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ABSTRACT

The purpose of this study was to determine the short-term impact of inquiry-oriented teaching materials on high school students' understanding of consumer education concepts and practices. In addition, the study sought to ascertain if a comparative advantage exists in offering consumer education courses at the preservice and the inservice levels of instruction. Data collected and analyzed in the study were fit into linear regression equations, one for each of the eleven models employed in testing the hypothesis underlying the central problem. The Consumer Information Test (CIT) and the Test of Economic Understanding (TEU) were used to measure high school students' understanding of consumer education and economic knowledge. Study findings revealed that the inquiry-oriented teaching materials positively affect students' understanding of consumer education concepts and practices and that the traditional treatment of consumer education subject matter is less effective than the inquiry mode of instruction. (Author)

Final Report

Project No. O-F-077(V)
Grant No. OEG-5-71-0024(509)

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A PROJECT TO CREATE AND VALIDATE CURRICULUM MATERIALS IN CONSUMER EDUCATION FOR HIGH SCHOOL STUDENTS

November 1972

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Office of Education

National Institute of Education
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Data collected and analyzed in the study were fit into linear regression equations, one for each of the eleven models employed in testing the hypotheses underlying the central problem. The Consumer Information Test (CIT) and the Test of Economic Understanding (TEU) were used to measure high school students' understanding of consumer education and economic knowledge.

CONCLUSIONS

1. The inquiry-oriented teaching materials developed and utilized by the experimental group teachers in the study population, positively affects students' understanding of consumer education concepts and practices.

2. Inquiry-oriented teaching materials are more effective in transmitting consumer education content to high school business education and home economics students than social studies students utilized in the study.

3. A slight causal preference exists in offering consumer education instruction in in-service economics course, for teachers in the study sample, than in pre-service economics courses or pre-service and in-service consumer education courses.

4. The traditional treatment of consumer education subject-matter is less effective than the inquiry mode of instruction.

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U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

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PREFACE

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Chapter 1

INTRODUCTION

This report summarizes the activities associated with the research project to create and to validate curriculum materials in consumer education for secondary school social studies, business education, and home economics students. The results of the study provide insights into the effectiveness of inquiry-oriented teaching materials in fostering student understanding of consumer affairs. The report contains an accumulation of significant data to guide colleges and universities in determining the content and the educational level at which to offer consumer education courses.

THE PROBLEM

The central problem of this study was to determine the short-term impact of inquiry-oriented teaching materials on the students' learning of consumer education concepts.

In addition to determining the effectiveness of the inquiry mode of instruction, the study also sought to measure the comparative advantage of offering courses in consumer education at the in-service and the pre-service levels of instruction.

Collateral to these central purposes, the project proposed to develop a systematic basis to teach pre-service and in-service teachers consumer education concepts and practices, and to develop inquiry-oriented instructional materials which enable high school students to understand these concepts and practices.

Answers to the following specific questions underlying the central problem of the study were sought:

1. What is the short-term impact of inquiry-oriented teaching materials on the learning of consumer education concepts and practices by secondary school students?
2. What is the comparative advantage of offering courses in consumer education at the pre-service and in-service levels of instruction?
3. Should teacher exposure to consumer education content be a requirement in pre-service and in-service training programs?
4. How should consumer education content be transmitted to secondary social studies, business education, and home economics students?

IMPORTANCE OF THE PROBLEM

The appraisal of consumer education curriculum materials for high school use is a multifaceted process for educators concerned with identifying appropriate materials. One important aspect of assessment that

is of concern to these specialists is the importance of providing an instructional program designed to help young people solve their real-life problems, to develop a "superior" set of values, and to move into "finer" patterns of living. Curriculum units in consumer education should stimulate learning by arousing in students a desire to push beyond their immediate and practical concerns toward broader, more universal objectives.

A consumer education approach offers a natural, functional way to understand economics, i.e., seeing the economy in action. Such a program has a particular significance to low income students who yearn for things many of us take for granted. To these students, the market economy is a real place, although highly impersonal; the concept of budget constraint is real because they know what it means to stretch a dollar. These students tend to think concretely and react better when they engage in learning experiences that reflect reality.

Adolescents' experiences are as wide in scope as life itself, and they are rich in elements of consumer education. The mass media has widened their experiences from their homes to all around the world and out into space. Adolescents are constantly exposed to social realities and are witnesses and active participants in the economic world that surrounds their everyday lives. They have a strong desire to be independent and to make their own decisions. High school youth are part of the mainstream of economic life and need some criteria by which they can be helped to systematically appraise, select, and use products and services wisely.

When adolescents grow up, they automatically learn to function as consumers. This is a common fallacy. Whether the adolescent develops an understanding of the consumer role and whether he participates effectively in our society depends on the capacity of the schools to help young people better understand the major forms of economic activity that individuals engage in. Earning, spending, saving, borrowing, and investing income are important forms of economic activity which should be related to a youngster's experience. Secondary school teachers are aware of this great responsibility and they are receptive to new ideas. For these reasons the secondary school classroom offers a good climate for experimentation in consumer education.

Because consumer education plays a large role in the adolescent's world, and because it will be important all through his adult life, it must be made an integral part of the secondary school program. Moreover, there is a disproportionate emphasis given, in the high school curriculum, to the producing side of the economy--to the ways in which people earn a living. How that income is used and how the uses affect the individual or the family as an economic unit are virtually neglected. How can the neglect be explained when one recognizes that the producing role of the adolescent is in the future while his consuming role is upon him now.

In spite of the compelling nature of the arguments for consumer education courses and units, one finds the striking fact that most secondary schools do not have consumer affairs as a part of their formal curricula. At best, the teaching of consumer education is a hit or miss affair, taught incidentally by some schools, and not at all by most others. One looks in vain for a school with a course, or even a unit, in which economic matters of concern to all individuals in their roles as consumers are as carefully formulated as are units and courses in American History, American Government, or the like. It is incumbent upon teachers to introduce the basic ideas of consumer education in their courses which will enable their students to understand their role as a consumer in our economic system and in our society. This project was designed to meet that need.

DEFINITIONS OF TERMS

Certain terms were used in this study which may need clarification. The definitions that follow were drawn from Good's Dictionary of Education.[1]

1. Consumer education--a study of the individual's decision-making process and participation in economic life in the roles of worker, consumer, and citizen. Emphasis is placed on his activities of earning, spending, borrowing, saving, investing, and influencing collective decisions as a citizen of the economic community.

2. Inquiry instruction--the teaching technique in which teachers assume a nondirective role by providing stimulus material in the form of words, pictures, or sounds for students to react to with minimal guidance. Emphasis is placed on arousing the student's curiosity in a subject or topic and permitting him to collect, validate, and interpret data relevant to his area of inquiry.

3. Teaching material--a written description of the objectives, steps, procedures and achievement test items for any experience, device, or method used in teaching.

4. Teaching methods--the instructional approaches, modes, or techniques utilized by teachers to move students toward content to which particular objectives are aimed.

5. Content--the concepts and principles or theories of a subject or discipline arranged in a logical and systematic order and which comprise a body of knowledge.

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[1]Carter V. Good (ed.), Dictionary of Education, McGraw-Hill Company, New York, 1959.

LIMITATIONS OF THE STUDY

Several limitations were encountered in the conduct of this investigation. The most severe limitation in the study was the scope of generalizability. The findings were generalized to the total population of 862 high school students and 40 secondary level teachers who participated in the study. A random selection of high school teachers that comprised the control group was drawn from a mailing list of business education, social studies, and home economics teachers available from the Minnesota State Department of Education. The mailing list, however, did not contain the names of all secondary teachers representing these subject areas in Minnesota schools. This may have resulted in an upward bias in the number of respondents claiming to do the many things queried by the study questionnaire. As a result, there is some question as to how representative the teachers were to whom the questionnaire was sent and from whom replies were received. Similarly, the group of teachers who responded may also have caused the findings to be biased upward. It is likely that the respondent with a viable economics or consumer education program in his school would be far more likely to complete the questionnaire than would a person in whose school economics or consumer education was not being taught. The study endeavored to establish whether or not such a bias existed by randomly selecting 25 nonrespondents from the total sample group of teachers. This group was contacted personally by telephone and their cooperation was requested. The data results from the randomly selected nonparticipants were so close to the data yielded by the entire group of respondents that faith in the representativeness of the respondents was considerably enhanced.

A second limitation in the study was the existence of several unexpected ambiguities that appeared in the questionnaire which were not encountered when it was trial tested. For example, the questionnaire neglected to clearly define the term "economics" for the teacher respondents. As a result, the teachers had few criteria by which to determine whether or not they could claim to be teaching economics. Had it provided a clearer definition, it is likely that some respondents who claimed to be teaching economics may have labeled what they teach as something else. However, the project's procedures in all cases were conservative. When there was some uncertainty about how to code, the study indicated a "no response" for that question. Although this problem was apparent on a negligible percentage of returns, its resolution may have affected the results.

A third limitation in the study was the absence of adequate controls for institutional influences, the students' motivation during the intervening months, and allowances for any learning effects incurred by taking the CIT and TEU twice; due to the dependence between pre- and posttests, the exact relationship between these variables may not

be accurately represented. Obviously, the existence of multicollinearity for these and other variables may distort the results. Moreover, the design of the research study, based on pre- and posttest could not account for unknown contributing factors which might have influenced the improvement in students' performance on the posttest. A variety of instructional techniques and materials were used by t[illegible] the experimental group, and these may have had variable effe[illegible] improvements in the economic and consumer education understandings of the students.

The criteria and procedures established and followed in the verification of the "inquiry-oriented" instructional materials prepared and utilized by the experimental group teachers were another major limitation in the study. However, this limitation was held to a minimum by the utilization of a panel of experts in inquiry instruction who judged the validity of teaching materials.

BASIC ASSUMPTIONS

The following assumptions were judged to be essential in the conduct of the study.

1. It is possible to classify instructional materials into categories representing a range of teaching methods.
2. The criteria used to verify the teaching materials developed and utilized by the experimental group teachers represent a valid scheme for classifying the inquiry mode of instruction.
3. The Consumer Information Test and the Test of Economic Understanding are valid instruments for measuring high school students' understanding of consumer education and economic knowledge.

SUMMARY

The central problem of this investigation was to determine the short-term impact of inquiry-oriented instructional materials on high school students' understanding of consumer education concepts and practices. Information was also sought concerning the comparative advantage of offering consumer education courses at the pre-service and in-service levels of instruction. In addition, the study sought to provide insights into the effectiveness of inquiry-oriented materials in fostering student understanding of consumer affairs.

The problem of the relationship of teaching methods and major consumer education understandings to student performance has long confronted educators. With the avalanche of new high school consumer education teaching materials which private publishers, foundations, and others make available, the concern for more effective teaching materials has increased. The importance of this concern was presented in this chapter.

The remainder of this investigation was organized to present a

review of related research, the findings of the study and the conclusions and recommendations.

Chapter 2

REVIEW OF RELATED RESEARCH

This chapter is devoted to a review of research related to the central problem of the study. This review is presented in two major sections, entitled (1) Consumer Education Knowledge and Skills, and (2) Assessing the Inquiry Approach to Teaching. A summary concludes the chapter.

CONSUMER EDUCATION KNOWLEDGE AND SKILLS

Research in the cognitive area of this study is virtually nonexistent. Although every article written in the last ten years about consumer education and available to the project investigator was examined, no evidence of scientific research done in the field could be located. A 1962 doctoral thesis done by Arthur Beattie[1] at the University of Minnesota on the relationship between information and attitude toward personal finance held by pupils who had training in consumer economics, led to the discovery of two unpublished dissertations that relate to the present study--"An Evaluation by a Partially Illustrated Test of Certain Competencies in Personal and Family Financial Management Possessed by Selected High School Students," by Evelyn Furrer[2] and Herbert Jelley's[3] "A Measurement and Interpretation of Money Management Understandings of Twelfth Grade Students."

The results of Jelley's investigation revealed "...that student understandings were quite high in the area of managing personal finances." He expressed concern not only because this area is covered extensively in textbooks, but also because it was ranked high in importance by a jury of 26 experts who evaluated the topics that comprised

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[1]Arthur Beattie, "Relationships Between High School Pupils' Information and Attitudes Toward Personal Finance," unpublished doctoral dissertation, University of Minnesota, 1962.

[2]Evelyn C. Furrer, "An Evaluation by a Partially Illustrated Test of Certain Competencies in Personal and Family Financial Management Presented by Selected Senior High School Students," unpublished doctoral dissertation, Pennsylvania State University, State College, Pennsylvania.

[3]Herbert M. Jelley, "A Measurement and Interpretation of Money Management Understandings of Twelfth Grade Students," unpublished doctoral dissertation, University of Cincinnati Teachers College, Cincinnati, Ohio.

the test plan for his study. Jelley concluded that teachers should, therefore, pretest students to determine in which topics, if any, the students already possessed substantial knowledge and skills. In a related study, Furrer concluded that general weakness in certain competencies of personal and family financial management is possessed by eleventh and twelfth grade students regardless of curriculum. Her hypothesis that high school students are deficient in certain competencies of money management was supported. However, the hypothesis that completion of a given grade level in a particular curriculum of a high school is an indication of greater knowledge in the competency of money management than the completion of another curriculum, was rejected. The results of her study indicated that (1) there was no significant difference between the extent of competencies possessed by college preparatory students and business students, and (2) there was no significant difference between the extent of competencies possessed by vocational students and general students. There was, however, a significant difference between business and vocational or general students in favor of business students.

Dawson,[4] in a study dealing with the nature of courses offered in the schools under the heading of Economics, found that high school teachers lean heavily toward descriptive, personalized, consumer-oriented economics, while the college economists strongly favor analytical principles for high school classes. If Dawson's findings are accurate, teacher-training institutions need to rethink their approach to in-service economics courses, so as to make them fit the need that high school teachers apparently have for valid consumer education information.

Although each of these studies is of general interest, they provide very little guidance to the present project. In summary, Jelley's study points to the need for diagnostic pretesting while Furrer's Study demonstrates that the curriculum in which a high school student is enrolled has some bearing on his competence in money management. Dawson's study affirmed the need to teach "Economics" in terms that are relevant to teachers, i.e., through consumer education topics and courses.

ASSESSING THE INQUIRY APPROACH TO TEACHING

Research on the pedagogical aspect of the project is considerably more abundant. Inquiry (sometimes called discovery learning, problem solving, or reflective thinking), as an inductive teaching strategy and as a learning process, has been research rather extensively. In 1913,

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[4]George Dawson, "The Effectiveness of Introductory Economics Courses in High Schools and Colleges," A Research Project, New York University, New York, 1967.

Winch[5] compared learning under conditions that encouraged inductive thinking and under conditions that encouraged deductive thinking. Although children taught by the latter performed better when they were tested on the kinds of materials they had used in their studies, the inductive method proved superior when children were tested on new but related material--i.e., they were able to use what they had learned to interpret new materials.

Kersh[6] reported an experiment in which he assigned three groups of students to work on a series of problems involving arithmetic and geometrical relationships. The first, or "no-help" group, was required to discover the rules for working the problems without any assistance from the experimentor. The second, or "direct-reference" group, was given help in the form of visual aids designed to clarify the problem. The third, or "rule-given" group, was told the rules directly and was given practice in applying the rules; they were not helped to understand the mathematical relationships involved in the problems. Kersh concluded that the group that received some direction in their inquiring (the "direct-reference" group) discovered the mathematical relationships involved in the problems best of the three groups. The "no-help" group was superior to the "rule-given" group. In a follow-up study, Kersh[7] reported on the students' motivation for the tasks at hand in his earlier research. He concluded that the students in the "no-help" group appeared to be better motivated to continue working on the problems, irrespective of any extrinsic rewards, than were students in the other groups. ...s increase of interest presumably stimulates additional practice, which in turn facilitates learning.

A more extensive study dealing with instructional techniques was conducted by Suchman.[8] Using films to initiate student interest and to motivate them to inquire for answers, Suchman conducted classes in which he served only as a responsive environment, responding yes or no to student queries. In comparing control and experimental groups located in 12 different schools on their understanding of specific

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[5]W. H. Winch, Inductive vs. Deductive Methods of Teaching: An Experimental Research, Warwick and York, Baltimore, 1913.

[6]B. Y. Kersh, "The Adequacy of 'Meaning' as an Explanation for the Superiority of Learning by Independent Discovery," Journal of Educational Psychology, Vol. 49, pp. 282-292, 1958.

[7]B. Y. Kersh, "The Motivating Effect of Learning by Directed Discovery," Journal of Educational Psychology, Vol. 53, pp. 65-71, 1962.

[8]J. R. Suchman, The Elementary School Training Program in Scientific Inquiry, University of Illinois Press, Urbana, Illinois, 1962.

scientific content, he found no significant differences in the students' knowledge of content. Similarly, McDonald[9] reviewed research in inquiry teaching and concluded:

> ...the studies do indicate that the 'discovery' learner is more interested in the instructional activity and the problem. He is more involved in the work, participates actively, and gets added practice because he is motivated to study the problem independently. We expect and predict that these factors will enhance learning... When the discovery is carefully programmed, it proves to be an effective method.

The findings of a study conducted by four University of Indiana researchers[10] confirm the results obtained by McDonald and by other researchers in the general area of the problems approach to teaching. These researchers found that students can learn to deal with material from an inquiry point of view and learn just as many facts in the process, and teachers can learn to change their style and method of teaching.

A considerable body of literature exists which merely describes inquiry as a strategy, and how one goes about using this mode in his teaching. These books review a large body of prescriptive literature on inquiry, provide transcriptions of numerous lessons conducted to promote discovery, and suggest where future research in inquiry should proceed. Although one looks in vain for reports of specific research studies in these publications, they do a satisfactory job of explaining what inquiry is and how one uses inquiry as a teaching/learning strategy.

In summary, research on the need for high school instruction in consumer education and the inquiry approach to teaching has been reported in this chapter. The methodology and logic underlying the various research studies examined served as the basis for the procedures used in the research phase of the present investigation.

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[9]F. J. McDonald, Educational Psychology, Wadsworth Publishing Company, Belmont, California, 1965.

[10]J. E. Cousins, "The Development of Reflective Thinking in an Eighth Grade Social Studies Class," unpublished doctoral dissertation, Indiana University, Bloomington, Indiana, 1962.

Chapter 3

PROCEDURES

In identifying appropriate procedures to analyze the central problem underlying the investigation, five basic steps were established and followed including (1) the selection of the control and experimental group teachers, (2) the selection of the control and experimental group students, (3) the design of the curriculum research project, (4) the selection of the testing instruments, and (5) the statistical analysis of the data. Each of these steps will be explained in more detail below.

SELECTION OF TEACHERS

In an attempt to answer the research questions underlying the study, a questionnaire was developed through collaboration with the Minnesota State Department of Education, the Minnesota Council for the Social Studies, and the Minnesota Council on Economic Education. Using nonselective mailing lists from the State Department of Education, approximately 3,000 secondary school business education, social studies, and home economics teachers were identified. After deleting names and titles that for one reason or another were inappropriate for our purpose, the total sample population of teachers representing the above categories totaled 987. In total, the results of this study are taken from 16 Minnesota teacher responses that comprised the experimental group. Selection of the participants was carried out by a committee headed by the director of the institute phase of the project, with members drawn from the project staff, from the Economic Education Center, and from the participating school systems. Participants in the experimental group had to meet the major criteria for selection including (1) possession of a Bachelor's degree, and (2) willingness to teach consumer affairs to their students during the course of the project.

In order to determine whether the inquiry model was a viable format for teaching consumer education topics, area secondary school principals, who reported to have consumer education courses in their curricula, were contacted and asked to identify teachers on their staffs who did not participate in the institute (nonparticipants), but who matched the profiles of one or more of the experimental group participants developed from the questionnaire they filled out. The matching process controlled for variations in teacher-characteristics that might account for differences in student performance, in the absence of controls. Altogether, 24 teachers who matched the profiles of the participants in the experimental group comprised the control group sample.

As Table 1 indicates, the experimental group teachers did not differ significantly from the control group teachers in any of the matching variables. A two-tailed chi-square test was used to test the null

hypothesis of assuming no differences between the two groups. None of the computed chi-square values were found to be statistically significant at the .05 level. Consequently, the null hypothesis was rejected, and the groups were considered adequately matched for the purposes of this study.

TABLE 1

CHI-SQUARE TESTS OF HOMOGENEITY BETWEEN TEACHER GROUPS

VARIABLE	Chi-Square $\bar{X}^2$	Degrees of Freedom df
Subject Taught	4.0673370	2
Teacher Experience	2.1251133	5
Degrees Held	.0376984	4
Undergraduate Major	.3719577	2
Graduate Major	2.0641975	2
Economics Credit Hours	6.0227140	6
Consumer Education Credit Hours	6.8680518	6
Economics In-Service Credit Hours	1.9165714	6
Consumer Education In-Service Credit Hours	4.2342857	6

*The difference between the two populations are statistically significant at the .05 level.

SELECTION OF STUDENTS

The experimental group of 282 high school students and the control group of 580 high school students were enrolled in consumer education courses taught by teachers in the study population. As Table 2 indicates, the experimental group differed significantly from the control group on selected student characteristics and on the two standardized tests measuring economic and consumer education knowledge; in terms of mean test scores, most of the differences can be explained by the variations in the sample size of the grade level sections represented in the two groups. However, the differences in the two groups remain evident even when student grade is controlled for.

TABLE 2

CHI-SQUARE TESTS OF HOMOGENEITY BETWEEN STUDENT GROUPS

Variable	Chi-Square	Degrees of Freedom
	$\overline{X}^2$	df
Pre-CIT	11.024*	1
Pre-TEU	15.154*	1
Program	11.374*	3
Grade	152.753*	3
High School Economics	11.820*	1
High School Cons. Ed.	18.998*	1

*The difference between the two populations are statistically significant at the .05 level.

As indicated in Table 3, subsequent chi-square tests of homogeneity for grade level sections showed no significant differences in pre-CIT scores between the experimental and control groups. Similar tests of homogeneity on pre-TEU scores showed significant differences between the tenth and twelfth grade groups. However, the differences found between the ninth and eleventh grade groups on the pre-TEU were not significant at the .05 level.

Chi-square tests computed by grade level for program type and students' high school consumer education courses, revealed significant differences between the groups. In terms of high school economics, the results of the chi-square tests indicate a high degree of homogeneity between the tenth, eleventh, and twelfth grade samples in the control and experimental groups; significant differences, however, were found between the ninth grade samples in the two groups. These results are summarized in Table 3.

As a result of these findings, the null hypothesis of assuming no differences between the groups (in terms of CIT performance) could not be rejected; and the groups were judged to be adequately matched for purposes of this investigation.

TABLE 3

CHI-SQUARE TESTS OF HOMOGENEITY
BETWEEN GROUPS BY GRADE LEVEL

Grade / Variable	Ninth		Tenth		Eleventh		Twelfth	
	X^2	df	X^2	df	X^2	df	X^2	df
Pre-CIT	.0457618	1	.820999	1	.3041388	1	.9353346	1
Pre-TEU	.0736143	1	7.9133*	1	.0036249	1	16.0484436*	1
Program	17.492*	3	13.710*	3	4.394*	3	46 .119*	3
H.S. Econ.	220.579*	1	.4774	1	.0496	1	1.2476	1
H.S. Con. Ed.	26.772*	1	19.233*	1	405.764*	1	458.687*	1

*The difference between the two populations are statistically significant at the .05 level.

SELECTION OF TESTING INSTRUMENTS

During the 1971-72 school year 282 high school students in the experimental group and 580 high school students in the control group were administered before and after survey questionnaires as well as being pretested and posttested on the Test of Economic Understanding (TEU, Form B) and the Consumer Information Test (CIT).*

The Test of Economic Understanding (TEU). The TEU was prepared by the Joint Council on Economic Education in cooperation with the Science Research Associates. This instrument was completed in 1963 and consists of two equivalent forms, Form A and Form B. The national normed and validated test has wide acceptability among professional economists as an effective device for measuring high school students' understanding of economics. It contains 50 multiple choice items, with four options given for each item. These test items deal with economic principles related to resources, goods and services, production, monetary policy, savings and investment, the process of exchange, the basic institutional structure of a market system and the role of government in the economy. Since every consumer economics article reviewed in Chapter 2 recommended course content that is clearly economic in nature, the TEU was judged to be appropriate for measuring the classroom impact of the instructional materials developed by the participants in the study.

The Consumer Information Test (CIT). The CIT was developed by Dr. Arthur Beattie in 1962 as part of his doctoral thesis at the University of Minnesota. This normed and validated test was designed to measure high school students' knowledge of standard consumer education concepts and practices. It consists of 68 multiple choice items, with four options given for each item.

Beattie developed the test items from a survey of textbooks which were being used in Minnesota to teach consumer education in 1960. He made a list of topics to be tested and estimated the emphasis given to each in the various texts so as to make his test similarly balanced. He composed additional questions from tests he had administered himself as a teacher of consumer education.

To establish the validity of the CIT, Beattie selected a jury of experts composed of an author of each of the high school consumer education texts used by students in his study, two college professors of consumer education, and a high school consumer education teacher. Based on the jury's criticisms, Beattie made minor changes in the form of some of the test questions. The CIT instrument was used in this project to measure information learned as well as understanding the

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*Post CIT raw scores for the control group students were used as pre-CIT scores.

four components of personal finance--money management, credit, insurance, saving and investment. The pure merits of this test rest on its ability to test students' knowledge of concepts neglected by the TEU that are believed to be important understandings for high school students.

DESIGN OF PROJECT

The major objectives of the summer institute phase of the project were to assist the experimental group teachers in reaching a certain threshold level of sophistication in consumer education concepts and practices and to provide them with the skills and knowledge to develop inquiry-oriented curriculum materials which would enable their students to understnad these concepts and practices. The achievement of these general objectives were pursued through two channels. One channel was a course designed to increase the teachers' understanding of standard concepts of consumer education courses. The major objective of the project during this phase was further enhanced by a course in educational methods designed to guide the participants in the development of teaching materials that were inquiry-oriented, in light of the consumer education topics and concepts presented in the content sessions. Descriptions of the individual episodes included in the summer phase of the project follow.

Content Session. The basic orientation of the content portion of the program was one that stressed an understanding of the fundamental concepts of consumer education knowledge and the logical relations and implications of these concepts to an analysis of consumer issues. The instructors of the content phase spent a considerable amount of time introducing the participants to the concepts essential to an understanding of the contemporary problems facing the consumer. In more detail, the content sessions were organized around four basic topics including (1) money management, (2) credit, (3) insurance, and (4) saving and investment. Some of the basic questions relating to these broad content categories that were examined in greater depth were: What are the economic needs and wants of adolescents? How is the vocational pattern of the family related to the economic wants and needs of high school students? What are the major sources of income available to the students for satisfying their economic needs? What are the major types of investments?

During the morning of each day, the time was spent by the participants examining topics through which consumer education concepts could be taught. Guest speakers, from nearby communities who were experts on special topics relevant to the project, introduced local ramifications of each of the specific topics and shared their thinking with the participants as to how the concepts could be taught. Then the participating instructors added details and generalized from the specifics

presented by the guest speakers so as to help the teachers see the significance of the problem beyond the specific instance of it.

Materials. A discussion of the general objectives of the school curriculum as a framework through which consumer economic knowledge could be transmitted set the stage. Throughout this phase a significant portion of classtime was spent on demonstrating just how specific consumer education concepts learned could be effectively presented to students at various grade levels through the inquiry mode. That is, the instructors outlined a section of the work that the teachers just learned and delineated the concepts and results of the analysis that was believed to represent the essence of the material that could be presented to students. In addition, a variety of inquiry-oriented models which could be used to communicate these concepts were suggested. Finally, teachers had the option of micro-teaching up to three of these concepts to the entire class. After a brief critique, the teachers were encouraged to reteach the concepts in order to test their ability to apply what they learned, before returning to their classrooms. These experiences seemed to provide greater assurance that transmission of the learned material to the classroom would actually take place.

At the heart of this project was a desire on the parts of the cooperating parties to determine the short-term impact of inquiry-oriented teaching materials on students' understanding of consumer education concepts. Toward that end, the teachers were encouraged at the outset of the project to view the content phase and materials development phase as tasks necessary to achieve the overall objective. During the curriculum development phase, therefore, the curriculum specialist introduced participants to inquiry as a teaching strategy, demonstrated instances of it and spent time during the remaining afternoons helping teachers develop units for their respective teaching assignments that promoted student understanding of the consumer topics. During this phase, the entire staff was available to work with committees of teachers to assist them with their units.

At the end of the summer phase, the instructional materials were developed, edited, revised, and reproduced in final form for the teachers' use during the following school year. During the final phase of the summer program, the teachers were given the opportunity to discuss with the staff problem areas that each felt must be resolved before using the curriculum materials in their classrooms. During this time, the curriculum specialist and the other staff members consulted individually with each group concerned with particular problems to bring whatever expertise they could to bear on each. On the last day of the summer program, the teachers were given the materials including tests, questionnaires and a set of basic instructions that they would need in connection with the research component of the project.

STATISTICAL ANALYSIS

In making comparisons of selected teacher and student characteristics between the control and experimental groups, a chi-square test of homogeneity was emplcyed. The comparisons were analyzed separately; in each instance, the formula used to determine significance follows:

$$\overline{X}^2 = \frac{\sum (O - E)^2}{E}$$

where $\overline{X}^2$ = chi-square
O = an observed frequency
E = an expected frequency

In the analysis of each comparison, the null and research hypotheses were formulated as follows:

H_O : No differences exist between the control and experimental groups

H_R : Significant differences exist between the groups

The level of significance in testing differences between the groups in each analysis was established at .05. The degrees of freedom in each analysis were equal to the number of rows minus one (R-1) times the number of columns minus one (C-1). From the analysis, it was possible to determine the extent to which the control and experimental groups were adequately matched for purposes of this study. The results of the chi-square tests of homogeneity are summarized above.

To test the significance of the difference between the mean scores on the pre- and post-CIT and on the pre- and post-TEU for the experimental and control groups, a one-way analysis of variance test was utilized. The comparisons were analyzed separately. In each instance the formula used to test significance follows:

$$F = S_b/S_w$$

where F = F ratio
S_b = between group sum of squares
S_w = within group sum of squares

In the analysis of each comparison, the null and research hypotheses were formulated as follows:

H_O : The difference between the arithmetic mean scores of the

experimental group students on the post-CIT and the control group students' post-CIT scores is not significantly different from zero.

H_R : A significant difference exists between the arithmetic mean scores of the two groups on the post-CIT.

H_O : There is no comparative advantage in offering consumer education courses at the pre-service and in-service levels of instruction, as measured by student performance on the CIT.

H_R : A comparative advantage exists in offering courses at the pre-service and in-service levels of instruction.

The level of significance in testing differences between groups in each analysis was established at .05. The degrees of freedom in each analysis were equal to the total number of observations minus the number of groups (N-k) plus the number of groups minus one (k-1).

Data collected in the study were also fit into linear regression equations, one for each of the models employed in testing the hypotheses of this study. This method was utilized in order to provide both qualitative and quantitative measurements of variables associated with the students and the teachers in the control and experimental groups. The regressions were analyzed separately; in each case, the formula used to test significance was as follows:

$$Y_1 = B_1X_1 + \ldots\ldots + B_jX_k$$

where Y_1 = test results on the post-CIT
X_k = independent variables
B_j = raw score contribution from independent variable

The independent variables incorporated in the regression equations were defined in terms of (1) student characteristics and high school program ($X_1 - X_9$), (2) reading habits ($X_{10} - X_{16}$), (3) television habits ($X_{17} - X_{21}$), (4) pre and post knowledge of economics and consumer affairs ($X_{22} - X_{24}$), (5) teacher characteristics and academic preparation ($X_{27} - X_{35}$), and (6) class characteristics (X_{36} and X_{37}). Teacher group (X_{26}) was used to identify the responses of the experimental and control group students, i.e., experimental group = 1, control group = 2. In all cases, the models specified X_{25}, post-CIT as the dependent variable. The variables included in the regression models are identified and explained in Chapter 4.

Model 1 explains net consumer knowledge gain. This model, with the post-CIT as the dependent variable, was run against all of the measured independent variables which both the students and instructors bring into the classroom prior to instruction as well as environmental variables such as grade level and program of study.

Model 2 explains consumer knowledge gain net of economic knowledge gain. This model includes the same prior predictor variables as Model 1 and adds post-TEU (X_{24}) as an independent variable.

Models 3 and 4 identify the comparative effect of teacher preparation on student performance, as measured by post-CIT. Model 3 specifies the effect of teacher preparation by pre-service programs; Model 4 identifies the effect of teacher preparation by in-service programs.

Models 5 through 8 identify the comparative effects of program and high school course completion on student performance net of teacher preparation.

Models 9 through 11 identify the comparative effect of program and high school instruction on student performance, net of teacher preparation, with subject area taught held constant.

The level of significance in testing the hypotheses of the study was established at .10. This cut-off level served to reduce the number of variables in each regression analysis and to determine the significance of selected combinations of student and teacher predictor variables.

SUMMARY

The experimental group of 16 high school teachers and 282 students and the control group of 24 teachers and 580 students, were selected for utilization in this study. The results of chi-square tests of homogeneity revealed that the experimental group teachers and students did not differ significantly from the control group teachers and students. As a result, the groups were considered adequately matched for the purposes of the study.

The Consumer Information Test (CIT) and the Test of Economic Understanding (TEU) were used to measure high school students' understanding of consumer education and economic knowledge. These tests were judged to be the most appropriate for the research problem and purposes of the study.

A two-phased curriculum creation and validation research project for secondary school business education, social studies, and home economics teachers was designed. The objectives of the project were to (1) teach in-service teachers consumer education concepts and practices, (2) develop inquiry-oriented teaching materials to assist students in understanding these concepts and practices, (3) measure the short-term impact of inquiry-oriented materials on students' understanding of consumer education concepts, and (4) measure the comparative advantage of offering courses in consumer education at the pre-service and in-service levels of instruction.

Data collected in the study were fit into linear regression equations, one for each of the eleven models employed in testing the hypotheses of this study.

Chapter 4

ANALYSIS AND INTERPRETATION OF DATA

This chapter contains a report of the findings according to the research questions underlying the central problem of the study, starting with the impact of the inquiry-oriented teaching materials on students' performance in consumer education. Following these findings are those pertaining to the comparative advantage of offering courses in consumer education at the pre-service and in-service levels of instruction. The final section of the chapter contains a report of the findings concerning teacher exposure to consumer education courses as a requirement in both pre-service and in-service training programs.

IMPACT OF TEACHING MATERIALS ON STUDENT PERFORMANCE

Tables 4 and 5 summarize the overall performance of the control and experimental student groups on the CIT and TEU instruments. As these tables indicate, the students in the experimental group achieved a lower mean score on both the pre-CIT and pre-TEU than students in the control group. In each analysis, the results of a chi-square test revealed significant differences at the .01 level in the mean scores for both tests between the control and experimental groups. The relevant chi-square values are reported in Table 6, lines 1 and 5.

TABLE 4

DESCRIPTION OF TEST RESULTS BETWEEN GROUPS

TEST	Total Group n = 862		Experimental Group n_e = 282		Control Group n_c = 580	
	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.
PRE-TEU	17.414	6.291	16.035	5.678	*	*
POST-TEU	17.894	6.393	17.456	6.209	18.090	6.469
PRE-CIT	32.128	8.826	30.176	8.914	*	*
POST-CIT	33.034	9.152	32.938	10.225	33.077	8.633

*The control group students were administered each test only once, and the pre-test scores were used as post results in the analyses.

TABLE 5

DESCRIPTION OF TEST RESULTS BETWEEN GROUPS

Student Group / Test	NINTH n_e = 103 n_c = 37		TENTH n_e = 40 n_c = 50		ELEVENTH n_e = 69 n_c = 179		TWELFTH n_e = 69 n_c = 314		'F' RATIO
	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	
Experimental Pre-TEU	16.15	6.49	14.27	4.16	17.64	5.57	15.46	4.79	3.52**
Control Pre-TEU	15.62	3.90	16.54	5.07	17.41	7.83	18.84	6.12	4.701*
Experimental Pre-CIT	27.84	9.08	29.44	6.84	32.45	8.36	32.18	9.31	5.30**
Control Pre-CIT	28.86	7.37	31.92	8.44	32.28	9.52	33.57	9.25	3.36**

n_e = experimental subpopulation
n_c = control subpopulation
* = significant at the .01 level
** = significant at the .05 level but not at the .01 level

Table 4 indicates that the mean scores of the experimental group students increased from 30.18 on the pre-CIT to 32.94 on the post-CIT. As measured by the TEU, the mean scores of the experimental group increased from 16.04 on the pretest to 17.46 on the posttest. Intuitively, the average increase of 2.76 on the CIT and 1.42 on the TEU becomes significant when one considers that the pretests represent an accumulation of all past learning.

A comparison of overall mean scores on the pre-CIT and pre-TEU conceals the within-grade test performance and the effect of grade level on prior consumer affairs knowledge. With respect to grade level

distribution, the control group had a high concentration of twelfth grade students and relatively few ninth grade students whereas the experimental group contained a substantially larger number and ratio of ninth grade students. More specifically, the control group consisted of 55 percent twelfth graders and six percent ninth graders whereas the experimental group contained 25 percent twelfth grade and 37 percent ninth grade students. Although it cannot be shown that the variance found in test score performance on both the pre-CIT and pre-TEU between the two groups could be attributed solely to differences in grade level distributions in the study sample, disaggregating the data to make in-grade comparisons tended to reveal significant differences in test scores by grade. That is, when the test results were compiled and analyzed by grade level divisions, the control group was superior in their pre-CIT performance in all cases but the eleventh grade. In terms of their pre-TEU performance, the control group was superior in the tenth and twelfth grades. As shown in Table 5, the experimental group's ninth grade mean score on the pre-TEU was .50 higher than the control group's ninth grade score. Similarly, the experimental group's eleventh grade mean scores on the pre-TEU and pre-CIT exceeded the control group's eleventh grade mean scores by .23 and .17 respectively. When analyzing the results by grade level, the magnitude of the differences between the experimental and control group's performance on both the pre-CIT and pre-TEU appeared smaller than when the data were aggregated.

A comparison of the pre- and posttest results indicated that the use of inquiry-oriented teaching materials had a positive effect on student learning, as measured by the CIT and TEU instruments. Table 6 summarizes the results of the chi-square test of matching variables in which the distribution of scores were arrayed around a selected median score. As shown in this table, the chi-square values in lines 1 and 5 indicated that the two populations were initially heterogeneous with respect to distribution of scores around the control group's median score on the TEU and CIT; whereas lines 3 and 7, the chi-square values indicate these two groups possessed a homogeneous distribution. The apparent conclusion is that the experimental group students experienced a significant change in performance as a result of the exposure to the inquiry-oriented materials. Additionally, the chi-square tests in lines 4 and 8 further confirm that the experimental group's performance changed significantly from the pretest to posttest phase of the project.

TABLE 6

CHI-SQUARE TEST OF MATCHING VARIABLES

MATCHING VARIABLES	Chi-Square X^2	Degrees of Freedom
*1. Control pre-CIT vs. Experimental pre-CIT	11.024*	1
2. Total Group pre-CIT vs. Total Group post-CIT	3.677	1
3. Control post-CIT vs. Experimental post-CIT	.61719	1
4. Experimental pre-CIT vs. Experimental post-CIT	5.9221*	1
*5. Control pre-TEU vs. Experimental pre-TEU	15.154*	1
6. Total Group pre-TEU vs. Total Group post-TEU	1.7273	1
7. Control post-TEU vs. Experimental post-TEU	2.5785	1
8. Experimental pre-TEU vs. Experimental post-TEU	4.1969*	1

*The difference between the two populations are statistically significant at the .05 level.

In order to verify the relationship of the CIT and TEU instruments and thus validate the use of TEU performance as a measure of the impact of inquiry-oriented materials, test results were fit into linear regressions. The regression results are as follows:

$$\text{Pre-CIT} = .5462\ (\text{Pre-TEU});\ R^2 = .298$$
$$\text{Post-CIT} = .5845\ (\text{Post-TEU});\ R^2 = .342$$

In this case, the two regressions are essentially stable in that both Beta coefficients are approximately the same (.5462 and .5845). Additionally, the per cent of explained variance differs only slightly (30 and 34 per cent) between the two cases. The importance of the regression results with respect to the central problem of the study, is the positive relationship between the CIT and TEU; as one increases, so does the other. This relationship reflects that using inquiry-oriented materials leads to improvement in test scores which aver to measure understanding of economic and consumer education knowledge.

Data collected in the study were also fit into linear regression equations, one for each of the eleven models employed in testing the hypotheses of this study. Tables 7, 8, and 9 identify the variables used in the regression models and summarize the results of the analysis. The overall findings reported in these tables supports the claim that the inquiry-oriented materials had a positive effect on students' understanding of consumer education concepts and practices.

The regression results for Models 1 and 2, which respectively measure the "net CIT gain" and "CIT gain net of economic gain" do not confirm that the inquiry mode of instruction contributed positively to student performance. These models which reflect the effect of other variables as well as the effect of inquiry-oriented materials on student performance, as measured by the CIT instrument, indicate that the coefficient of the teacher group variable (X_{26}) did not differ significantly from zero. The positive coefficient signs in both models

suggests that students in the control group, who presumably were not exposed to inquiry-oriented materials, would have higher test scores on the CIT than students in the experimental group.

Other regression models in which variables measuring students' reading habits and television viewing patterns, as well as certain qualities were excluded, indicated that the teacher group variable (X_{26}) was significant at the .05 level. The positive coefficient sign indicated that the experimental group students responded positively to the inquiry-oriented material. One exception to this observation occurred in Model 10 which tests this relationship among students of social studies teachers. In this case, the coefficient of the variable was significant at the .10 level but not at the .05 level, and the sign of the coefficient indicated that experimental group students responded negatively to the inquiry mode of instruction.

TABLE 7

REGRESSION COEFFICIENTS FOR MODELS 1 AND 2

(Dependent Variable: Post Consumer Test X_{25})

INDEPENDENT VARIABLES STUDENT CHARACTERISTICS:	MODEL 1	MODEL 2
X_1 Enrolled grade of student (7th grade = 7, 8th grade = 8, ..., 7-12)	-.06426 (2.2929)**	-.22836
X_2 Students' sex (Male = 1, female = 2, 1-2)	.53077	.94733 (1.85)***
X_3 Program of Instruction (academic = 1, vocational = 2, commercial = 3, general = 4, 1-4)	-.04029	#
X_4 Completed high school economics course (yes = 1, no = 2, 1-2)	#	-.98749
X_5 High school economic grade level (7th grade = 7, 8th grade = 8, ..., 7-12)	-.01053	-.16117
X_6 Completed other courses with economic content (yes = 1, no = 2, 1-2)	-.27063	-.39802
X_7 Completed high school consumer education course (yes = 1, no = 2, 1-2)	3.49223	2.00383
X_8 High school consumer education grade level (7th grade = 7, 8th grade = 8, ..., 7-12)	.23363	.09604
X_9 Completed other courses with consumer education content (yes = 1, no = 2, 1-2)	-1.48942 (2.0319)**	-1.03907

X_{10} Read newspapers (yes = 1. no = 2, 1-2)	-1.3320	-1.1020
X_{11} Read magazines (yes = 1, no = 2, 1-2)	.39771	.33773
X_{12} Read financial section of newspaper (yes = 1, no = 2, 1-2)	-.35609	.27276
X_{13} Read financial section of magazine (yes = 1, no = 2, 1-2)	.15968	.23736
X_{14} Read Wall Street Journal (yes = 1, no = 2, 1-2)	1.15966	1.45228
X_{15} Read Business Week (yes = 1, no = 2. 1-2)	.60419	.24196
X_{16} Read Fortune (yes - 1, no = 2, 1-2)	-1.10565	-.50633
X_{17} Watch television news (yes = 1, no = 2, 1-2)	.81184	.73783
X_{18} Watch "60 Minutes" (yes - 1, no = 2, 1-2)	.73353	-.78948
X_{19} Watch "First Tuesday" (yes = 1, no = 2, 1-2)	.36830	.17490
X_{20} Watch news interview show (yes = 1. no = 2, 1-2)	-.29039	-.63021
X_{21} Watch educational television (yes = 1, no = 2, 1-2)	1.42783 (1.96)**	1.34255 (1.96)**
X_{22} Pre-TEU (Raw scores, 0-33)	.20796 (4.46)*	-.33657 (4.879)*
X_{23} Pre-CIT (Raw scores, 0-68)	.81502 (24.84)*	.75681 (24.13)*
X_{24} Post-TEU (Raw scores, 0-33)	##	.62814 (10.23)*

X_{25} Post-CIT (Raw scores 0-68)	---	---
X_{26} Teacher group (experimental = 1 control = 2, 1-2)	.19663	.39359
X_{27} Teacher sex (Male = 1, female = 2, 1-2)	.28549	.30082
X_{28} Subject taught (Business education = 1, Social studies = 2, Home economics = 3, 1-3)	-.45376	#
X_{29} Teacher credit hours in economics (1 hr. credit = 1, 2 hr. credit = 2, ...,)	.02807	.04998
X_{30} Teacher credit hours in consumer education	.02072	.00487
X_{31} Economics in-service credit hours	-.03637	-.11580
X_{32} Consumer education in-service credits (None = 1, 1-3 = 3, More than 3 = 3, 1-3)	.26906	-.91515
X_{33} Years teaching experience (1 year = 1, 2-3 years = 2, 4-5 years - 3, 6-9 years = 4, 10-20 years = 5, over 20 years = 6, 1-6)	.16214	.42356 (2.07)**
X_{34} Highest degree earned (No degree = 1, Bachelors = 2, Masters = 3, Specialist = 4, Ph.D. = 5, 1-5)	.25002	-.48547
X_{35} Undergraduate major (Business education = 1, Social studies = 2, Home economics = 3, 1-3)	.200035	-.03549
X_{36} Graduate major (None = 0, Business education = 1, Social science = 2, Home economics = 3, 1-3)	.68822	.91501

X_{37} Class grouping (Homogeneous = 1, heterogeneous = 2, 1-2)	#	#
X_{38} Ranking of class (Top 10% = 1, upper 25% = 2, upper 50% = 3, 25-50 percentile = 4, 0-25 percentile = 5, 1-5)	-.24913	-.26232
Constant	-2.8111	9.867
R^2	.60111	.64691
S.E.E	6.8405	6.4328

#F-level insufficient for further computation

##Variable was excepted for inclusion

(t value in parentheses)

NOTE: t values not reported when significant below the .10 level

*t value significant at .05 level

**t value significant at .10 level

COMPARATIVE ADVANTAGE OF OFFERING CONSUMER EDUCATION COURSES

Table 8 summarizes the regression results for Models 3 and 4. Regression Models 3 and 4, in which grade (X_1), high school courses (X_4 and X_7), teacher experience (X_{33}), and pretest scores were held constant, show no significant relationship between CIT performance and teacher preparation in consumer education.

In both models, the regression coefficients for pre-service and in-service consumer education credit (X_{30} and X_{32}) are not significantly different from zero. In Model 3, the sign is negative indicating more pre-service credit hours had a detrimental effect on CIT performance. In Model 4, the coefficient sign is positive indicating the converse relationship. Returning to Table 7, the step down regression models 1 and 2, provided a similar outcome when all student and teacher variables were included.

TABLE 8

REGRESSION COEFFICIENTS FOR MODELS 3 AND 4

(Dependent Variable: Post Consumer Test, X_{25})

INDEPENDENT VARIABLES	MODEL 3	MODEL 4
X_1 Grade	-.28594 (1.332)	-.28580 (1.349)
X_4 High School Economics	1.51893 (2.494)**	.92887 (1.563)
X_7 High School Consumer Education	.92395 (1.742)***	1.09710 (2.089)**
X_{22} Pre-TEU	.11660 (3.043)*	.12344 (10.372)*
X_{23} Pre-CIT	.90785 (32.992)*	.90661 (32.857)*
X_{26} Teacher Group	-2.24245 (4.316)*	-1.61934 (10.607)*
X_{33} Teacher Experience	.66940 (3.946)*	.48947 (7.835)*
X_{29} Teacher Pre-Service Economics Credit	.45258 (2.052)**	
X_{31} Teacher In-Service Economics Credit		.70871 (4.952)*
X_{30} Teacher Pre-Service Consumer Education Credit	-.34143 (1.521)	
X_{32} Teacher In-Service Consumer Education Credit		.12140 (1.58)
Constant	-2.389	-2.501
R^2	.81911	.81811
S.E.E.	3.9431	3.954

t values in parenthesis

*t value significant at the .01 or higher level

**t value significant at the .05 level but not at .01 level

***t value significant at the .10 level but not at the .05 level

As a collateral consideration for teacher preparation, regression Models 3 and 4 provide evidence of a similar pattern with respect to the pair of variables measuring pre-service and in-service economic credit (X_{29} and X_{31}). In this case, however, the coefficients of both variables are significant at the .05 and .01 levels, respectively. Moreover, the positive sign shed some light on the comparative effect of course work in economics and consumer education. In both models, the coefficients associated with these variables indicated that each additional level of teacher preparation, as measured by economics credit hours (X_{29} and X_{31}), aids the students' understanding of consumer affairs. In as much as the in-service economic credit coefficient (X_{31}) is larger, (.70871 vs. .45258) and more significant than the pre-service economic credit variable (X_{29}), there is slight positive support for the hypothesis that a comparative advantage exists in offering consumer education training in the in-service economics programs.

TEACHER EXPOSURE TO CONSUMER EDUCATION COURSES

Regression Models 5, 6, 7, and 8 give insight into the influence of pre- and in-service economics and consumer education training programs. As shown in Table 9, the predominent pattern suggested by the coefficients of the teacher preparation variables is that the pre-service and in-service consumer education courses have had no significant effect on student performance regardless of the students' past coursework preparation. With respect to the pre- and in-service economics courses, such teacher preparation programs have had a positive effect on student performance, given the same student backgrounds. Such patterns are evident in the regressions in which the variables for student grade (X_1), program (X_3), teacher group (X_{26}), teacher experience (X_{33}), and student pretests were held constant. In Models 5 and 6, given that the students have had high school economics, none of the teacher preparation variables (X_{29}, X_{31}, and X_{32}), except in-service economics credit (X_{30}), are significant at the .10 level. The latter is significant at the .01 level and the sign is positive indicating such course content as is normally treated in in-service courses aids student understanding of consumer education concepts.

Regression Models 7 and 8 further substantiate the effect of course content in teacher preparatory programs on student performance. In these cases, given that the students have had high school consumer education courses, neither of the teacher preparation variables measuring consumer education course work (X_{30} and X_{32}) were significant. However, the pre-service economics variable (X_{29}) was significant at the .10 level, and the in-service economics variable (X_{31}) was significant at the .01 level. Both of the latter variables were positive, indicating that such course content reflected itself in higher student performance. Equally significant is that the coefficient for the in-service variable was substantially larger than that of the pre-service variable, .905 and .250 respectively.

TABLE 9

REGRESSION COEFFICIENTS OF MODELS 5, 6, 7, AND 8

(Dependent Variable: Post Consumer Test X_{25})

Independent Variable	Model 5	Model 6	Model 7	Model 8
X_1 Grade	-.41533 (2.752)*	-.43354 (2.878)*	-.43341 (2.866)*	-.41913 (2.862)*
X_3 Program	.40184 (3.298)*	.35583 (3.004)*	.32449 (2.694)*	.37165 (3.182)*
X_4 High School Economics	-.14182 (.349)	-.15654 (.384)		
X_7 Consumer Education			1.07003 (2.815)*	1.18892 (3.185)*
X_{22} Pre-TEU	.13022 (4.728)*	.13275 (4.823)*	.12152 (4.402)*	.12704 (4.641)*
X_{23} Pre-CIT	.89799 (45.544)*	.89705 (45.474)*	.89497 (45.443)*	.89860 (45.965)*
X_{26} Teacher Group	-2.45884 (6.373)*	-2.20963 (6.373)*	-2.27825 (6.091)*	-2.06545 (5.943)*
X_{33} Teacher Experience	.04219 (.353)	.05119 (.428)	.19970 (1.772)***	.08872 (.754)
X_{29} Teacher Pre-Service Econ. Credit	.25026 (1.589)		.27835 (1.750)***	
X_{31} Teacher In-Service Econ. Credit		.90487 (3.892)*		.89298 (3.927)*
X_{30} Teacher Pre-Service Con. Ed. Credit	-.89214 (1.630)		.08546 (.565)	
X_{32} Teacher In-Service Con. Ed. Credit		-.80873 (1.483)		-.88294 (1.628)
Constant	8.48199	9.05131	5.80259	6.25092
R^2	.80482	.80420	.80354	.80662
S.E.E.	4.06511	4.06899	4.07585	4.0438

t values in parentheses

*t value significant at the .01 or higher level

**t value significant at the .05 level but not at .01 level

***t value significant at .10 level but not at .05 level

Table 9 indicates that student performance on the CIT instrument is functionally related to high school course work as evidenced by the differences in the coefficients of the student variables X_4 and X_7. One may note that while the coefficients of the high school economics variable are not significant, the coefficients of the consumer education variable are significant at the .01 level and positive. This suggests once again that such course work as it has been taught conventionally does not aid in student understanding of consumer education concepts. Overall, the results provide tentative support for teacher training at pre- and in-service level, and such courses should apparently focus on fundamental economic concepts.

As revealed in Table 10, the net consumer education gain as measured by the CIT and TEU, did not occur equally among the students. The data indicated that the differences in the mean scores achieved by business education, social studies, and home economic students, were significant at the .05 level.

TABLE 10

EXPERIMENTAL AND CONTROL GROUP
TEST PERFORMANCE BY SUBJECT AREA

($\bar{X}$ = Mean Raw Scores)

TEST	SUBJECT AREA						F Ratio
	Business Ed. $n_e = 95$ $n_c = 376$		Social Studies $n_e = 105$ $n_c = 99$		Home Econ. $n_e = 82$ $n_c = 65$		
	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	
Exp. Pre-TEU	16.22	6.20	16.76	6.02	15.01	4.5	2.27
Exp. Pre-CIT	31.08	9.87	30.23	8.19	29.66	8.42	.55
Exp. Post-TEU	18.75	6.40	18.59	6.20	14.79	4.97	11.55*
Cont. Post-TEU	18.63	7.07	16.68	5.48	17.57	5.46	3.70*
Exp. Post-CIT	35.83	11.47	33.37	8.10	29.44	10.11	8.57*
Cont. Post-CIT	33.24	9.56	31.93	9.30	32.12	7.55	1.01

* Significant at the .05 level but not the .01 level

In a subsequent test of the hypothesis concerning the effect of the experimental materials, regression Models 9 and 10 were run separately by subject taught (X_{28}) using the same independent variables as Models 3-8. Table 11 summarizes the results of the computations.

TABLE 11

REGRESSION COEFFICIENTS FOR MODELS 9, 10, AND 11

(Dependent Variable: Post-CIT X_{25})

INDEPENDENT VARIABLE	SUBJECT TAUGHT (X_{28})		
	Model 9 Business Ed.	Model 10 Social Studies	Model 11 Home Econ.
X_1 Grade	-.17801 (.987)	-1.43128 (3.486)	-.70204 (746)
X_3 Program	.09344 (.683)	.12482 (.48)	-.89969 (1.726)***
X_4 High School Economics	-.03733 (.104)	-1.07176 (1.057)	-.33926 (.214)
X_7 High School Con. Education	.61190 (1.732)	#	2.10337 (1.270)
X_{22} Pre-TEU	.06132 (2.593)**	.06264 (.95)	.26333 (2.268)*
X_{23} Pre-CIT	.96301 (53.75)*	.83674 (19.473)*	.71332 (10.53)*
X_{26} Teacher Group	-3.57637 (7.177)*	1.67837 (1.710)***	-8.03167 (2.889)
X_{29} Teacher Pre-Service Econ. Credit	-.28836 (2.002)**	-.48086 (.94)	8.00814 (3.847)*
X_{30} Teacher Pre-Service Con. Ed. Credit	.07521 (.380)	1.21416 (2.439)**	3.45235 (2.909)*
X_{31} Teacher In-Service Econ. Credit	.99584 (4.304)*	#	-.50218 (.386)
X_{32} Teacher In-Service Con. Ed. Credit	.23983 (.264)	#	#
Constant	6.37826	19.30828	-15.50546
R^2	.91667	.78974	.66272
S.E.E.	2.7419	3.96477	5.48788

F level not sufficient for further computation
* t value significant at the .01 level
** t value significant at the .05 level but not the .01 level
*** t value significant at the .10 level but not the .05 level

With respect to the effect of the experimental materials, the separate regressions bear out that the groups when identified by the subject taught (X_{28}) responded differently. In Models 9 and 11, with business education and home economics students, the negative signs of the coefficients were significant at the .01 level and indicated that the students' performance was improved by the use of the material. In Model 11, with social studies students, the coefficient was significant at the .10 level but the sign was positive, indicating that the size of the coefficients are equally revealing in that the net CIT gain differed substantially according to subject assignment. In the business education area, the effect of the materials was one in which test scores increased approximately 3.6; in the home economics area it was 8.0; and in the social studies area it was -1.7. Considering that the students were adequately matched, as indicated by the F ratio associated with both pre-CIT and pre-TEU scores, positive gains in the business education and home economics areas supports the use of the inquiry mode of instruction for such classes. Likewise, the opposite inference may be drawn with respect to social studies; however, since the coefficient is not as large as the other two, the case against using the inquiry mode is less convincing.

SUMMARY

The analyses reported in this chapter provide quantitative and qualitative assessments of the data collected in this project. As such they provide insights into the effectiveness of the inquiry mode of instruction which can be used by high school and college administrators and educators as guidelines for developing course curricula and teacher qualification criteria.

The analyses show that the short-term impact of inquiry-oriented materials positively affects students' understanding of consumer education concepts and practices as measured by the Consumer Information Test. The impact varies by student grade and other institutional influences. It shows also that a significant degree of correlation exists between conventional economic understanding as measured by the TEU and consumer education knowledge, as measured by the CIT.

As indicated in Table 4, the experimental group of 282 students had a post-CIT mean score of 32.978, an approximate change of 2.75 from the pre-CIT score. Table 6, line 4, indicates that the difference in pre- and post-CIT scores was significant at the .05 level, as measured using a chi-square test, and as such it supports the hypothesis that inquiry-oriented materials are effective in transmitting consumer education content to high school students. Additionally, regression Models 3-8 confirmed these significant results. In each of the regression models, the teacher group (X_{26}) was coded in dummy form: experimental group = 1, control group = 2. The results of these equations

showed that the teacher group coefficient had a negative sign; students in the experimental group had an increase in test scores relative to the control group. This outcome may be functionally related to (1) the inquiry-oriented materials developed by the teachers in the experimental group, and (2) the knowledge of consumer education concepts and practices gained by the experimental group teachers from the content and methods phases of the project, which presumably, the teachers transmitted to their students.

In terms of pre- and in-service economics and consumer education training, the analyses did not confirm the existence of a comparative advantage in a specific level of training. The evidence, at best, showed only a slight causal preference for economics in-service training relative to economics pre-service training. The results of the analysis, however, did show that the course content of traditional economic courses should continue to be a requirement in pre-service and in-service training programs.

Finally, the results point out that the inquiry mode of instruction and associated experimental materials is an effective way to transmit consumer education content to secondary business education, social studies, and home economics students. These findings, however, are qualified in that the analyses indicate wide variances in the responsiveness of students to such materials; business education and home economics students respond favorably to inquiry-oriented materials but the materials had an adverse effect upon social studies students.

Chapter 5

CONCLUSIONS AND RECOMMENDATIONS

This chapter presents a summary of the major conclusions of the study. In the final section of the chapter, several areas of interest which may be appropriate for future research are recommended.

CONCLUSIONS

It is apparent that student understanding of consumer education concepts and practices is a product of many factors. In a discussion of teaching methodology and learning processes, these forces can be organized in a variety of ways. The approach utilized in this investigation was to organize these factors into basic elements of student characteristics, high school programs, reading and television watching patterns, and teacher qualifications. The significant factors are those which caused the students to grasp an understanding of consumer education concepts and practices.

The basic model visualized that the use of inquiry-oriented teaching materials plus in-service training for teachers should cause students of those teachers to respond differently on testing instruments which measure understanding of consumer concepts than students who receive the regular consumer education curriculum. On the basis of the observed differences in the CIT and TEU test performances between the two groups, the effects of the materials and the inquiry mode of instruction were estimated. The effectiveness of the materials and the mode of instruction was based on fundamental statistical relationships derived by use of analysis of variance, chi-square tests of homogeneity, and regression analysis. All three methods were relied upon to assess the applicability of the inquiry-oriented materials to specific segments of the high school populations.

On the basis of these tests, answers to four questions were determined with the reservation that what was claimed to be the effect of the materials may in fact have been influenced by the teachers' performance, which was functionally related to the in-service training they received during the project. Notwithstanding this indeterminateness, the model indicated that the short-term impact of inquiry-oriented materials was positive and significant. Student performance, measured by the change in raw scores on the CIT instrument, appeared functionally related to the students' previous course work, subject area taught by the teacher, and formal course work completed by the teacher as well as to the inquiry mode of instruction.

These latter relationships helped to determine specific answers to the other questions initially posed. First, the evidence gives a highly qualified answer to the question about the existence of a com-

parative advantage at a specific level of teacher preparation. Rather than achieve an answer to the question posed, the data better supported a question about the kind of course the teacher should receive; the data favored economics instruction. Implicitly, the answer to the third question was derived while searching for the former. Students responsiveness to the inquiry mode varied in the sense that students of business education and home economics teachers showed a greater gain in test scores than did students of social studies teachers. In a similar vein, the students who had previous consumer education courses did not have any advantage over students who had other nonconsumer education courses, suggesting that the traditional treatment of such subject matter is less effective than the inquiry mode of instruction.

In summary, the major conclusions of the study are listed below.

1. The inquiry-oriented teaching materials developed and utilized by the experimental group teachers in the study population, positively affects students' understanding of consumer education concepts and practices.

2. Inquiry-oriented teaching materials are more effective in transmitting consumer education content to high school business education and home economics students than social studies students utilized in the study.

3. A slight causal preference exists in offering consumer education instruction in in-service economics courses, for teachers in the study sample, than in pre-service economics courses or pre-service and in-service consumer education courses.

4. The traditional treatment of consumer education subject-matter is less effective than the inquiry mode of instruction.

RECOMMENDATIONS

The findings and conclusions of the present study suggest several areas of interest for further investigation at a later time.

A basic shortcoming existed in the model utilized in the study because it did not provide a means to differentiate between the causal relationship of the summer episode effect and student performance, and the inquiry-oriented materials and student performance. This shortcoming prevailed because of the dichotomous nature of the dummy variable which simply identifies the teacher group as experimental and control. As stated elsewhere, the claim that the inquiry-oriented materials had specific effects may in fact have been due to the teacher's training or other collateral effects, e.g., teachers having been part of the summer phase of the project. The obvious implication to be drawn from this shortcoming is that the study needs to be replicated to compare student groups under four independent sets of conditions including (1) students who are taught consumer education using the traditional curriculum, (2) students who are taught by teachers recently trained in the inquiry

mode of instruction, (3) students who are taught by teachers using inquiry-oriented materials, but who have not been trained in this inquiry mode of instruction, and (4) students who are taught by teachers using inquiry-oriented materials and who recently have been trained in the inquiry mode of instruction.

The study has further implications for replication in that the question arises about the significance of recency of previous pre-service and in-service training, years of teaching experience and other measures of teacher quality or qualifications. In as much as the teacher experience variable casts little light on student performance as measured by the CIT instrument, a related question arises about the relative weight that should be assigned to completed course work in pre- and in-service programs. The implication is for a study similar in nature to the one just completed, but one which is expanded to test for the effect of elapsed time since course work was accomplished on student understanding of consumer education. Logically, it should provide a basis for making cost benefit analyses of teacher training programs.

Notwithstanding the need for more study and the conditional findings reported, the study has provided gainful insights for high school and college administrators concerned about curriculum development, teaching methods and the relative effectiveness of alternative teacher preparatory programs. It suggests at least that under most conditions the inquiry mode of instruction satisfactorily enhances the students' understanding of consumer education concepts and practices.

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APPENDIXES

APPENDIX A

QUESTIONNAIRE FOR ALL TEACHERS

QUESTIONNAIRE FOR ALL TEACHERS

Name_____ Sex_____

1. Name of undergraduate college attended_____

2. Subjects taught and percent of school day spent on each:

_____ _____%

_____ _____%

_____ _____%

_____ _____%

_____ _____%

3. Credit hours of college course work in Economics prior to this workshop.

Undergraduate_____ Year taken_____

Graduate_____ Year(s) taken_____

4. Credit hours of in-service work in Economics:
Undergraduate_____Year(s) taken_____Duration in hours per week_____Duration in number of weeks_____.

Graduate_____Year(s) taken_____Duration in hours per week_____Duration in number of weeks_____.

5. Credit hours of college course work in Consumer Education:

Undergraduate_____Year taken_____

Graduate_____Year(s) taken_____

6. Credit hours of in-service work in Consumer Education:
Undergraduate_____Year(s) taken_____Duration in hours per week_____Duration in number of weeks_____.

Graduate_____Year(s) taken_____Duration in hours per week_____Duration in number of weeks_____.

7. Number of years teaching experience

1 _____	6-9 _____
2-3 _____	10-20 _____
4-5 _____	over 20 _____

8. Highest degree achieved: No degree_____Bachelor's_____
Master's_____Specialist_____Doctor's_____

9. Undergraduate major (Circle the most appropriate item):

a. Elementary education	e. History
b. Secondary education	f. Political Science
c. Social Sciences	g. Guidance and Counseling
d. Economics or Econ. Ed.	h. Other_____

10. Graduate major (Circle the most appropriate item):

a. Elementary education	e. History
b. Secondary education	f. Political Science
c. Social Sciences	g. Guidance and Counseling
d. Economics or Econ. Ed.	h. Other_____

11. College class standing, undergraduate:
a. top 25% _____
b. 50-75% _____
c. 25-50% _____

12. Do you group homogeneously_____heterogeneously_____in your school?

13. If you group homogeneously, what is the ability level of the class being tested, as measured by nationally standardized intelligence tests?

a. top 10% _____	d. 25-50 percentile _____
b. upper 25% _____	e. 0-25 percentile _____
c. upper 50% _____	

14. What standardized ability or intelligence test does your school use to test your students?_____

15. Please list the names of the students in your class, and the score they received on this test the last time it was administered.

APPENDIX B

QUESTIONNAIRE FOR ALL STUDENTS

QUESTIONNAIRE FOR ALL STUDENTS

Name_____ Sex_____
Last First Middle

Sex: M. F. (circle one)

Course program

Academic
Vocational
Commercial (circle one)
General

1. Have you taken a separate high school course in Economics?
Y. N. (circle one)

2. In what grade?_____ Name of teacher who taught it_____

3. Have you taken another high school course in which Economics was studied? _____

Name of course_____Name of teacher_____

Name of text_____

4. Have you taken a separate high school course in Consumer Education?
Y. N. (circle one)

5. In what grade?_____Name of teacher who taught it_____

6. Have you taken another high school course in which Consumer Education was studies? _____

Name of course_____ Name of teacher_____

Name of text_____

7. Check which of the following items you have read within the past four weeks:

a. A daily newspaper

b. A weekly news magazine such as Newsweek, Time, U.S. News, etc.

c. The economic, business, or financial section of "a"

7. d. The economic, business, or financial section of "b"

   e. The Wall Street Journal

   f. Business Week Magazine

   g. Fortune Magazine

8. Check which of the following T.V. or Radio programs you have watched or listened to within the past four weeks:

   a. A daily news program

   b. "60 Minutes"

   c. "First Tuesday"

   d. Face the Nation; Meet the Press; Issues & Answers

   e. A program in Ecuational T.V.

9. List the title of your father's occupation_____

   Briefly describe what he does_____

   _____

   _____

APPENDIX C

SUMMARY OF SELECTED STUDENT RESPONSES ON SURVEY QUESTIONNAIRE

PERCENTAGE DISTRIBUTION OF STUDENT RESPONSES

QUESTION	Students of Teachers With Different Years of Experience									
	One Year		Two to Three		Four to Five		Six to Nine		Ten to Twenty	
Check which of the following you have read within the last four weeks:	Exp. n (44)	Cont. n (21)	Exp. n (65)	Cont. n (116)	Exp. n (34)	Cont. n (91)	Exp. n (71)	Cont. n (79)	Exp. n (116)	Cont. n (254)
a. Daily Newspaper										
Yes	.93	.95	.80	.93	.94	.99	.85	.95	.95	.93
No	.07	.05	.20	.07	.06	.01	.15	.05	.05	.07
b. Weekly news magazine										
Yes	.73	.38	.46	.59	.26	.63	.37	.56	.59	.59
No	.27	.62	.54	.41	.74	.37	.63	.44	.41	.41
c. The economic business or financial section of "a"										
Yes	.14	.14	.09	.23	.21	.18	.14	.23	.12	.22
No	.86	.86	.91	.77	.79	.82	.86	.77	.88	.78
d. The economic business or financial section of "b"										
Yes	.02	.05	.06	.10	.00	.09	.03	.20	.10	.12
No	.98	.95	.94	.90	1.00	.91	.97	.80	.90	.88
e. Wall Street Journal										
Yes	.02	.10	.02	.04	.00	.00	.01	.01	.05	.03
No	.98	.90	.98	.96	1.00	1.00	.99	.99	.95	.97
f. Business Week										
Yes	.05	.05	.02	.03	.00	.04	.03	.06	.08	.13
No	.95	.95	.98	.97	1.00	.96	.97	.94	.92	.87
g. Fortune										
Yes	.07	.10	.00	.03	.00	.00	.01	.00	.06	.04
No	.93	.90	1.00	.97	1.00	1.00	.99	1.00	.94	.96

PERCENTAGE DISTRIBUTION OF STUDENT RESPONSES

QUESTION	All Students		Ninth Grade		Tenth Grade		Eleventh Grade		Twelfth Grade	
Check which of the following items you have read within the last four weeks:	Exp. n (282)	Cont. n (580)	Exp. n (103)	Cont. n (37)	Exp. n (41)	Cont. n (50)	Exp. n (69)	Cont. n (179)	Exp. n (69)	Cont. n (314)
a. A daily newspaper										
Yes	.89	.95	.87	.92	.88	1.00	.86	.96	.94	.94
No	.11	.05	.13	.08	.12	.00	.14	.04	.06	.06
b. A weekly news magazine										
Yes	.49	.58	.46	.41	.54	.48	.62	.53	.39	.66
No	.51	.42	.54	.59	.46	.52	.38	.47	.61	.34
c. The economic business or financial section of "a"										
Yes	.13	.21	.14	.27	.12	.30	.13	.23	.13	.17
No	.87	.79	.76	.73	.88	.70	.87	.77	.87	.83
d. The economic business or financial section of "b"										
Yes	.07	.12	.05	.05	.05	.06	.07	.08	.10	.16
No	.93	.88	.95	.95	.95	.94	.93	.92	.90	.84
e. Wall St. Journal										
Yes	.03	.03	.01	.00	.00	.02	.04	.04	.06	.02
No	.97	.97	.99	1.00	1.00	.92	.96	.96	.94	.98
f. Business Week										
Yes	.04	.08	.03	.05	.05	.10	.07	.09	.03	.08
No	.96	.92	.97	.95	.95	.90	.93	.91	.97	.92
g. Fortune										
Yes	.03	.03	.02	.22	.02	.04	.03	.02	.04	.02
No	.97	.97	.98	.78	.98	.96	.97	.98	.96	.98

PERCENTAGE DISTRIBUTION OF STUDENT RESPONSES

QUESTION	Total Social Studies		Total Business Education		Total Home Economics		Total Male		Total Female	
Check which of the following items you have read within the last four weeks:	Exp. n (105)	Cont. n (99)	Exp. n (95)	Cont. n (376)	Exp. n (82)	Cont. n (65)	Exp. n (121)	Cont. n (227)	Exp. n (161)	Cont. n (353)
a. A daily newspaper										
Yes	.87	.93	.92	.95	.88	.92	.87	.93	.91	.96
No	.13	.07	.08	.05	.12	.08	.13	.07	.09	.04
b. A weekly news magazine										
Yes	.54	.60	.53	.59	.43	.58	.56	.64	.47	.55
No	.46	.40	.47	.41	.57	.42	.44	.36	.53	.45
c. The economic business or financial section of "a"										
Yes	.15	.15	.12	.22	.13	.26	.12	.18	.14	.23
No	.85	.85	.88	.78	.87	.74	.88	.82	.86	.77
d. The economic business or financial section of "b"										
Yes	.06	.10	.06	.14	.05	.09	.08	.13	.04	.11
No	.94	.90	.94	.86	.95	.91	.92	.87	.96	.89
e. Wall Street Journal										
Yes	.05	.03	.01	.02	.02	.05	.05	.04	.01	.01
No	.95	.97	.99	.98	.98	.95	.95	.96	.99	.99
f. Business Week										
Yes	.08	.01	.02	.11	.03	.02	.08	.15	.02	.03
No	.92	.99	.98	.89	.97	.98	92	.85	.98	.97
g. Fortune										
Yes	.05	.00	.04	.03	.01	.05	.05	.05	.02	.01
No	.95	1.00	.96	.97	.99	.95	.95	.95	.98	.99

PERCENTAGE DISTRIBUTION OF STUDENT RESPONSES

QUESTION	Students of Teachers With Different Years of Experience									
	One Year		Two to Three		Four to Five		Six to Nine		Ten to Twenty	
Check which of the following you have watched or listened to during the past four weeks:	Exp. n (44)	Cont. n (21)	Exp. n (65)	Cont. n (116)	Exp. n (34)	Cont. n (91)	Exp. n (71)	Cont. n (79)	Exp. n (116)	Cont. n (254)
a. Daily news program										
Yes	.89	.81	.82	.84	.85	.91	.63	.90	.78	.77
No	.11	.19	.18	.16	.15	.09	.37	.10	.22	.23
b. "60 Minutes"										
Yes		.52		.19		.21		.29		.24
No		.48		.81		.79		.71		.76
c. First Tuesday										
Yes	.34	.24	.14	.35	.15	.24	.15	.24	.30	.24
No	.66	.76	.86	.65	.85	.76	.85	.76	.70	.76
d. Face the Nation; Meet the Press; Issues & Answers										
Yes	.23	.24	.15	.16	.15	.08	.15	.18	.09	.13
No	.77	.76	.85	.84	.85	.82	.85	.82	.91	.87
e. A program on Educational Television										
Yes	.36	.05	.17	.14	.21	.16	.13	.14	.16	.13
No	.64	.95	.83	.86	.79	.74	.87	.86	.84	.87

PERCENTAGE DISTRIBUTION OF STUDENT RESPONSES

QUESTION	All Students		Ninth Grade		Tenth Grade		Eleventh Grade		Twelfth Grade	
	Exp. n (282)	Cont. n (580)	Exp. n (103)	Cont. n (37)	Exp. n (41)	Cont. n (50)	Exp. n (69)	Cont. n (179)	Exp. n (69)	Cont. n (314)
Check which of the following you have watched or listened to during the past four weeks:										
a. Daily news program										
Yes	.76	.82	.67	.81	.83	.80	.81	.80	.78	.84
No	.24	.18	.33	.19	.17	.20	.19	.20	.22	.16
b. "50 Minutes"										
Yes	.22	.24	.17	.22	.22	.32	.32	.21	.20	.24
No	.78	.76	.83	.78	.78	.68	.68	.79	.80	.76
c. First Tuesday										
Yes	.28	.27	.29	.27	.22	.22	.26	.30	.30	.27
No	.72	.73	.71	.73	.78	.78	.74	.70	.70	.73
d. Face the Nation; Meet the Press; Issues & Answers										
Yes	.12	.14	.09	.14	.07	.18	.22	.14	.12	.13
No	.88	.86	.91	.86	.93	.82	.78	.86	.88	.87
e. A program on Educational Television										
Yes	.15	.14	.12	.32	.15	.36	.25	.13	.10	.09
No	.85	.86	.88	.78	.85	.64	.75	.87	.90	.91

PERCENTAGE DISTRIBUTION OF STUDENT RESPONSES

QUESTION	Total Social Studies		Total Business Education		Total Home Economics		Total Male		Total Female	
Check which of the following you have watched or listened to during the past four weeks:	Exp. n (105)	Cont. n (99)	Exp. n (95)	Cont. n (376)	Exp. n (82)	Cont. n (65)	Exp. n (121)	Cont. n (227)	Exp. n (161)	Cont. n (353)
a. Daily news program										
Yes	.81	.73	.66	.85	.83	.86	.77	.82	.78	.82
No	.19	.27	.34	.15	.17	.14	.23	.18	.22	.18
b. "60 Minutes"										
Yes	.23	.19	.25	.26	.21	.14	.29	.30	.19	.19
No	.77	.81	.75	.74	.79	.86	.71	.70	.81	.81
c. First Tuesday										
Yes	.27	.16	.31	.29	.24	.29	.28	.33	.27	.24
No	.73	.84	.69	.71	.76	.71	.72	.67	.73	.76
d. Face the Nation; Meet the Press; Issues & Answers										
Yes	.16	.09	.11	.14	.15	.18	.14	.16	.14	.12
No	.84	.91	.89	.86	.85	.82	.86	.84	.86	.88
e. A program on Educational Television										
Yes	.19	.08	.21	.14	.16	.28	.16	.11	.21	.16
No	.81	.92	.79	.86	.84	.72	.84	.89	.79	.84