlberg (37) suggests that the key to effectiveness of intentional instruction adopted by agents of socialization, such as the direct guidance from adults, lies in its suitability to the maturational level reached by the child.

Important to the discussion of childhood socialization in any area is the learning of concepts relative to that area (52, 55, and 50). A concept is defined by Webster (24) as "an abstract idea generalized from particular instances," and this is essentially the definition employed by psychologists (31). Schuessler and Strauss (52 and 55) claim ample

justification for the view that socialization is basically a process of learning concepts, and they identify two avenues of investigation concerning concept learning in children. One is related primarily to describing what children of various ages and populations know about certain concepts. The work of Jean Piaget is representative of a second, more direct approach to concept learning. Piaget shows very little interest in the relationship of concept learning to age level; rather, he is concerned with identifying how the child learns and what the child must necessarily know before he is capable of grasping a more complex notion (52).

The process of concept learning involves attempts to classify objects; correct classification indicates mastery of the concept and a learned mode of response to the object (52). Bruner, Goodnow, and Austin (11) distinguish between concept learning, defined as learning of a pre-established identification rule, and concept formation, defined as discovery of a previously unknown rule for classification. As the child grows older he learns new cognitive skills helpful in solving concept-learning problems; the ability to think abstractly is one such tool (3). Pikas (48) repeats the emphatic assertion of psychologists that children can form nonverbal, functional concepts at a very early age, but notes that this age has not been specifically identified.

Ilg and Ames (33) studied arithmetical concepts and skills among students in grades five through nine. They recommended the use of a developmental gradient to aim classroom instruction and named children's errors as especially good indicators of their developmental stage in the formation of a given concept.

Several studies concerning the learning of economic concepts were conducted in the 1950's. The work was begun in 1950 with a two part study by Schuessler and Strauss (52 and 55). The first of these dealt with middle-class, urban children, ages four through ten, and attempted to establish (1) sequential stages in the child's understanding of the concept "money," (2) the distinctive features of each stage, and (3) the conditions which are prerequisite to the attainment of each state. A scalogram was devised to differentiate scale types in three areas: recognition of coins, comparative value of coins, and equivalency of coins. They found that conceptual learning in each of the three areas progressed along continua from simple responses to complex ones, from concrete to abstract, from discrete to systematic, from undifferentiated to differentiated, from rigid to flexible, and from egocentric to non-egocentric. It was concluded that a concept is not grasped at once in its entirety, but rather gradually. Chronological age was identified as a significant variable of understanding, mental age of little significance, and sex of no significance. Preliminary inspection of the data indicated that social class may have affected the age at which learning took place, but not the conceptual progression.

The simultaneous counterpart to the above study involved lower-class, urban children, ages four through thirteen, and tests in the same three areas of the concept "money" (55). The performances of the lower-class children were essentially the same as those of the middle-class children. It was determined that general levels of conceptual development between the three areas are directly related. Significant differences were found to exist in logical reasoning ability of children of different ages.

Strauss and Schuessler stressed the particular suitability of the scalogram technique for studies of conceptual development due to its flexibility and specificity.

Strauss (54) again employed the scalogram technique in 1952 with sixty-six middle-class children. From the data he organized a very detailed outline of the cumulative development of a number of monetary concepts. Each developmental stage was identified with an average age span and the median age for each span was determined. Strauss incorporated the developmental continua of previous studies into "stages" of response organization, emphasizing the sequential and cumulative nature of concept learning.

Wallace (60) reports a 1959 study by Yoshida (63) concerning developmental stages in the concept of money in Japanese children. Analysis of the data indicated that the children's understanding of the functions of money increased as they grew older, but that such development was neither continuous nor sufficient to enable them to successfully perform the money-related tasks expected of them.

Miles (43) studied the development of money concepts among Caucasian preschool children and found that pretest money concept scores showed no significant relationship to sex and socio-economic level. The data gathering process provided a learning experience for the subjects, after which all subjects showed significant improvement. Boys scored higher than girls and older children higher than younger, although no socio-economic differences were observed following the post-test. Miles concluded that age and sex might be significant factors in a child's ability to grasp a particular concept or benefit from a learning opportunity.

Williams (62) studied cognition of economic concepts among elementary school pupils in grades one through six. She found their knowledge to be a significant function of race and socio-economic status. In grades four and five, place of residence (urban or rural) was a significant influence on cognition, as was money experience at the fifth grade level. In general, white subjects, those having higher socio-economic status, urban children, and those having more experience with money scored higher than non-white subjects, those having lower socio-economic status, rural children, and those having less experience with money. Boys tended to score higher than girls, though the difference was not significant.

Gruenberg (26) contends that even very young children have some notion of the importance and function of money. They know that their father earns money by working and that their mother uses the money when she makes purchases. Miller and Horn (44) investigated children's concepts regarding debt by comparing court decisions and rationale concerning debt suits with the decisions and rationale of the children. They found significant disagreement between the children and the authorities on some principles, and noted significant differences related to socio-economic class and grade level. Lower-class children indicated more general approval of deliberate delay of payments than did middle-class children, who tended to be much less tolerant toward debtors. A mixed group of lower- and middle-class children showed the most consistent and significant agreement with the authorities. Children in the higher grade levels showed greater agreement with the court decisions than did those in the lower grade levels.

Danziger (14) investigated the development of social concepts in the area of economic relations on the assumption that the learning of social concepts might differ from the learning of physical concepts. He questioned forty-one Melbourne school children on their conceptions of "rich" and "poor," the uses of money, and "the boss" at work. He concluded that the learning of economic concepts is indeed characterized by Piaget-type stages and outlined the stages occurring in development of social concepts.

Closely tied to the idea of concept learning is that of perception. Perception is defined by Bartley as "the process by which the organism relates itself to its surroundings. In perceiving, the individual interprets, discriminates, and identifies objects and conditions experienced to be existing in the environment" (4:4). Through perception of occurrences and things around them, children progress in concept learning (48). As concepts are acquired, perception becomes increasingly differentiated and complex. (55). This sequence is related to use of the terms "need" and "interest" in perception and concept learning. Strauss and Schuessler (55) emphasize the point that need and interest affect perception only after concepts are learned. Bartley (4), however, contends that there are no criteria for determining needs or identifying which ones are acting in a given case. A significant relationship between perceived size of coins and "need" was demonstrated by Ashley, Harper, and Runyan (2), and by Bruner and Goodman (10). In both studies, lower socio-economic status subjects tended to overestimate coin size.

Estvan and Estvan (18) conducted extensive research on the social perception of children on the assumption that perception is

directly related to behavior. From children's responses to pictures dealing with community life, social status, and child-adult situations, they drew conclusions about the social perception of children. Perceptive ability consistently increased with age. Analysis also revealed differences according to sex, urban or rural residence, and social status in some areas of social perception.

Another aspect of the socialization process is the learning of attitudes. Krech and Crutchfield define attitude as "an enduring organization of motivational, emotional, perceptual, and cognitive processes with respect to some aspect of the individual's world" (38:152). Given that economic socialization is influenced in one's later years by the educational system, peers, and the media, it is believed that economic attitudes, specifically, are shaped primarily within the family (17). A child's attitudes can be expected to be very accurate reflections of those he perceives directly or indirectly in his family group, and children are known to be sensitive perceivers at an early age (45 and 51). In a study concerning the attitudes of Polish children toward theft, Malewska and Muszynski (40) found significant relationships between attitudes, socio-economic status, and location of residence--rural or urban. Rural children and children of lower socio-economic status tended to steal more often and have a more favorable attitude toward theft than did urban children and those of higher socio-economic status.

In the various studies cited above, the relationship of socialization to several different personal and environmental factors was investigated. The researchers often arrived at conflicting conclusions

concerning the effect of a particular variable on socialization. According to Cuber, it is the interplay of three sets of influences which shape the development of the individual: "his inherited organism and all of its functions, the culture which he contacts, and the unique personal experiences which he undergoes" (13:165). In regard to personal variables, Estvan and Estvan (18) found that children made impressive gains in their perception of social situations during their elementary school years. Mental age and sex differences were found to be generally insignificant.

Marshall and Magruder (42) investigated rural children's knowledge and use of money relative to their sex, age, IQ, parents' education, and socio-economic status. Their analysis consistently revealed positive, linear relationships between the test scores of money use and knowledge, age, and IQ.

Gerwitz (20) points out that the use of age as a variable in studies of socialization has some drawbacks; age is an imperfect index of social development as it is an imperfect index of physical development. On the other hand, Berlyne (5) considers chronological age an almost automatic description of an individual's developmental condition. The studies of Schuessler and Strauss (52, 54, and 55) and that of Danziger (14) all support the notion that age is a valid indicator of social development.

Socio-economic class is a frequently used variable in studies of socialization. According to Ritchie and Kohler (49), a child is placed in the social stratification system by his family's position, and this position becomes part of his social heritage. The implications

of social stratification are significant--the child is socialized to occupy a certain position. "Thus the values, attitudes, and behaviors which characterize his segment of the social stratification system constitute, in the main, the culture which is transmitted to him" (49:41). Tucker has noted in particular the "economic consequences and appurtenances of social class" (58:17). Bijou (6) found that mothers in middle and upper socio-economic classes have a stronger inclination to informally teach their youngsters abstract concepts than do mothers of the lower socio-economic class.

Estvan and Estvan (18) discovered that, when shown pictures of a family living in poverty, upper-status children tended to be more aware of qualitative problems, such as the family looked unhappy and sick. Lower-status children appeared more aware of quantitative problems--that the family had little food and no shoes, for example. Schuessler and Strauss (55), however, found essentially the same levels of concept development across socio-economic classes.

A significant correlate of social class, and presumably one greatly influencing socialization, is that of experience. Breer and Locke contend that experience "provides much of the raw material out of which men construct their fundamental ideas about life" (9:6). According to Danziger (15), the experiences open to a family are to a large degree determined by its income and social class. Because lower-class children are generally expected to assume adult responsibilities and contribute to the support of the family at a very early age, they have experiences quite unlike those of their middle- and upper-class counterparts (49).

Estvan and Estvan (18) discovered that the different experience backgrounds of rural and urban children affected their social perception. Differences in attitudes toward theft also appeared between rural and urban children, although Malewska and Muszynski (40) attributed part of the variance to socio-economic differences.

Gerwitz unites the environmental factors influencing socialization under the term "ecology," or "the gross conditions of an environment which determine which events and behaviors can occur in a setting. . . ." (20:92). Because the social and physical ecology of a setting can impose effective constraints upon behavior, it must be considered an important factor in socialization of the child.

Rising family incomes and ensuing improvements in the level of living have resulted in an affluent economic environment in which children have more spending money at earlier ages and are more exposed to economic activities than ever before. It is not unusual for young children to have experience with earning, saving, and spending money. Children also seem to figure importantly into determination of a family's consumption pattern, as evidenced by the amount of television advertising directed at the under-twelve audience.

Hoffer (29) interviewed one hundred thirty-seven rural elementary school children and their parents regarding the children's experiences with money. She found that nearly all the subjects had experience with spending money. Two-thirds earned spending money either at home or away, the girls earning more at home and the boys earning more away from home. Approximately fifty per cent had loaned money, forty per cent borrowed money, and twenty per cent saved money. By the age of ten or

eleven, eighty-five per cent of the subjects participated in the spending of family income.

In an investigation of the monetary characteristics, interests, and discretionary choices of sixth grade students, Hedrick (27) found that almost one hundred per cent of the children were receiving and handling money. Their chief sources of income were earned money, allowances, gifts, and spending money acquired from parents. In general, the children were free to spend discretionarily and were participating in family shopping and budgeting. Hedrick found also that the students had some basic knowledge about credit and its use.

It is partially in recognition of the increasingly active economic roles being assumed by children that groups such as the Joint Council on Economic Education have urged the incorporation of economics into the elementary school curriculum. In a report concerning economic education in the first grade, Marshall (41) noted that elementary school teachers are currently providing classroom experiences aimed at helping students learn the basic principles of economics. Senesh (53) maintains that elementary school pupils are certainly capable of understanding economics if it is presented in a manner appropriate to their level of understanding.

Davis (16) considered unfortunate the conclusion drawn from early research in the development of social studies concepts, that instruction about a concept should be deferred until the age at which the concept is generally understood by children. In a study of elementary student comprehension of governmental concepts, Arnoff (1), too, agreed that children are capable of understanding much more sophisticated social studies

concepts than had generally been believed possible.

Tinkler (57) recognizes the specialized terms and concepts as one of the primary difficulties encountered by children in the learning of social studies, and he maintains that a child's specialized vocabulary in a content field is the best indicator of his achievement in that field. Langer (39) cites the importance of vocabulary development in the process of concept formation and the communication of ideas.

A money vocabulary was identified by Hurlock (32) as one of several special vocabularies which children acquire after a general vocabulary is developed. Her findings indicated that children from poorer environments have larger money vocabularies than more advantaged children due, possibly, to their greater experience in being entrusted with money. Gough (22), in a study concerning the effects of socio-economic status upon the vocabulary of sixth grade students, found a slight positive relationship between socio-economic status and academic achievement. Hill and Giamatteo (28) also investigated the relationship of socio-economic status and vocabulary achievement. Their findings revealed that third grade students from the upper socio-economic group were approximately eight months more advanced in vocabulary development than those from the lower socio-economic group.

METHODS AND PROCEDURES

The Sample

The population selected for investigation was all pupils enrolled during the 1972-73 school year in grades one through six in the public elementary schools of Greensboro, North Carolina. A systematic, stratified random sample of seventy-two pupils was selected from the total population of 15,195 students.

The thirty-two Greensboro elementary schools are organized into a system composed of one single, ten paired, and twenty-one clustered schools. Each school in a pair or cluster houses two or three of the elementary grade levels, respectively. Together, the schools of a pair or cluster contain grades one through six. The schools comprising a pair or cluster are scattered geographically throughout the city, and thus one pair or cluster serves children from several neighborhoods. Some students in every neighborhood are transported by bus to the school in the designated pair or cluster which houses their particular grade level. Taking this system of pairs and clusters as the basic stratum, the sample was selected by the following method:

From the thirteen elementary "units," three units were selected by the use of a random digit table. The units selected involved eight schools: two clusters and one pair. (See Appendix A.)

Within each of the eight schools, two homeroom classes were selected from each grade level. By means of a coin toss, one of each pair of homeroom classes was designated as an "A" homeroom, and the other as a "B" homeroom.

Alphabetical class rolls indicating the sex and race of each pupil were obtained for each of the selected homeroom classes. A random digit table was used to select from every "A" homeroom one white boy and one non-white boy to be included in the sample. In this manner, one white girl and one non-white girl were selected from every "B" homeroom for inclusion in the sample. This procedure yielded twelve students from each grade one through six: three white boys, three non-white boys, three white girls, and three non-white girls.

Two of the schools selected by the sampling process had partially eliminated classroom grouping by grade level and consequently placed all third and fourth level students into combined third and fourth grade classes. In each of these schools, four of the combined grade classes were selected rather than two from each of the grades. Students within the four classes were randomly selected as described above.

In the event a selected student had withdrawn from school or was otherwise unable to participate in the study, another pupil of the same race and sex was randomly selected from the class roll of that homeroom.

Instruments

An interview schedule and a data sheet were adapted or developed to investigate the economic experiences and economic understanding of elementary school children. The interview schedule consisted of a questionnaire on economic experiences and an oral vocabulary measure of economic understanding. The data sheet was used to record demographic characteristics. (See Appendix B.)

The Pretest

The investigator pretested the interview schedule with four girls and six boys of elementary school age: one child each from grades one, four, and five; two students each from grades two, three, and six. The results of the pretest revealed several areas of the interview instrument in need of refinement or clarification.

The pretest indicated that some parts of the questionnaire concerning economic experiences were too difficult for the younger children to understand. As a result, several of the questions in this part of the interview schedule were re-worded accordingly. One of the concepts presented in the vocabulary section, "estate," consistently elicited a non-economic definition. This word was deleted from the revised form of the instrument and replaced with another word.

The average pretest interview required twenty minutes for completion, at which time some of the younger subjects were becoming obviously fatigued and disinterested. The investigator decided to limit the revised form of the interview schedule to a length comparable to that of the pretested schedule.

To determine the reliability of the investigator's judgment of level of understanding, the vocabulary portion of the pretest interviews was tape recorded. These recordings were monitored independently by both the investigator and a psychologist experienced in the administration and scoring of tests of this type. Subject responses were rated according to the predetermined scoring criteria. A comparison of agreements to disagreements on scoring yielded a 71.6 percentage of agreement. Inspection of a contingency table showing evaluations of both judges revealed that the investigator tended to score more leniently than did the experienced judge; particularly, the investigator tended to rate as completely correct responses scored as partially correct by the psychologist. Further inspection identified six items especially subject to this type of scoring disagreement. The investigator consulted with the psychologist, clarifying application of the scoring criteria to these items. The judge also evaluated the investigator's interviewing and scoring procedures, offering suggestions for refinement and improvement.

The pretest emphasized the value of tape recording each interview for later referral. The decision was made to record the vocabulary portion of each interview in the actual study.

Measure of Economic Experiences

A list of experiences believed on the basis of the literature to have influence on childhood economic learning was prepared by the investigator. An economic experience was defined operationally as "a socially mediated activity which involves the economic processes

of production, consumption, allocation and/or exchange, and which provides opportunity for the respondent to function in an economic role." From this list, fourteen economic experiences were selected for inclusion in the questionnaire. These experiences were judged by the investigator to be adequately representative of the above economic processes, yet within the experiential possibilities of elementary school children. The subjects were asked if they had participated in each of these experiences. An affirmative response was in some cases followed by another question soliciting descriptive or clarifying information.

The subjects were also asked whether or not they watched television, and if "yes," to indicate their viewing practices for several time periods as "sometimes," "never," or "always." This was included as part of the questionnaire for two reasons: (1) television can expose children to a wide variety of fictional and non-fictional situations involving economic activities, and (2) time spent viewing television precludes a child's time being spent in other play or educational activities.

Measure of Economic Understanding

The measure of economic understanding employed in this study was adapted from a research instrument developed by Williams (62). The original instrument consisted of a list of one hundred fifteen words related to economics drawn by Williams from the literature, economics curriculum guides, elementary textbooks, and other sources. According to the expected vocabulary for elementary grades prepared

by Thorndike and Lorge (56), each word was positioned in the grade level at which these authors suggested that students have cognition of the word. To this list the investigator added nineteen economics-related words not included in Williams's list and placed them in suggested grade levels in the same manner.

This list of one hundred thirty-four words was then stratified according to the grade levels suggested by Thorndike and Lorge. By the use of a random digit table, twenty-five words were selected for inclusion in the final instrument: four words from each grade level one through five, and five words from the sixth grade level. The twenty-five concepts were then ordered randomly for their presentation to the subjects.

The subjects were asked orally the meaning of each word. Their conceptual definitions were evaluated as correct, partially correct, or incorrect according to the criteria set forth in the vocabulary section of the Wechsler Intelligence Scale for Children (61).

Data Sheet

A data sheet was designed for recording personal information relative to the demographic characteristics of each subject. This included the subject's school, grade level, age, sex, and race. For the purpose of determining the socio-economic status of a subject, the data sheet also solicited information on the occupation, employer, and educational background of each subject's family head.

Collection of the Data

The investigator conducted a personal interview with each subject during the period April 9 through 26, 1973. The interviews took place during regular school hours in locations specified by the principal of each school. Every attempt was made to provide a quiet, distraction-free environment for the interviews. The investigator conversed briefly with each subject prior to the actual interview to establish the desired rapport and acquaint the subject with the general purpose of the study.

Each subject was asked to give his school, homeroom teacher, grade level, and age. These were recorded on the data sheet along with the subject's race and sex. Information on the occupation, employer, and educational background of each subject's family head was obtained from the subjects' permanent school records and recorded on the data sheet.

The measure of economic experiences was given orally by the investigator as presented on the instrument. Subject responses were recorded as "yes" or "no." If a subject indicated that he did not understand what was being asked, the question was repeated as asked or rephrased in a simpler form. Space was provided on the schedule for the investigator to record explanatory notes or comments on some questions.

Each concept in the measure of economic understanding was presented orally to the subjects in the form given on the instrument. Each subject was urged to tell his notion or understanding of each

concept through definition, example, or any other verbal means. The investigator employed probe questions where necessary to encourage clarification or check understanding of a subject's response.

The investigator attempted to record the response to each item as it was made in the space provided on the schedule. The economic understanding portion of each interview was tape recorded, however, so these recordings were available for later referral and responses could be transcribed from them when necessary.

After all interviews had been completed, each response was scored by the investigator as "correct," "partially correct," or "incorrect" according to the criteria employed in scoring the vocabulary portion of the Wechsler Intelligence Scale for Children (61). An operational definition of each concept was taken or adapted from Webster's Third New International Dictionary (23). Two points were awarded for each "correct" response: a synonym; a major use; one or more definitive features or primary features of an object; the general classification to which the word belongs; and correct descriptive features which cumulatively indicate understanding of the word; or, for verbs, definitive examples of action and causal reactions. In general, a one point response was one which was not incorrect but which showed poverty of content. These "partially correct" responses included a vague or less pertinent synonym: a minor use, not elaborated; attributes which are correct but not definitive or distinguishing features; or an example using the word itself, not elaborated. No points were given for "incorrect" responses: obviously wrong answers; verbalisms in which no real understanding was shown after inquiry; not

totally incorrect responses, but those which, even after questioning, were very vague or trivial or showed great poverty of content; and failure to respond to the item.

Analysis of Data

Demographic Data

Some adjustment was necessary in the treatment of grade level as an independent variable due to the combination of grade levels three and four in some of the sample schools. The sampling plan yielded the following distribution of subjects in those grades: four third-grade students, four fourth-grade students, and sixteen students from a joint third-fourth grade level. Due to limitations imposed by the size of the sample, it was decided to combine all third, fourth, and third-fourth grade subjects into one grade level with the assigned numerical value of 3.5.

Hollingshead's Two Factor Index of Social Position (30) was used to determine the socio-economic status of each subject's family head. This measure employs the occupation and education of the family head, which are converted into numerical indexes. The occupational index score and the educational index score are weighted, then combined to yield an Index of Social Position. (See Appendix C.)

The resultant scores of socio-economic status can be divided into a hierarchy of score groups, for which Hollingshead provides guidelines, or arranged in a continuum. For the purposes of this study the scores were arranged in a dichotomy. The median score was determined, and subjects were designated as high or low

socio-economic status on the basis of whether their score of social position fell below or above this midpoint.

Economic Experience

Responses to the questions regarding economic experience, coded "1" for an affirmative answer and "0" for a negative answer, were tabulated by grade level and for the total sample. A working score of economic experience for each subject was obtained by totaling the number of affirmative responses. Subjects were divided on the basis of the median score into groups of "high" and "low" working scores of economic experience for scaling purposes.

For the purpose of constructing a Scale of Economic Experience, two criteria were established for the inclusion of an item in the scale:

- (1) response distribution to the item must be such that an affirmative response appears to contribute discriminately to "high" score of economic experience, and
- (2) an affirmative response to the item must correlate highly with all other items and with the working score of economic experience, according to the internal consistency method of scaling (25).

The first criterion was applied through the inspection of contingency tables for each item relating subject responses to "high" or "low" working scores. Five items could not meet this criterion and

were thus deleted. Inspection of a correlation matrix provided a means of applying the second criterion. One item did not correlate as required and was deleted.

This yielded a nine-item Scale of Economic Experience having a possible score range of zero to nine. Using this scale, each subject's working score of economic experience was replaced with an adjusted score of economic experience.

One of the economic experience items which could not meet the scaling criteria was Question 15, "Do you watch television?" One hundred per cent of the subjects answered this question affirmatively. Although additional query concerning viewing practices attempted to gather data regarding the amount of time spent watching television, the resultant response distributions were poor and inconsistent. The investigator recognized that the very design of the questions, specifically the non-comparable magnitudes of the given viewing periods, rendered the resultant data questionable as to meaningfulness. That "sometimes," "always," and "never" had ambiguous meanings to the subjects was apparent during the collection of data. Qualitative variation in the programming content of the given viewing periods introduced still another dimension of non-comparability of the data. Although a lengthy and complex statistical treatment could conceivably have yielded a quantitative variable for television viewing practice, the quest for such a variable was abandoned as necessitating an entire study in itself.

Economic Understanding

Scored responses to the vocabulary items were tabulated by grade level and for the total sample. A working score of economic understanding was obtained for each subject by the addition of all points scored. A Scale of Economic Understanding was constructed by the method described in the preceding section. Three items were deleted because no subjects could respond to them correctly. High levels of consistency were found between all items and the working score of economic understanding. The result was a Scale of Economic Understanding consisting of twenty-two items and having a possible score range of zero to forty-four. Adjusted scores of economic understanding were tabulated to replace the working scores.

Statistical Treatment

Pearson's product-moment correlation technique was employed to test for significant relationships between the scores of economic experience and the independent variables of grade level, age, sex, race, and socio-economic status, and between the scores of economic understanding and the independent variables of grade level, age, sex, race, socio-economic status, and score of economic experience.

A stepwise multiple regression analysis was used to estimate the collective relationship of the several independent variables to both the score of economic experience and the score of economic understanding, as well as to provide predictive equations for these scores.

RESULTS AND DISCUSSION

The Sample

The systematic, stratified random sample of seventy-two elementary school students, representative of 15,195 pupils enrolled in the public elementary schools of Greensboro, North Carolina, had the following demographic characteristics:

Twelve subjects (16.7 per cent) represented each of the following grade levels: one, two, five, and six. Twenty-four of the subjects (33.3 per cent) were from grade levels three, four, or joint three-four, all of which were combined for treatment purposes (Table 1).

TABLE 1
SUMMARY OF SUBJECTS BY GRADE LEVEL, SEX, AND RACE

Variable	Grade Level					Total
	1	2	3.5	5	6	
Sex						
Male	6	6	12	6	6	36
Female	6	6	12	6	6	36
Race						
White	6	6	12	6	6	36
Non-white	6	6	12	6	6	36
Total	12	12	24	12	12	72

One-half of the subjects in each grade were males, the other half females. Of the males and females in each grade level, one-half were white children and one-half were non-white children (Table 1). All of the non-white children were Negro.

The subjects ranged from six to twelve years of age with a mean age of 9.0 years. The age distribution by grade level is presented in Table 2.

TABLE 2
AGE OF SUBJECTS BY GRADE LEVEL

Age	Grade Level					Total
	1	2	3.5	5	6	
6	7					7
7	3	6				9
8	2	6	7			15
9			13			13
10			4	7		11
11				3	5	8
12				2	7	9
Total	12	12	24	12	12	72
Mean Age	6.6	7.5	8.9	10.58	11.58	9.0

Table 3 shows data regarding the educational levels of the subjects' family heads. Sixty-eight per cent of the family heads had completed at least a high school education. Eleven per cent were college graduates. Only four per cent had completed less than a junior high school education.

TABLE 3
EDUCATIONAL LEVEL OF FAMILY HEADS

	Educational Level (grades completed)					
	Less than 7	7-9	Some H.S.	H.S. Grad.	Some Coll.	Coll. Grad. or Prof.
Number	3	11	9	30	11	4
Percentage	4.2	15.3	12.5	41.7	15.3	5.6

Forty per cent of the family heads were employed as skilled or semi-skilled manual workers (Table 4). Almost one-fourth of the family heads were unskilled employees or were unemployed at the time of the study. Administrative personnel, owners of small businesses, minor professionals, clerical and sales workers, and technicians accounted for just over one-fourth of the family heads' occupations.

TABLE 4
OCCUPATION OF FAMILY HEADS

Occupation	Number	Percentage
Higher executives, proprietors of larger concerns, major professionals	4	5.6
Business Managers, proprietors of medium-size businesses, lesser professionals	3	4.2
Administrative personnel, small independent businesses, minor professionals	10	13.9
Clerical and sales workers, owners of small businesses, technicians	9	12.5

TABLE 4 (continued)

Skilled manual employees	17	23.6
Machine operators and semi-skilled employees	12	16.7
Unskilled employees and the unemployed	17	23.6

On the basis of Hollingshead's Two-Factor Index of Social Position (30), seventy-five per cent of the subjects were from the lower two social strata (Table 5). For treatment purposes, the subjects were evenly divided into "high" and "low" socio-economic groups at the median score.¹ On this basis, the socio-economic status distribution within grade levels was nearly equal.

TABLE 5

SOCIO-ECONOMIC STATUS OF SUBJECTS BY GRADE LEVEL

Socio-economic status	Grade Level					Total	
	1	2	3.5	5	6	No.	%
Group I 11-17	1	1	1	1		4	5.6
Group II 18-27				2		2	2.8
Group III 28-43	1	2	5	2	2	12	16.7
Group IV 44-60	7	7	7	3	6	30	41.7
Group V 61-77	3	2	11	4	4	24	33.3
	12	12	24	12	12	72	
Median Score							56.5
High 11-56	5	6	11	6	8	36	50.0
Low 57-77	7	6	13	6	4	36	50.0

¹It should be remembered throughout discussion and interpretation of the results that "high socio-economic status" does not connote the usual meaning of that phrase. In this case, the high socio-economic class is composed almost entirely of subjects from the third and fourth levels of the social strata.

Economic Experiences

Distributions of affirmative response to each of the fifteen questions relative to economic experience are shown in Table 6. Fifty subjects (69.4 per cent) reported that they were currently receiving or had previously received an allowance. Of this number, forty-five (90.0 per cent) acknowledged that they were required to perform certain work responsibilities or household chores in order to "earn" their allowances.

Of the thirty-two subjects not currently receiving an allowance, 90.6 per cent do earn some money at home. More than one-half (57.5 per cent) of those receiving an allowance earn additional money from their parents.

Only five of the subjects were currently holding regular jobs away from their homes. A newspaper delivery route was the most prevalent job.

Nearly four-fifths of the subjects indicated they had earned money from persons other than their parents. Friends and neighbors were the most frequent employers; yardwork and babysitting the most frequent jobs.

Saving money was reported by sixty-five subjects (90.3 per cent). Thirty-five per cent of those who save had a savings account in a bank or savings institution. Over four-fifths of those who save had a piggy bank or similar container in which they accumulated their savings. Two subjects turn savings over to their parents for safe keeping.

TABLE 6
ECONOMIC EXPERIENCES BY GRADE LEVEL

Experience	Grade Level					Total	
	1	2	3.5	5	6	No./	%
1. Receive allowance	5	4	17	6	8	40	55.6
Have received allowance	2	4		1	3	10	13.9
Must "earn" allowance	5	8	15	6	11	45	90.0
2. Earn some money (not receiving allowance)	3	2	11	6	7	29	90.6
Earn additional money (receiving allowance)	6	6	5	3	3	23	57.5
3. Holding regular job (away from home)		2		1	2	5	6.9
4. Have earned money from persons other than parents	12	7	18	9	11	57	79.1
Sources:							
Friends and neighbors	11	4	15	7	7	42	73.6
Relatives	2	2	2	2	2	10	17.3
Others	1		1		3	5	8.8
Jobs:							
Yardwork	6	2	11	4	4	27	47.4
Babysitting	1	1	2	1	4	9	15.8
Housework	2		1	2		5	8.8
Other	1	2	4	2	3	12	21.1
5. Save money	10	12	22	9	12	65	90.3
Savings account	2	4	8	5	4	23	35.5
Give to parents	2						
Piggy bank or facsimile	9	11	18	5	4	53	81.5
6. Borrow money	7	5	14	8	7	41	56.9
In family	4	3	13	6	6	32	78.0
Out of family	3	2	2	3	2	12	29.3

TABLE 6 (continued)

Experience	Grade Level					Total	
	1	2	3.5	5	6	No.	%
7. Loan money	5	9	21	11	11	57	79.2
In family	3	5	17	6	4	35	61.4
Out of family	4	4	7	7	8	30	52.6
8. Purchase on credit or use of credit card	0	0	0	0	0	0	0.0
9. Decide how to spend own money	10	12	20	9	9	60	83.3
10. Shop without parents	0	2	9	7	8	26	36.1
11. Shop with parents	12	12	24	12	12	72	100.0
12. Participate in family financial decisions	1	2	7	4	4	18	25.0
13. Have played money games	10	12	23	12	12	69	95.8
14. Have had selling experience	4	5	16	6	9	40	55.6
Used toys	2	1	9	2	3	17	42.5
Refreshments	1	2	3			6	15.0
Fund-raising products	2	2	5	5	2	16	40.0
Other		1	2	2	2	7	17.5
15. Watch television	12	12	24	12	12	72	100.0

Almost sixty per cent of the subjects had borrowed money. Lending money was reported by almost eighty per cent. Borrowing and lending took place more often inside than outside the subjects' families. None of the subjects had made purchases on credit or used a credit card.

More than eighty per cent of the subjects acknowledged making their own decisions concerning how to spend their money. All subjects shop

with their parents, but just more than one-third are allowed to shop without their parents. One-fourth of the subjects had participated in family budget or purchasing decisions.

Almost all of the subjects (95.8 per cent) had played games involving "play money," such as Monopoly^R or The Game of Life^R. Forty subjects (55.6 per cent) reported selling experiences. Used toys and fund-raising products were the items most frequently sold.

One hundred per cent of the subjects reported that they watch television.

Scale of Economic Experience

A Scale of Economic Experience was constructed by the internal consistency method as described in the section Analysis of Data (see p. 28). Questions 5, 8, 9, 11, 13, and 15 were deleted because they did not meet the scaling criteria. This resulted in a nine-item Scale of Economic Experience having a possible score range of zero to nine.

The mean score of economic experience for all subjects was 4.83 with a standard deviation of 1.88. Means for the several subgroups within the sample are shown in Table 7. Differences between the means presented were not tested for significance.

TABLE 7
 MEAN SCORES OF ECONOMIC EXPERIENCE BY
 INDEPENDENT VARIABLES

Variable	Sub-group	Mean Score
Sex	Male	5.61
	Female	4.06
Race	White	5.08
	Non-white	4.58
Socio-economic Status	High	5.31
	Low	4.36
Grade Level	1	3.93
	2	3.92
	3.5	4.29
	5	5.16
	6	6.92
	Age	6
7		4.00
8		3.80
9		5.08
10		5.18
11		6.25
12		5.44
All Subjects		4.83
Standard Deviation		1.88

All mean scores of economic experience were higher for males, for white subjects, and for subjects in the high socio-economic group than for females, non-white subjects, and subjects in the low socio-economic group. As will be discussed later, differences between the white and non-white subjects' scores of economic experience are believed to be attributable to socio-economic differences between the races. Differences in experience according to socio-economic status were anticipated by the investigator. Danziger (15) had pointed out that income and social class are major determinants of the experiences open to an individual.

As expected, an increase in the mean score of economic experience across the five grade levels can be observed. However, contrary to the presumption that older children will have had more economic experience, the mean scores of economic experience did not consistently increase across age levels. The older children did show higher scores as a group, however, than did the younger children. It was expected that the close association between age and grade level would cause them to be very similarly related to economic experience. These findings, and others to be reported, suggest the grade level is more closely related to economic experience than is age.

Correlation

Correlation coefficients were employed in direct testing of the hypothesis involving economic experience. For the purpose of both correlation and multiple regression, the independent variables were assigned numerical code values as shown in Table 8. Grade level and age were coded as linear variables (actual age or grade); the other variables were coded as dichotomous, or "dummy," variables.

TABLE 8
NUMERICAL VALUES ASSIGNED TO INDEPENDENT VARIABLES

Variable	Code	Variable	Code
Grade Level	1	Age:	6
	2		7
	3		8
	4		9
	3 & 4		10
	5		11
	6		12
Sex: Female	1	Socio-economic Status	
Male	0	Low	0
Race: White	1	Upper	1
Non-white	0		

The Pearson product-moment correlation coefficients between the sample scores of economic experience and the independent variables of grade level, age, sex, race, and socio-economic status are presented in Table 9. These are univariate correlation coefficients between the scores of economic experience and each of the independent variables. (A complete correlation matrix is presented in Appendix D).

TABLE 9
CORRELATION COEFFICIENTS BETWEEN ECONOMIC
EXPERIENCE AND THE INDEPENDENT VARIABLES

Independent Variables	r	p
Sex	-.417	< .001
Grade Level	.399	< .001
Age	.312	< .01
Socio-economic Status	.253	< .05
Race	.134	ns

The correlation coefficient between economic experience and sex of -0.417 is statistically significant at the .001 level. It indicates that females show a moderate tendency to have less economic experience.

The correlation coefficients of grade level and age with economic experience are also statistically significant at the .01 level. Increase in grade level or age is associated with an increase in the score of economic experience.

Belonging to the high socio-economic group correlated positively with the score of economic experience. The high socio-economic status subjects tended to yield higher scores of economic experience.

Race did not correlate significantly with economic experience, although a very slight positive association of 0.134 indicated white subjects had higher scores of economic experience.

Multiple Regression

A stepwise multiple regression of the scores of economic experience on the independent variables of grade level, age, sex, race, and socio-economic status produced the estimated regression equation data shown in Table 10. (A review of the multiple regression technique is presented in Appendix E). The estimated regression coefficients are presented in the order in which the variables entered the equation.

TABLE 10
ECONOMIC EXPERIENCE: MULTIPLE REGRESSION EQUATION
ESTIMATED FROM ALL VARIABLES

Variables	Estimated Coefficients	Standard Error	F (D.F. =1,66)	Level of Significance
Sex	-1.50	0.36	17.256	.001
Grade level	0.78	0.30	6.575	.05
Socio-economic Status	0.58	0.49	1.377	ns
Age	-0.35	0.28	1.605	ns
Race	0.05	0.49	0.013	ns
Constant Term	6.31			
Multiple R	0.618			
Standard Error	1.53			
R ²	0.382			
F (D.F.=5,66)	8.147*			

*Significant at the .001 level.

Stated in the form of an equation, the above data would be written as follows:

$$y = -1.5(\text{Sex}) + .78(\text{Grade}) + .58(\text{SES}) + .35(\text{Age}) - .05(\text{Race}) + 6.31 \quad (\text{Eq. 1})$$

where y is the predicted score of economic experience.

Statistics relative to the strength and significance of the estimated regression equation are presented in Table 10. The multiple correlation coefficient of .618 indicates a moderate positive association between the linear weighting of the variables produced by the equation and the dependent variable—economic experience. This regression equation estimates the score of economic experience with a standard error of 1.53. R^2 , called the coefficient of multiple determination, is a measure of the amount of variation in the dependent variable which is explained by the regression equation. In this case, 38.2 per cent of the variance in the sample scores of economic experience is explained by the estimated regression equation. This indicates that other variables not considered in this study must contribute to the score of economic experience.

A subject's sex was shown to be the single most powerful predictor of his score of economic experience. Specifically, on the basis of sex alone, females will have lower scores of economic experience than males.

Grade level was recognized as the second best predictor of the score of economic experience when considered jointly with the sex of a subject. The positive sign of the coefficient indicates a direct relationship; the higher a subject's grade level, the higher will be his score of economic experience.

In conjunction with sex and grade level, a subject's socio-economic status is the third most useful predictor of his economic experience score. Belonging to the high socio-economic group has a positive effect on the score.

The full prediction equation as presented in Table 10 is offered as an overview of the contribution of all variables. One of the advantages of the stepwise multiple regression technique is that at each step the investigator can assess whether the added variable contributes significantly to prediction. This can be evaluated by inspecting changes in the multiple R, the standard error of the estimate, and the F-ratio testing the significance of that variable's contribution. This procedure suggests that in the present case optimum efficiency of prediction could be achieved by using only three independent variables: sex, grade level, and socio-economic status. Table 11 shows resultant changes in the multiple R value as each of these variables is added to the prediction equation. It also shows the significance of each variable's contribution in this prediction equation. The coefficients and constant shown are the values which would be used in prediction from these three variables alone.

TABLE 11

ECONOMIC EXPERIENCE: MULTIPLE REGRESSION EQUATION
ESTIMATED FROM SEX, GRADE LEVEL,
AND SOCIO-ECONOMIC STATUS

Variable Added	Coefficients	Multiple R	Significance of Variable*
Sex	-1.51	.417	.001
Grade Level	0.42	.577	.001
Socio-economic Status	0.69	.605	<.10 >.05
Constant Term	4.48		

*Degrees of freedom = 1,68.

Written in equation form, the prediction of economic experience from sex, grade level, and socio-economic status would be as follows:

$$y = -1.51(\text{Sex}) + .42(\text{Grade}) + .69(\text{SES}) + 4.48 \quad (\text{Equation 2})$$

The inclusion of age after socio-economic status had a minimal effect on the multiple R, increasing it only from .605 to .618. The contribution of age was not significant. Race made even a smaller contribution to the multiple R, and it too was not significant.

Actually, the inclusion of social class is debatable in that the increment in the multiple R was small and its contribution only marginally significant. For practical purposes, it might be remembered that sex and grade level are easily measured while socio-economic status requires considerable computation. For those who wish to sacrifice the slight gain in efficiency of prediction which results from including socio-economic status, the coefficient and constant term for the prediction equation using only sex and grade level are also presented in Equation 3.

$$y = -1.56(\text{Sex}) + .44(\text{Grade}) + 4.07 \quad (\text{Equation 3})$$

It is important to note that the insignificant contribution of age is due to its extremely high correlation with grade level ($r = .933$). The easiest way to explain this is by the analogy of partial correlation. If two independent variables relate highly to each other and both relate to a dependent variable, controlling for either independent variable will cause the association of the other with the dependent measure to disappear or be drastically reduced (7). The implication of this

statement is that if age, but not grade level, had been entered in the equation, it would have been found to be a significant predictor. It will be remembered that the univariate correlation between age and economic experience was significant.

The case of race is somewhat more complex. It did correlate with socio-economic status rather highly ($r = .667$), so that the same might hold true for this pair of independent variables. However, it will be remembered that socio-economic status correlated significantly with economic experience while race did not. It seems more reasonable to assume that the small correlation between race and economic experience, if meaningful at all, was actually produced by socio-economic differences between the races.

Economic Understanding

Distribution among the three categories of response are presented in Table 12 for each of the economic understanding items. One of the concepts, "to manufacture something," could not be defined correctly by any of the subjects, but was partially defined by almost one-third of the subjects. "A consumer" was partially defined by one subject, but no subjects were able to even partially define "economics" or "a liability."

Table 13 shows the number of subjects in each grade level who responded correctly (two-point responses) to each concept. Somewhat of a pattern is discernable in the order in which the concepts were correctly defined by at least fifty per cent of the subjects in a grade level. "To be poor" and "to save" were the first concepts to be understood by the lower grade level subjects. Both of these concepts involve

allocation and consumption. "Customer" and "to spend money" were additional concepts defined by at least fifty per cent of the middle grade level subjects. These concepts relate to the process of exchange, particularly the purchase situation. At the fifth grade level, two concepts associated with ownership and asset-holding were added to those identified by at least one-half of the subjects: "to own something" and "insurance." No pattern was observed in the order of concept learning at the sixth grade level.

TABLE 12
SUBJECT RESPONSES TO ECONOMIC CONCEPTS

Concepts	Responses					
	Correct		Partially Correct		Incorrect	
	No. /	Per cent	No./	Per cent	No./Per cent	
1. to own something	35	48.6	17	23.6	20	27.8
2. income	1	1.4	2	2.8	69	95.8
3. to be employed	10	13.9	2	2.8	39	54.2
4. a customer	44	61.1	7	9.7	21	29.2
5. a luxury	2	2.8	4	5.6	66	91.7
6. a budget	4	5.6	5	6.9	63	87.5
7. a product	8	11.1	28	38.9	36	50.0
8. an expense	7	9.7	5	6.9	60	83.3
9. taxes	5	6.9	26	36.1	41	56.9
10. to manufacture something	0	0.0	23	31.9	49	68.1
11. to waste something	15	20.8	45	62.5	12	16.7
12. a consumer	0	0.0	1	1.4	71	98.6
13. to spend money	25	34.7	42	58.3	5	6.9
14. insurance	13	18.1	16	22.2	43	59.7
15. economics	0	0.0	0	0.0	0	0.0
16. resources	1	1.4	10	13.9	61	84.7
17. a business	3	4.2	24	33.3	45	62.5
18. to save	51	70.8	21	29.1	0	0.0
19. a liability	0	0.0	0	0.0	0	0.0
20. a debt	10	13.9	10	13.9	52	72.2
21. management	2	2.8	22	30.6	48	66.7
22. to be poor	59	81.9	8	11.1	5	6.9
23. advertisement	17	23.6	20	27.8	35	48.6
24. profit	4	5.6	7	9.7	61	84.7
25. an investment	2	2.8	9	12.5	61	84.7

TABLE 13
 NUMBER OF SUBJECTS RESPONDING CORRECTLY
 TO EACH CONCEPT BY GRADE LEVEL

Concepts	Grade Level					Total
	1	2	3.5	5	6	
1. To own something	3	2	10*	11*	9*	35
2. Income	0	0	0	0	1	1
3. To be employed	0	0	2	2	6*	10
4. Customer	5	5	16*	8*	10*	44
5. A luxury	0	0	0	1	1	2
6. A budget	0	0	0	2	2	4
7. A product	0	0	3	2	3	8
8. An expense	0	1	0	3	3	7
9. Taxes	0	0	0	3	2	5
10. To manufacture something	0	0	0	0	0	0
11. To waste something	2	1	1	5	6*	15
12. A consumer	0	0	0	0	0	0
13. To spend money	2	2	9*	4	8*	25
14. Insurance	0	0	0	6*	7*	13
15. Economics	0	0	0	0	0	0
16. Resources	0	0	0	0	1	1
17. A business	0	0	0	1	2	3
18. To save	3	6*	18*	12*	12*	51
19. A liability	0	0	0	0	0	0
20. A debt	0	0	2	2	6*	10
21. Management	0	0	1	0	1	2
22. To be poor	8*	11*	18*	10*	12*	59
23. An advertisement	0	0	4	5	8*	17
24. Profit	0	0	0	2	2	4
25. An investment	0	0	0	2	0	2

*The concept was correctly defined by at least 50 per cent of the subjects in that grade level.

Scale of Economic Understanding

Only three items were eliminated from the set of vocabulary items in constructing a Scale of Economic Understanding. (See page 30.) Items 12, 15, and 19 were deleted because they did not meet the scoring criteria. This resulted in a Scale of Economic Understanding composed

of twenty-two items. With values of two assigned for a "correct" response, one for a "partially correct" response, and zero for an "incorrect" response or no response, the possible scores could range from zero to forty-four.

The mean score of economic understanding for all subjects was 13.96 with a standard deviation of 8.12 (Table 14).

TABLE 14
MEAN SCORES OF ECONOMIC UNDERSTANDING BY
INDEPENDENT VARIABLES

Variable	Sub-group	Mean Score
Sex	Male	15.39
	Female	12.56
Race	White	16.22
	Non-white	11.72
Socio-economic Status	High	16.64
	Low	11.03
Grade Level	1	7.75
	2	8.67
	3.5	12.50
	5	19.50
	6	22.90
Age	6	8.43
	7	9.22
	8	10.0
	9	13.50
	10	16.0
	11	22.30
	12	21.0
All subjects		13.96
Standard Deviation		8.12

Mean scores of economic understanding were higher for males, for white subjects, and for subjects from the high socio-economic group than for

females, non-white subjects, and subjects from the low socio-economic group.

Schuessler and Strauss (51 and 55) had found sex to be of no significance in understanding of the concept "money." Williams (62) and Miles (43) also found no significant difference between boys and girls in their understanding of money concepts. However, in light of the previously discussed difference in the economic experience of males and females, a difference in their mean scores of economic understanding is not unexpected.

In the research conducted by Schuessler and Strauss (51 and 55), differences in understanding were noted between upper and middle social class children. Other researchers have also confirmed positive associations between socio-economic status and such measures of understanding as vocabulary development and academic achievement (22 and 28). Differences in economic understanding on the basis of socio-economic status are born out by the data in this study. The observed differences between white and non-white subjects in economic understanding are believed to reflect socio-economic differences between the races, as discussed previously.

An expected increase in mean scores of economic understanding can be observed across grade levels. Grade level and age were both assumed, in general, to reflect the different levels of knowledge and mental ability possessed by the subjects. As with scores of economic experience, however, mean scores of economic understanding do not consistently increase with the age of the subjects. The mean score of economic understanding decreases between age eleven and age

twelve. An explanation of this phenomenon is not readily apparent. Previous studies had found chronological age to be a significant variable of understanding (5, 18, 51, 55, and 62).

Correlation

Correlation of the scores of economic understanding with the independent variables of grade level, age, sex, race, socio-economic status, and score of economic experience yielded the Pearson product-moment correlation coefficients presented in Table 15.

TABLE 15

CORRELATION COEFFICIENTS BETWEEN ECONOMIC UNDERSTANDING AND THE INDEPENDENT VARIABLES

Independent Variable	r	P
Grade Level	0.666	<.001
Age	0.575	.001
Economic experience	0.517	.001
Socio-economic status	0.366	< .01
Race	0.279	< .05
Sex	-0.176	ns

Grade level was the independent variable correlating most highly with the score of economic understanding. As would be expected, the higher a subject's grade level, the higher his score of economic understanding is likely to be. Age, which so closely parallels grade level, also correlated positively with the score of economic understanding

but the correlation of .575 was slightly lower than that with grade level, .666. Both coefficients are significantly different from zero at the .001 level.

The scores of economic experience and scores of economic understanding yielded a positive association. The correlation coefficient of .517 was significant at the .001 level.

Subjects of the high socio-economic group scored higher on economic understanding than did those of the low group. A positive association was observed between white subjects and higher scores of economic understanding. Although the correlations were rather small, both socio-economic status and race correlated significantly with economic understanding.

Sex did not correlate significantly with economic understanding, although a weak association was observed between females and lower scores of economic understanding.

Multiple Regression

A stepwise multiple regression of the scores of economic understanding on the independent variables of grade level, age, sex, race, socio-economic status, and scores of economic experience produced the estimated regression equation data shown in Table 16. The estimated coefficients are presented in the order in which they entered the equation.

TABLE 16
 ECONOMIC UNDERSTANDING: MULTIPLE REGRESSION
 EQUATION ESTIMATED FROM ALL VARIABLES

Variables	Estimated Coefficients	Standard Error of the Estimate	F (D.F. = 1, 65)	Level of Significance
Constant term	4.37			
Grade Level	3.42	1.12	9.338	.001
Socio-economic Status	1.99	1.76	1.284	ns
Economic Experience	0.81	0.43	3.526	ns
Race	2.65	1.72	2.379	ns
Sex	-1.42	1.43	0.979	ns
Age	-0.66	0.99	0.437	ns
Multiple R	0.771			
Standard error of est.	5.40			
R ²	0.595			
F (D.F. = 6 and 65)	15.891*			

*Significant at the .001 level.

Written in the form of an equation, the above data would appear as follows:

$$y = 3.42(\text{Grade}) + 1.99(\text{SES}) + 0.81(\text{Econ. Exp}) + 2.65(\text{Race}) - 1.42(\text{Sex}) - 0.66(\text{Age}) + 4.37. \quad (\text{Equation 4})$$

where y = the predicted score of economic experience

This regression equation has a multiple correlation coefficient of .771, indicating a rather strong positive association between economic understanding and the set of independent variables as weighted by the estimated coefficients. Nearly sixty per cent of the variance in the sample scores of economic understanding is explained by this estimated regression equation. The standard error of the estimated value of economic understanding is 5.40.

A subject's grade level was identified by the computer analysis as the single best predictor of his score of economic understanding. The higher a subject's grade level, the higher will be his score.

The socio-economic status of a subject was recognized as the second most powerful explanatory variable of economic understanding when considered jointly with grade level. Belonging to the high socio-economic group has a positive effect on one's score of economic understanding.

In conjunction with grade level and socio-economic status, a subject's score of economic experience is the third most important predictor of his score of economic understanding. The higher a student scores on economic experience, the higher will be his estimated score of economic understanding.

As with economic experience, the full prediction equation for economic understanding is offered in Table 16 as an overview of the contribution of all the independent variables. Again, inspection of the evaluative statistics—the multiple R, the standard error of the estimate, and the F-ratio testing the significance of each variable's contribution—suggests that optimum efficiency of prediction could be achieved with fewer than the full set of independent variables. In this case, the combination of grade level, socio-economic status, and economic experience appears to be optimal for the prediction of economic understanding. Table 17 shows resultant changes in the multiple R as each of these variables is added to the equation. It also shows the significance of each variable's contribution in the prediction equation. The coefficients and constant shown are the values which would be used in prediction from these three variables alone.

TABLE 17

ECONOMIC UNDERSTANDING: MULTIPLE REGRESSION EQUATION
ESTIMATED FROM GRADE LEVEL, SOCIO-
ECONOMIC STATUS, AND ECONOMIC EXPERIENCE SCORE

Variable Added	Coefficients	Multiple R	Significance* of Variable
Grade level	2.59	.666	.001
Socio-economic Status	3.83	.725	.01
Economic Experience	1.04	.756	.01
Constant	1.79		

*Degrees of Freedom = 1,68.

The equation for predicting economic understanding from grade level, socio-economic status, and scores of economic experience would then be written as follows:

$$y = 2.59(\text{Grade}) + 3.83(\text{SES}) + 1.04(\text{Econ. Exp.}) + 1.79 \quad (\text{Equation 5})$$

The subsequent addition of race, sex, and age to the equation produced only slight increment in the multiple R value, and the contributions of these variables were not significant. It will be remembered from the discussion of the predictive equation for economic experience that the insignificant contributions of age and race were due to their high correlations with grade level and socio-economic status, respectively. It is assumed that these same associations are also responsible for the insignificant contributions of age and race to the prediction of economic understanding. Both variables exhibited significant univariate correlations with economic understanding. Sex may be judged simply not to contribute to prediction of economic understanding in

that the sexes do not differ on this variable (non-significant univariate correlation between sex and economic understanding.)

Gradient of Economic Concepts

For the benefit of those interested in utilizing or adapting the Scale of Economic Understanding employed in this study, a gradient of the economic concepts, based on their relative difficulty, was constructed. This gradient is presented in Table 18. Placement of the items in the gradient was determined by the mean response score for each item.

TABLE 18
DIFFICULTY GRADIENT OF ECONOMIC CONCEPTS

Concept	Mean Score	S.D.	Concept	Mean Score	S.D.
To be poor	1.750	.575	Management	.361	.539
To save	1.708	.458	To manufacture		
Customer	1.319	.901	something	.319	.470
To spend money	1.278	.587	An expense	.264	.628
To own something	1.208	.855	Profit	.208	.529
To waste something	1.042	.615	An investment	.181	.454
Advertisement	.750	.818	A budget	.181	.513
Product	.611	.683	Resources	.167	.411
To be employed	.597	.725	A luxury	.111	.396
Insurance	.583	.783	Income	.056	.285
Taxes	.500	.628	Consumer	.014	.118
A business	.417	.575	Economics	.000	.000
A debt	.417	.727	Liability	.000	.000

Testing of Hypotheses

Correlation and multiple regression techniques were employed in testing of the hypotheses of this study. The hypothesis of association between economic experience and the set of independent variables was accepted at the .05 level of significance with the exception of one variable. Significant relationships were found between the scores of economic experience and grade level, age, sex, and socio-economic status. Race was not significantly related to economic experience.

As hypothesized, grade level, age, race, socio-economic status, and economic experience are significantly related to the scores of economic understanding at the .05 level. The hypothesis that sex is significantly related to economic experience was not accepted. Also accepted was the sub-hypothesis that grade level, age, and economic experience would show positive association with economic understanding.

SUMMARY AND CONCLUSIONS

Description of the Problem

This study was conceived in light of an increasing interest in the economic behavior of individuals. The typical adult simultaneously performs several economic roles--producer, consumer, facilitator of exchange--each requiring specialized knowledge and skills. Current economic phenomena, such as unemployment and inflation, environmental depletion and pollution, and rising family incomes, necessitate even greater facility of an individual in his economic behavior and decision-making.

The extent to which a person successfully and responsibly carries out his economic activities affects not only his personal well-being, but also that of society. It is for this reason that concern has arisen relative to the preparation of individuals for knowledgeable economic behavior. Particularly, society is recognizing the importance of preparing young people at an early age for their economic roles.

Investigation into the preparation of individuals for their economic roles leads directly to the question of how such roles are learned. Specifically, in what ways do individuals learn the economic behavior considered as appropriate in our society? What factors contribute to or influence the acquisition of knowledge, attitudes, and values relevant to economic behavior?

One of the more cogent hypotheses concerning the learning of economic behavior is that it is acquired through a process of

socialization--through interaction within social groups. If this is so, research is needed to identify the agents of economic socialization; to define the scope, sequence, and process of economic learning; and to identify social and personal variables which significantly affect economic socialization.

The purpose of this study was to investigate the economic socialization of elementary school children relative to their understanding of selected economic concepts and their economic experiences; also, to investigate the relationship of certain demographic variables to their economic learning.

It was hypothesized that economic experience would be significantly related to a child's grade level, age, sex, race, and socio-economic status; also, that economic understanding would be significantly related to those same variables plus a subject's economic experience. Positive relationships were hypothesized between economic understanding and grade level, age, and economic experience.

Methods and Procedures

The population selected for investigation was all pupils enrolled during the 1972-73 school year in grades one through six in the public elementary schools of Greensboro, North Carolina. A systematic, stratified random sample of seventy-two pupils was selected from the total population of 15,195 students.

An interview schedule and data sheet were adapted or developed to investigate the economic experiences and economic understanding of elementary school children. The interview schedule consisted of a

fifteen-item questionnaire concerning economic experiences and an oral vocabulary measure of economic understanding. Responses to the vocabulary items were scored as "correct," "partially correct," or "incorrect." The data sheet was used to record demographic data gathered from the subjects' permanent school records.

The data were collected through personal interviews conducted by the investigator during the period of April 9 through April 26, 1973. In the event that a selected subject was unable to participate in the study, substitution was made by predetermined methods.

Responses were tabulated for the total sample and several subgroups according to the independent variables. Scales of Economic Experience and Economic Understanding were constructed by the internal consistency method. Relationships between these measures and the independent variables of grade level, age, sex, race, and socio-economic status were measured by both the univariate Pearson product-moment correlation technique and a stepwise multiple regression analysis.

Results

The Sample

Each of the grade levels was represented by twelve subjects, with the exception of grades three and four. These grades were combined for treatment purposes into a grade level of 3.5, which was represented by twenty-four subjects.

Within each grade level, the two sexes were equally represented. Each sex group was, in turn, composed equally of white and non-white

subjects. The seventy-two subjects ranged from six to twelve years of age, with a mean age of 9.0 years.

Sixty-eight per cent of the subjects' family heads were high school graduates. Eleven per cent of the family heads were college graduates. Only four per cent had completed fewer than seven years of school.

Forty per cent of the subjects' family heads were employed as skilled or semi-skilled manual workers. Nearly one-fourth of the family heads were unskilled employees or were unemployed at the time of the study. Administrative personnel, owners of small businesses, minor professionals, clerical and sales workers, and technicians accounted for just more than one-fourth of the family heads.

Seventy-five per cent of the subjects were from the lower two-fifths of the social strata, as determined by Hollingshead's Two Factor Index of Social Position (30). For treatment purposes, however, the subjects were dichotomized into "high" and "low" socio-economic groups.

Economic Experiences

Univariate correlation techniques showed economic experience to be significantly related to a subject's sex, grade level, age, and socio-economic status. Females tended to have lower scores of economic experience than males. Increase in grade level or age was associated with an increase in economic experience. Subjects from the high socio-economic group tended to yield higher scores of economic experience than those from the low socio-economic group. Race did not correlate significantly with economic experience, though there was a slight tendency for white

subjects to have higher scores of economic experience than non-white subjects.

A stepwise multiple regression of the scores of economic experience on the five independent variables yielded the following estimated regression equation:

$$y = -1.5(\text{Sex}) + .78(\text{Grade}) + .58(\text{SES}) - .35(\text{Age}) + .05(\text{Race}) + 6.31$$

where y is the estimated score of economic experience. The multiple R value for this equation is .618, and it accounts for 38.2 per cent of the variance in sample scores of economic experience.

It was determined through inspection of the evaluative statistics that optimum efficiency of prediction could be achieved by using only the first three variables. The subsequent addition of age and race did not contribute significantly to reduction of the prediction error. Using only sex, grade level, and socio-economic status, the equation would be written

$$y = -1.51(\text{Sex}) + .42(\text{Grade}) + .69(\text{SES}) + 4.48$$

The multiple R value is .605, and this equation explains 36.6 per cent of the variance in sample scores of economic experience.

It was recognized that the insignificant contributions of age and race were due to their high correlations with grade level and socio-economic status, respectively.

Economic Understanding

Economic understanding was shown to be significantly related to a subject's grade level, age economic experience, socio-economic status, and race. Higher grade levels and ages were associated with higher scores

of economic understanding. The higher a subject's score of economic experience, the higher was likely to be his score of economic understanding. Subjects from the high socio-economic group tended to have higher scores of economic understanding than those from the low socio-economic group. White subjects yielded higher scores of economic understanding than non-white subjects. Sex did not correlate significantly with economic understanding, though a slight tendency for females to score lower than males was observed.

A stepwise multiple regression of the scores of economic understanding on the six independent variables produced the following equation:

$$y = 3.42(\text{Grade}) + 1.99(\text{SES}) + .81(\text{Econ. Exp.}) + 2.65(\text{Race}) - 1.42(\text{Sex}) \\ - .66(\text{Age}) + 4.37$$

where y is the estimated score of economic understanding. This equation has a multiple correlation coefficient of .771 and accounts for almost sixty per cent of the variance in the sample scores of economic understanding.

An equation using only grade level, socio-economic status, and score of economic experience was suggested as optimal for predictive efficiency. Subsequent addition of age, sex, and race did not contribute significantly to reduction of the prediction error. This equation has a multiple R value of .756 and is written

$$y = 2.59(\text{Grade}) + 3.83(\text{SES}) + 1.04(\text{Econ. Exp.}) + 1.79$$

It explains 57.1 per cent of the variance in the sample scores of economic understanding.

A gradient of the twenty-five economic concepts was constructed for the benefit of those who may wish to use or adapt the Scale of

Economic Understanding. The concepts were ordered by relative difficulty on the basis of the mean response score for each item.

Hypotheses

The .05 level of significance was used as the criterion for acceptance of the hypotheses. Scores of economic experience were shown to be significantly related to grade level, age, sex, and socio-economic status, as hypothesized. The hypothesis of association between economic experience and race, however, was not accepted.

The hypothesis of significant relationships between economic understanding and grade level, age, race, socio-economic status, and economic experience was accepted. Also accepted was the sub-hypothesis that grade level, age, and economic experience would be positively associated with economic understanding. Sex was not significantly related to economic understanding.

Conclusions

Elementary school children, in general, participate in a variety of economic activities involving the processes of consumption, production, exchange, and allocation. They also have varying degrees of understanding of economic concepts relative to these same economic processes.

Economic experience is most significantly related to a child's sex. The finding that girls tend to have less economic experience than boys is surprising when one recognizes that the adult female frequently assumes the role of primary purchasing agent for the

family. It is possible that sex discrimination in business and financial matters exists even at the elementary school level. The causes for this difference in economic experience between the sexes was not apparent in this study. The possibility of bias in the Scale of Economic Experience must, however, be recognized. If the instrument included primarily "male" economic experiences and overlooked significant "female" economic experiences, the resultant scores of economic experience would be biased in favor of the boys. It is notable that girls did not score significantly lower than boys in economic understanding. It may be that their better academic achievement during the elementary school years compensates for their lack of economic experience. Further research is needed to investigate the specific nature of the relationship of sex to economic learning.

Experience with economic activities appears to be a significant factor in the economic understanding of individuals. Those subjects who had higher scores of economic experience tended also to have higher scores of economic understanding. This significant relationship between experience and understanding is presumed to attest to the validity of the Scale of Economic Experience.

Grade level and age are significantly related to both economic experience and economic understanding, although grade level appears to be the more influential. Grade and age correlate very highly with each other, and an explanation for the greater influence of grade level is not readily apparent. It may be that the economic activities of a child are influenced significantly by those of his

peer group. Among school-age children, the peer group is more often composed of grade-mates than age-mates when the two do not overlap.

As for economic understanding, age and grade were both presumed to reflect increasing knowledge and mental ability. No attempt was made, however, to identify differences in subject-matter content among the several grades. If economic principles were taught at some grade levels, students in those grade levels would probably score higher than their age-mates in other grade levels. This would account for the more significant influence of grade level than of age on economic understanding.

Socio-economic status also relates significantly to both economic experience and economic understanding. Subjects from the high socio-economic group tended to score higher in both areas. It is recognized, however, that this "high" socio-economic group is composed primarily of subjects from the middle and lower regions of the social scale. An even distribution of subjects among the social strata would be more revealing of the relationship of socio-economic status to economic experience and understanding. Additional research is needed to identify which aspects of socio-economic status are responsible for the associations. Suggested as important factors are the amount of money available to a child for personal use, the degree of responsibility he is expected to assume for family economic activities, the educational levels of his parents, and parental aspirations for the child.

Race relates significantly to economic understanding but not to economic experience. There was a slight tendency for white subjects to have higher scores of economic understanding than non-white subjects. Due to the correlation between race and socio-economic status in this study, it is believed that this association between race and economic understanding actually reflects socio-economic differences between the races.

Implications for Use

A reasonably accurate and significant prediction of a subject's score of economic understanding can be obtained through an estimated multiple regression equation employing the variables of grade level, socio-economic status, and the score of economic experience. This equation provides a means by which elementary curriculum specialists and classroom teachers can assess the relative development of classroom learning in a population of students. The resultant distribution of predicted scores of economic understanding can serve as a basis for determining the level of sophistication at which economic instruction should be presented. Also, it can reveal relative differences in economic learning among the students in a classroom, enabling the teacher to identify those students having deficiencies in economic understanding. No attempt has been made to present standardized scores of economic understanding for each grade level with which to compare the results of classroom use. It is recommended that the predictive equation be used only to assess relative differences in economic learning within a population.

Recognizing the numerous responsibilities of classroom teachers, the amount of time and effort required by the estimation process is important to the usefulness of the prediction equation. Grade level is, of course, known to the teacher. Determination of socio-economic status by the Two Factor Index of Social Position requires knowledge of the occupation and educational level of each subject's family head--information readily available in the student's permanent school records. This information is easily converted into a numerical index (see Appendix C.) The score of economic experience is obtained by administration of the Scale of Economic Experience. Consisting of nine "yes-no" questions, this measure is quickly administered and scored as a paper and pencil test. The numerical values for each variable are then substituted in the equation and the predicted score computed.

Recommendations for Further Research

Further research is needed to identify specific causes of different scores of economic experience between boys and girls. Also, an even distribution of subjects among the social strata would be more revealing of the relationship between socio-economic status and economic learning. Further inquiry in this area should focus on identifying the specific aspects of socio-economic status which are factors in economic learning.

Study is needed to determine why grade level is more significantly related to economic experience and understanding than is age. Differences in subject-matter content among the grade levels may be an important factor in the association of grade level to economic learning.

The effect of parental instruction on economic learning was not investigated by this study, though it was identified by Ilg and Ames (34) as a primary source of children's knowledge of money. The investigator suggests that this variable be considered in future studies of economic learning.

All the subjects participating in this study were from an urban environment. It may be that children growing up in a rural environment would have quite different economic experiences from urban children, and that this would significantly affect their economic learning. It is suggested that future studies of economic experience include subjects from rural farm and non-farm environments. Also, the data of this study could be further analyzed to measure the relationship of each economic experience to economic understanding. It may be that some economic experiences contribute more to economic learning than others.

The learning of economic attitudes is an important aspect of economic socialization not investigated by this study but suggested as a focus for future research. Attitudes are significant determinants of individual and group behavior, and the identification of attitudes influencing economic behavior would contribute valuable information to consumer behavior and economic theory.

BIBLIOGRAPHY

1. Arnoff, M. "Adding Depth to Elementary School Social Studies." Social Education, XXVIII (1964), 335-36.
2. Ashley, W.R.; Harper, R.S.; and Runyan, D.L. "The Perceived Size of Coins in Normal and Hypnotically Induced Income States." American Journal of Psychology, LXIV (1951), 564-72.
3. Bandura, A. "Social-Learning Theory of Identificatory Processes." Handbook of Socialization Theory and Research. Edited by D.A. Goslin. Rand McNally Sociology Series. Chicago: Rand McNally and Co., 1969.
4. Bartley, H.S. Principles of Perception. New York: Harper and Brothers, 1958.
5. Berlyne, D.E. "The Delimitation of Cognitive Development." Concept of Development: A Report of a Conference Commemorating the Fortieth Anniversary of the Institute of Child Development. Edited by H.W. Stevenson. Monographs of the Society for Research in Child Development, Vol. XXXI, No. 5 (1966), 71-81.
6. Bijou, S. "Reinforcement History and Socialization." Early Experiences and the Process of Socialization. Edited by R.A. Hoppe; G.A. Milton; and E.C. Simmel. Social Psychology Series. New York: Academic Press, 1970.
7. Blalock, H.M., Jr. "Correlated Independent Variables: The Problem of Multicollinearity." Social Forces, XLII (1963), 233-37.
8. Boulding, K. "The Economics of Knowledge and the Knowledge of Economics." American Economic Review, Papers and Proceedings,
9. Breer, P.E., and Locke, E.A. Task Experience as a Source of Attitudes. The Dorsey Series in Anthropology and Sociology. Homewood, Ill.: The Dorsey Press, 1965.
10. Bruner, J.S., and Goodman, C.G. "Value and Need as Organizing Factors in Perception." Journal of Abnormal Social Psychology, XLII (1947), 33-44.
11. Bruner, J.S.; Goodnow, J.J.; and Austin, G.A. A Study of Thinking. New York: John Wiley and Sons, Inc., 1956.

12. Chombart de Lauwe, M.J. "Child Representation in Contemporary French Urban Society." Readings in Child Socialization. Edited by K. Danziger. Oxford: Pergamon Press, 1970.
13. Cuber, J.F. Sociology, A Synopsis of Principles. 4th ed. New York: Appleton-Century-Crofts, Inc., 1959.
14. Danziger, K. "Children's Earliest Conceptions of Economic Relationships (Australia)." Journal of Social Psychology, XLVII (1958), 231-40.
15. Danziger, K., ed. Readings in Child Socialization. Oxford: Pergamon Press, 1970.
16. Davis, O.L. "Children Can Learn Concepts." Educational Leadership, XVII (1959), 170-75.
17. Denhardt, R.B., and Jeffress, P.W. "Social Learning and Economic Behavior: The Process of Economic Socialization." American Journal of Economics and Sociology, XXX, No. 2 (1971), 113-25.
18. Estvan, F.J., and Estvan, S.W. The Child's World: His Social Perception. The Putnam Series in Education. New York: G.P. Putnam's Sons, 1959.
19. Frankel, M.L. "Joint Council on Economic Education." National Association of Secondary School Principals Bulletin, LI (1967), 79-82.
20. Gerwitz, J.L. "Mechanisms of Social Learning: Some Roles of Stimulation and Behavior in Early Human Development." Handbook of Socialization Theory and Research. Edited by D.A. Goslin. Rand McNally Sociology Series. Chicago: Rand McNally and Co., 1969.
21. Goode, W.J. The Family. Foundations of Modern Sociology Series. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1964.
22. Gough, H. "The Relationships of Socio-economic Status to Personality Inventory and Achievement Test Scores." Journal of Educational Psychology, XXXVII (1946), 527-40.
23. Gove, P.B., ed. Webster's Third New International Dictionary. Springfield, Mass.: G. and C. Merriam Co., 1961.
24. Gove, P.B., ed. Webster's Seventh New Collegiate Dictionary. Springfield, Mass.: G. and C. Merriam and Co., 1965.
25. Guilford, J.P. Psychometric Methods. 2d ed. New York: McGraw-Hill, 1954.

26. Gruenberg, S.M. Your Child and Money. New York: Public Affairs Committee, 1965.
27. Hedrick, H.G. A Study of Children's Monetary Characteristics, Interests, and Discretionary Choices with Implications for Developing Approaches to Money Management Teaching in Grade Six. Unpublished Master's thesis, University of Maryland, 1968.
28. Hill, E., and Giamatteo, M.C. "Socio-economic Status and Its Relationship to School Achievement in the Elementary School." Elementary English, XL (1963), 165-70.
29. Hoffer, J.W. Children's Experiences with Money: A Study of Rural Elementary School Children. Unpublished Master's thesis, Oklahoma Agricultural and Mechanical College, 1947.
30. Hollingshead, A.B. Two Factor Index of Social Position. New Haven, Connecticut: by the Author, 1965 Yale Station, 1957.
31. Hunt, E.B. Concept Learning: An Information Processing Problem. New York: John Wiley and Sons, Inc., 1962.
32. Hurlock, E.B. Child Development. New York: McGraw-Hill, 1964.
33. Ilg, F.L., and Ames, L.B. "Developmental Trends in Arithmetic." Journal of Genetic Psychology, LXXIX (1951), 3-8.
34. Ilg, F.L., and Ames, L.B. What You Should Tell Your Child About Money. Washington, D.C.: The Savings and Loan Foundation, Inc., 1965.
35. Jones, G. "C.A.S.E. for Economic Literacy." National Association of Secondary School Principals Bulletin, LI (1967), 90-92.
36. Kastner, H.H. "Modern Economics in the Elementary School." National Elementary Principal, XLVI (1966), 20-22.
37. Kohlberg, L. "Moral Development and Identification" and "Development of Moral Character and Moral Ideology." Cited by K. Danziger, ed. Readings in Child Socialization. Oxford: Pergamon Press, 1970.
38. Krech, D., and Crutchfield, R. Theory and Problems of Social Psychology. New York: McGraw-Hill, Inc., 1948.
39. Langer, J.H. "Vocabulary and Concept Development." Journal of Reading, X (1967), 448-456.

40. Malewska, H.E., and Muszynski, H. "Children's Attitudes to Theft." Readings in Child Socialization. Edited by K. Danziger. Oxford: Pergamon Press, 1970.
41. Marshall, E.M. "Economics for First Graders." The Instructor, LXXVII (1968), 41 and 63.
42. Marshall, H.R., and Magruder, L. "Relations Between Parent Money Education Practices and Children's Knowledge and Use of Money." Child Development, XXXI (1960), 253-84.
43. Miles, P.B. A Study of the Development of Value in the Money Concepts of Young Children. Unpublished Master's thesis, University of Tennessee, 1967.
44. Miller, L.N., and Horn, T.D. "Children's Concepts Regarding Debt." Elementary School Journal, LV (1955), 406-12.
45. Mussen, Paul H. Handbook of Research Methods in Child Development. New York: John Wiley and Sons, Inc., 1960.
46. Nie, N., et. al. Statistical Package for the Social Sciences. New York: McGraw-Hill, 1970.
47. Parsons, Talcott. "Family Structure and the Socialization of the Child." Family, Socialization, and Interaction Process. Edited by T. Parsons and R.F. Bales. Glencoe: The Free Press, 1955.
48. Piakas, A. Abstraction and Concept Formation. Cambridge: Harvard University Press, 1966.
49. Ritchie, O., and Kohler, M. Sociology of Childhood. New York: Appleton-Century-Crofts, Inc., 1964.
50. Russell, D.H. Children's Thinking. New York: Ginn and Company, 1956.
51. Schnittgrund, K.; Dunsing, M.; and Hafstrom, J. "Children and Money." Illinois Research, XV, No. 2 (1973), 12-13.
52. Schuessler, K., and Strauss, A. "A Study of Concept Learning by Scale Analysis." American Sociological Review, XV (December, 1950), 752-62.
53. Senesh, L. "Economics: What Economics Is." The Instructor, LXXV (1966), 34-35.
54. Strauss, A. "The Development and Transformation of Monetary Meanings in the Child." American Sociological Review, XVII (June, 1953), 275-86.

55. Strauss, A., and Schuessler, K. "Socialization, Logical Reasoning, and Concept Development in the Child." American Sociological Review, XVI (August, 1951), 514-23.
56. Thorndike, E.L., and Lorge, I. The Teacher's Word Book of 30,000 Words. New York: Bureau of Publications, Teachers College, Columbia University, 1944.
57. Tinkler, M.A. Teaching Elementary Reading. New York: Appleton-Century-Crofts, Inc., 1952.
58. Tucker, W.T. The Social Context of Economic Behavior. New York: Holt, Rinehart, and Winston, Inc., 1964.
59. U.S. Congress, House. Title I--Amendments to the Vocational Education Act of 1963. H.R. 18366, 90th Cong., 2d sess., 1968.
60. Wallace, J.G. Concept Growth and the Education of the Child. The Mere: National Foundation for Educational Research in England and Wales, 1965.
61. Wechsler, D. Wechsler Intelligence Scale for Children. New York: Psychological Corporation, 1949.
62. Williams, J.W. A Gradient of the Economic Concepts of Elementary School Children and Factors Associated with Cognition. Unpublished Ph.D. dissertation, Florida State University, 1969.
63. Yoshida, N. "Development of Concepts with Relation to Useage of Terms in Social Studies." Japanese Journal of Educational Psychology, VI (1959), 238-43 and 267-68.

APPEND IXES

Sample Selection

SAMPLE SELECTION

Unit and Cluster System of Public
Elementary Schools, 1973-74
Greensboro, North Carolina

Cluster	Grade Levels	School	Grade Levels
1. Deane	1-2	1. Wakehead	1-2
	3-4	Mc. New	1-4
	3-5	Cropper	3-5
2. Brooks	1-2	6. Eisenberger	1-4
	3-4	Linsley	1-4
	3-5	Prier	1-4
3. Thomas	1-2	7. Wiley	1-2
	1-4	Murphy	1-4
	1-5	Peck	1-5
4. Duke	1-2	10. Greene	1-2
	1-4	Clabwell	1-4
	3-5		
5. Clarke	1-2	11. Butler	1-2
	3-5	Frazier	1-5
6. Hunt	1-2	12. Alderman	1-2
	3-5	Johnson	1-5
		13. Venable	1-2

APPENDIX A

Sample Selection

Units and clusters selected for inclusion in the sample.

SAMPLE SELECTION

Pair and Cluster System of Public
Elementary Schools, 1972-73
Greensboro, North Carolina

School	Grade Levels	School	Grade Levels
1. Bessemer	1-2	7. Morehead	1-2
Cone	3-4	Mt. Zion	3-4
Joyner	5-6	Craven	5-6
2. Brooks	1-2	8. Sternberger	1-2
Irwin	3-4	Lindley	3-4
Washington	5-6	Price	5-6
*3. Hampton	1-2	*9. Wiley	1-2
Archer	3-4	Murphey	3-4
Irving	5-6	Peck	5-6
4. Jones	1-2	10. Greene	1-3
Hunter	3-4	Cladwell	4-6
Foust	5-6	11. Peeler	1-3
5. Clayton	1-3	Frazier	4-6
Bluford	4-6	*12. Alderman	1-3
6. Moore	1-3	Jonesboro	4-6
Porter	4-6	13. Vandalia	1-5

*Pairs and clusters selected for inclusion in the sample.

Selection of Subjects by School, Grade, Class
and Sex Designation

School	Grade	Class	Sex Desig.*	School	Grade	Class	Sex Desig.*
Hampton	1	Abbott	A	Archer	3&4	Byerly	A
	2	Carter	B			Frazier	B
		Bell	A			Rierson	A
		Gaskin	B			Shankland	B
Irving Park	5	Snider	A	Wiley	1	Irwin	A
	6	Chubbs	B		Foltz	B	
		Banks	A		McBryde	A	
		Hodges	B		Dean	B	
Murphey	3&4	Hargrove	A	Peck	5	Saddler	A
		Ferrell	B		Burgess	B	
		Powell	A		Moore	A	
		Goolsby	B		Rhame	B	
Alderman	1	McCoy	A	Jonesboro	4	Kinsey	A
	2	Mahaffey	B		Haith	B	
		Collins	A		Sims	A	
	3	Morrow	B		Thomas	B	
		Bunting	A		Pratt	A	
		Quick	B		Tyler	B	

*A = one white boy and one non-white boy; B = one white girl and one non-white girl.

Personal Data

Patent Number _____

Name _____

Class 1 2 3 4 5 6

Year _____

Age 6 7 8 9 10 11 12 13 14 15

Sex M F

Race W N

APPENDIX B

Information on Kind of Education

Instruments

Completion _____

Degree _____

Education 1-2 _____ high school

3-4 _____ college graduate

10-11 _____ post graduate

12 _____

Reference Schedule 702

Personal Data

Student Number _____

School _____

Grade: 1 2 3 4 5 6

Class _____ Room # _____

Age: 6 7 8 9 10 11 12 13 14

Sex: M F

Race: W NW

Information on Head of Household:

Occupation _____

Employer _____

Education: ___ 1-6 ___ some college
 ___ 7-9 ___ college graduate
 ___ 10-11 ___ post graduate
 ___ 12

Interview Scheduled For:

Student Number _____

Date of Interview _____

School _____

Time Begun _____ Time Ended _____

Tape Number _____ Side Number _____

I. Economic Experiences

- | | | |
|--|---|---|
| 1. Do you receive an allowance? | Y | N |
| Have you ever received an allowance? | Y | N |
| Are you (were you) required to do any work or chores in order to receive your allowance? | Y | N |
| 2. Do you ever earn any (extra) money working at home (besides your allowance?) | Y | N |
| 3. Do you have a job now? | Y | N |
| What do you do? _____ | | |
| 4. Have you ever earned money away from home, from someone other than your parents? | Y | N |
| 5. Do you save your money in any way? | Y | N |
| How do you save it? _____ | | |
| 6. Do you ever borrow money? | Y | N |
| From whom do you borrow? _____ | | |
| 7. Do you ever loan money? | Y | N |
| To whom do you loan money? _____ | | |
| 8. Have you ever bought anything on credit or used a credit card? | Y | N |
| Tell me about this. _____ | | |
| 9. Do you decide how you will spend your own money? | Y | N |
| 10. Do you shop on your own, without your parents? | Y | N |
| 11. Do you play with your parents? | Y | N |
| 12. How do you and your family spend leisure time together when the family will buy or how family spend with leisure time? Tell me about this. _____ | | |
| 13. How do you spend your leisure time, like "hang out", "see of life", or "work"? | Y | N |
| 14. Do you or have you ever sold anything? Tell me about some of the things you have sold? _____ | | |
| 15. Do you watch television? | Y | N |
| Do you watch television: do you watch television? _____ | Y | N |
| Do you watch television: do you watch television? _____ | Y | N |

Student Number _____

Date of Interview _____

School _____

Time Begun _____ Time Ended _____

Tape Number _____ Side Number _____

I. Economic Experiences

- | | | |
|---|---|-----|
| 1. Do you receive an allowance? | Y | N |
| Have you ever received an allowance? | Y | N |
| Are you (were you) required to do any work or chores in order to receive your allowance? | Y | N |
| 2. Do you ever earn any (extra) money working at home (besides your allowance?) | Y | N |
| 3. Do you have a job now?
What do you do? _____ | Y | N |
| 4. Have you ever earned money away from home, from someone other than your parents? | Y | N |
| 5. Do you save your money in any way?
How do you save it? _____ | Y | N |
| 6. Do you ever borrow money?
From whom do you borrow? _____ | Y | N |
| 7. Do you ever loan money?
To whom do you loan money? _____ | Y | N |
| 8. Have you ever bought anything on credit or used a credit card?
Tell me about this. _____ | Y | N |
| 9. Do you decide how you will spend your own money? | Y | N |
| 10. Do you shop on your own, without your parents? | Y | N |
| 11. Do you shop with your parents? | Y | N |
| 12. Have you and your family ever decided together what the family will buy or how family money will be spent?
Tell me about this. _____ | Y | N |
| 13. Have you played games using money, like Monopoly, Game of Life, or "store"? | Y | N |
| 14. Do you or have you ever sold anything?
Tell me about some of the things you have sold? _____ | Y | N |
| 15. Do you watch television? | Y | N |
| Do you watch television: after school? | S | A N |
| on school nights? | S | A N |
| on Saturday mornings? | S | A N |
| on weekend afternoons? | S | A N |
| on weekend nights? | S | A N |

II. Economic Understanding

Concept	Score	Response
1. What does it mean to own something?		
2. What is income?		
3. What does it mean to be employed?		
4. What is a customer?		
5. What is a luxury?		
6. What is a budget?		
7. What is a product?		
8. What is an expense?		
9. What are taxes?		
10. What does it mean to manufacture something?		
11. What does it mean to waste something?		

12. What is a consumer?		
13. What does it mean to spend money?		
14. What is insurance?		
15. What is economics?		
16. What are resources?		
17. What is a business?		
18. What does it mean to save?		
19. What is a liability?		
20. What is a debt?		
21. What is management?		
22. What does it mean to be poor?		
23. What is an advertisement?		
24. What is profit?		
25. What is an investment?		

Handwritten notes on the left margin, including the word "Wegman" written vertically.

THE FACTOR INDEX OF SOCIAL POSITION

The Two Factor Index of Social Position was developed in order to provide an objective, easily applicable procedure to evaluate the positions individuals occupy in the social structure of the society. Its development was predicated upon three assumptions: (1) the existence of a social structure in the society; (2) positions in this structure are measured solely by a few socially accepted variables; and (3) the characteristics of these variables can be analyzed and combined by the use of statistical procedures so that a researcher can objectively and intelligently identify the position of an individual.

APPENDIX C

Two Factor Index of Social Position

The Two Factor Index of Social Position is designed to evaluate the social position of an individual. According to Hollingshead, intelligence is believed to reflect the social and power positions of individuals as they occupy in society. Intelligence is presumed to reflect cultural capital as well as knowledge. Through the use of statistical techniques, the Two Factor Index combines these two factors in such a manner which approximates the social position of individuals occupying in society.

The items of information are necessary to calculate the social position of an individual or household. The precise occupational code of the head of the household, and the amount of formal education he has received. These two factors are then converted to standardized values to which the two factor index is applied to the following educational and occupational social scales:

TWO FACTOR INDEX OF SOCIAL POSITION

"The Two Factor Index of Social Position was developed to meet the need for an objective, easily applicable procedure to estimate the positions individuals occupy in the status structure of our society" (30). Its development was premised upon three assumptions: (1) the existence of a status structure in the society; (2) positions in this structure are determined mainly by a few commonly accepted symbolic characteristics; and (3) the characteristics symbolic of status may be scaled and combined by the use of statistical procedures so that a researcher can quickly, reliably, and meaningfully stratify the population under study.

Occupation and education are the two factors employed in estimating the social position of an individual. According to Hollingshead, occupation is believed to reflect the skill and power possessed by individuals as they perform in society. Education is presumed to reflect cultural tastes as well as knowledge. Through the use of statistical techniques, the Two Factor Index combines these two factors so as to determine within approximate limits the social position an individual occupies in society.

Two items of information are necessary to calculate the social position of an individual or household: the precise occupational role of the head of the household, and the amount of formal education he has received. These two factors are then converted to numerical values between one and seven, according to the following educational and occupational scales:

A. The Occupational Scale

1. Higher executive, proprietors of larger concerns, and major professionals
2. Business managers, proprietors of medium-sized businesses, and lesser professionals
3. Administrative personnel, small independent businesses, and minor professionals
4. Clerical and sales workers, technicians, and owners of little businesses
5. Skilled manual employees
6. Machine operators and semi-skilled employees
7. Unskilled employees and the unemployed

B. The Educational Scale

1. Graduate professional training
2. Standard college or university graduation
3. Partial college training (1-3 years)
4. High school graduation
5. Partial high school (1-3 years)
6. Junior high school (grades 7-9)
7. Less than seven years of school

To calculate the score of social position for an individual, his scale values for the two factors are weighted as follows:

<u>Factor</u>	<u>Factor Weight</u>
Occupation	7
Education	4

After multiplying each scale value by the appropriate weight, the weighted scores are added to yield the Index of Social Position Score. Scores can range from a low of eleven to a high of seventy-seven.

Scores of social position obtained through application of the Two Factor Index may be arranged in a continuum or divided into groups of scores. Hollingshead suggests the following as a meaningful hierarchy of score groups when such a breakdown is desired:

<u>Social Class</u>	<u>Range of Computed Scores</u>
I	11-17
II	18-27
III	28-43
IV	44-60
V	61-77

CORRELATION MATRIX

	Experi- ence	Under- standing	Grade level	Age	Sex	Race	Academic achievement
Experi- ence	1.000	.517	.299	.212	-.417	.134	-.222
Under- standing	.517	1.000	.666	.575	-.176	.779	-.284
Grade level	.299	.666	1.000	.733	0.000	0.000	-.126
Age	.212	.575	.733	1.000	.015	-.046	-.081
Sex	-.417	-.176	0.000	.015	1.000	0.000	.029
Race	.134	.779	0.000	-.046	0.000	1.000	-.067
Academic achievement	-.222	-.284	-.126	-.081	.029	-.067	1.000

APPENDIX D
Correlation Matrix

CORRELATION MATRIX

	Experi- ence	Under- standing	Grade Level	Age	Sex	Race	Socio-eco- nomic Status
Experience	1.000	.517	.399	.312	-.417	.134	-.253
Understanding	.517	1.000	.666	.575	-.176	.279	-.366
Grade Level	.399	.666	1.000	.933	0.000	0.000	-.124
Age	.312	.575	.933	1.000	.015	-.046	-.061
Sex	-.417	-.176	0.000	.015	1.000	0.000	.056
Race	.134	.279	0.000	-.046	0.000	1.000	-.667
Socio-economic Status	.253	.366	.124	.061	.056	.667	1.000

MULTIPLE REGRESSION

APPENDIX E

Multiple Regression

Let Y be the dependent variable, the X 's are the independent variables, and $\beta_0, \beta_1, \dots, \beta_k$ are the regression coefficients, and ϵ is a constant. This equation is then used for two purposes: (1) to predict a particular value of the dependent variable from known values of the independent variables, or (2) to provide understanding of the relation of each independent variable to the dependent variable when the others are controlled.

A stepwise multiple regression program was developed for the Social Sciences (SS) and used to run the regression analysis on the census data. Stepwise regression is a statistical technique of the general multiple regression procedure. It starts with a prediction equation on one variable at a time, selected by the program. The single independent variable which is the best predictor of

MULTIPLE REGRESSION

"The basic concept of multiple regression is to produce a linear combination of independent variables which will correlate as highly as possible with the dependent variable" (46). It enables the investigator to measure and evaluate the relationship between a dependent variable--in this case, score of economic experience or score of economic understanding--and a set of independent variables--sex, race, grade level, age, and socio-economic status. Regression analysis yields a linear equation in the form of

$$y = b_1x_1 + b_2x_2 + \dots + b_nx_n + c$$

where y is the dependent variable, the x 's are the independent variables, the b 's are the regression coefficients, and c is a constant. This equation can then be used for two purposes: (1) to provide a predicted value of the dependent variable from known values of the independent variables, or (2) to provide understanding of the relation of each independent variable to the dependent variable when the others are controlled.

A stepwise multiple regression program from the Statistical Package for the Social Sciences (46) was used to run the regression analysis on the sample data. Stepwise regression is a valuable variation of the general multiple regression procedure. It constructs a prediction equation on one variable at a time, selecting in the first step the single independent variable which is the best predictor of

the dependent variable. The independent variable added to the regression equation in the second step is that which provides the best prediction of the dependent variable in conjunction with the first variable. This procedure is followed, step by step, until all significant independent variables have been entered in the equation. Significance tests are computed at each step to see if addition of the new variable actually increases the accuracy of the prediction equation.

For use as a prediction equation, numerical values must be substituted for the x's in the model. The code values shown in Table 8 were used for this purpose.