

AN ABSTRACT OF THE THESIS OF

Antonie Remmele for the degree of Master of Science

in Family Resource Management presented on December 10, 1981

Title: The Development and Pilot Testing of a Model For Assessing

the Effectiveness of Innovative Consumer Education Programs

Abstract approved: **Redacted for Privacy**  
Virginia H. Dickinson

The purpose of this study was to develop and pilot test a model for assessing the effectiveness of an innovative self-directed video program for teacher in-service education.

Data were obtained from 51 program participants using a one-group pretest-posttest design. The preprogram assessment provided information about the personal characteristics of the participants, their entry level of knowledge in the area of consumer studies, and their attitudes and expectations concerning the innovative in-service program. The post-program assessment measured both participants' achieved level of knowledge and changes in their attitudes toward the program. Furthermore, participants evaluated the effectiveness, organization, and delivery of the program. Fifty-one participants completed the preprogram and postprogram Consumer Studies Achievement Test, and 35 participants responded to all parts of the research instrument.

The general hypothesis tested was that there would be no significant difference between pretest and posttest mean scores. Since the t-test for

correlated samples yielded a significant t-value the null hypothesis was rejected (n=51; t= 16.4).

In order to determine whether or not the program was equally effective in each of the three program content areas (consumer economics, consumer behavior, and consumer protection) the total testscores were partitioned into three partial achievement scores. By applying Scheffe's test it was determined that each partial mean score was significantly different from the others (p=.05). The highest partial mean score was for consumer economics, the lowest for consumer protection.

Participants' attitudes concerning the in-service program changed while being exposed to the program. Respondents' preprogram mean attitude score was significantly higher than their mean attitude score assessed after program participation (89.1 vs. 76.2).

Pearson Product Moment Correlation and Multiple Regression Analysis were used to investigate the relationship between student achievement and student attitude, age of respondents, number of years of teaching experience, and instructional setting. Approximately thirty percent of the variation in residual achievement gain was accounted for by the variable instructional setting. High intercorrelations between instructional setting, attitude, and age indicated that the instructional setting had an overriding effect on student achievement.

In this study, instructional setting was the primary factor in explaining differences in student achievement.

The Development and Pilot Testing of a Model  
For Assessing the Effectiveness of Innovative Consumer  
Education Programs

by

Antonie Remmele

A THESIS

submitted to

Oregon State University

in partial fulfillment of  
the requirements for the  
degree of

Master of Science

Completed December 10, 1981

Commencement June 1982

APPROVED:

**Redacted for Privacy**

~~Assistant Professor of Family Resource Management~~  
in charge of major

**Redacted for Privacy**

~~Head of Family Resource Management~~

Redacted for Privacy

~~Dean of Graduate School~~

Date thesis is presented December 10, 1981

Typed by Michele Merfeld for Antonie Remmele

## TABLE OF CONTENTS

	<u>Page</u>
Chapter One INTRODUCTION. . . . .	1
Problem Statement and Purpose of Study . . . . .	2
Objectives of the Study. . . . .	3
Research Hypotheses. . . . .	4
Limitations of the Study . . . . .	5
Assumptions. . . . .	5
Definition of Terms. . . . .	5
Chapter Two LITERATURE REVIEW . . . . .	8
Teacher In-Service Training: The Status Quo. . . . .	8
Selecting an Appropriate Instructional Medium for In-Service Programs. . . . .	13
The Development of a Framework for Evaluating Teacher In-Service Programs Taught by Television. . . . .	22
Chapter Three METHODOLOGY . . . . .	37
Research Design . . . . .	37
Research Instrument . . . . .	37
Procedure . . . . .	40
Statistical Analysis. . . . .	42
Chapter Four FINDINGS . . . . .	49
Sample Characteristics. . . . .	49
Results of the Analysis of Student Achievement. . . . .	53
Results of the Analysis of Student Attitudes. . . . .	61
Attitude Profiles Presenting Student Perception of the Subject-Matter and Medium of Instruction. . . . .	65

TABLE OF CONTENTS (Continued)

	<u>Page</u>
Results of the Analysis of the Relationship Between Student Achievement, Attitudes, and Selected Variables. . . .	75
Results of the Analysis of the Program Evaluation Questionnaire . . . . .	87
Chapter Five SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS. . . .	94
REFERENCES . . . . .	102
APPENDIX. . . . .	105

## LIST OF FIGURES

<u>Figure</u>	<u>Page</u>
1. Classes of instructional variables and the major relationships among them. . . . .	24
2. Model for evaluating outcomes of innovative teacher in-service programs from student perspective. . . . .	31
3. Pretest Mean Profile, Posttest Mean Profile, and Modal Profile for Concept I . . . . .	67
4. Pretest Mean Profile, Posttest Mean Profile, and Modal Profile for Concept II. . . . .	69
5. Pretest Mean Profile, Posttest Mean Profile, and Modal Profile for Concept III . . . . .	70
6. Pretest Mean Profile, Posttest Mean Profile, and Modal Profile for Concept IV. . . . .	72
7. Revised systems model for evaluating outcomes of innovative teacher in-service programs from a student perspective . . . . .	101

## LIST OF TABLES

<u>Table</u>	<u>Page</u>
1. Age of Respondents . . . . .	50
2. Major and/or Minor Endorsement . . . . .	52
3. Partial Mean Achievement Scores for Consumer Economics, Consumer Behavior, and Consumer Protection (Post-Assessment). . . . .	55
4. Comparisons of Pairs of Partial Mean Achievement Scores for Consumer Economics, Consumer Behavior and Consumer Protection Using Scheffé's Test. . . . .	56
5. Part-Whole Correlation Coefficients ( $r_{pq}$ ) for Section Scores with Total Achievement Scores . . . . .	57
6. Comparisons of Pairs of Correlation Coefficients Using a t-test for Correlated Samples. . . . .	58
7. Partial Pretest Achievement Mean Scores, Partial Posttest Achievement Mean Scores, Partial Achievement Mean Gain Scores and Their Standard Deviations . . . . .	59
8. Comparison of Pairs of Partial Achievement Mean Gain Scores for Consumer Economics, Consumer Behavior, and Consumer Protection Using Scheffé-Test . . . . .	60
9. Pretest and Posttest Total Mean Attitude Scores, Partial Mean Attitude Scores, Mean Difference and t-value for Mean Difference. . . . .	64
10. Part-Whole Correlation Coefficients ( $r_{pq}$ ) for Partscores and Overall Attitude Scores. . . . .	65
11. Summary Table for Correlation Coefficients and Coefficients of Multiple Determination Between Pairs of the Variables Residual Achievement Gain and Age, Teaching Experience, Instructional Setting, and Posttest Attitude . . . . .	79
12. Regression Model I: Residual Achievement Gain and Instructional Setting. . . . .	79
13. Regression Model II: Residual Achievement Gain, Instructional Setting and Posttest Attitude. . . . .	80



LIST OF TABLES (Continued)

<u>Table</u>	<u>Page</u>
14. Regression Model III: Residual Achievement Gain, Instructional Setting, Posttest Attitude, and Age. . . .	81
15. Regression Model IIa: Residual Achievement Gain, Instructional Setting, and Attitude Toward Consumer Studies. . . . .	83
16. Regression Model IIb: Residual Achievement Gain, Instructional Setting, and Attitude Toward Instructional Television . . . . .	84
17. Regression Model IIc: Residual Achievement Gain, Instructional Setting, and Perceived Program Efficiency. . . . .	85
18. Overall Course Organization. . . . .	87
19. Perceived Effectiveness of the Consumer Studies Program in Teaching Concepts in Consumer Economics . . . . .	88
20. Perceived Effectiveness of the Consumer Studies Program in Teaching Concepts in Consumer Behavior. . . . .	89
21. Perceived Effectiveness of the Consumer Studies Program in Teaching Concepts in Consumer Protection. . . . .	90
22. Evaluation of Clarity of TV Presentations. . . . .	91
23. Stimulation of Interest. . . . .	92
24. Evaluation of the Overall Effectiveness of ITV Used as a Teaching Technique in the Consumer Studies Program . . . . .	92

The Development and Pilot Testing of a Model  
For Assessing the Effectiveness of Innovative Consumer  
Education Programs

CHAPTER ONE

INTRODUCTION

In the State of Oregon Basic Teaching Certificate Requirements include preparation in the study of consumer education/economics/personal finance as part of the general studies curriculum.<sup>1</sup> This basic requirement is applicable to all prospective teachers in Oregon and includes out-of-state teachers entering Oregon after January 1, 1981. According to estimations, based on a one month sampling conducted by the Teacher Standards and Practices Commission (TSPC), there are between 900 and 1,000 teachers in immediate need of a course in the required subject-matter.

To help teachers meet this requirement the TSPC, in cooperation with teachers, suggested that an in-service course in consumer education be developed. In response to this suggestion, a video program "Consumer Studies" was formulated and produced cooperatively by Dr. George Wyatt (Western Oregon State College; program director), Dr. Virginia Dickinson (Oregon State University), Mr. Jack Taylor (Portland State University), and Mrs. Marion Kienzle (Oregon Department of Education). The program was partially funded by the Consumer Education Resource Network (CERN).

---

<sup>1</sup>Oregon Administrative Rules, Chapter 584, Teacher Standards and Practices Commission, Salem, Oregon. January 1980.

The video program included ten 50 minute modules, three addressing consumer economics, four featuring consumer behavior, and three highlighting consumer protection. A study guide (including course outline, course objectives, a list of required and supplementary readings, and a set of participant activities) was created to accompany the video modules. The program, Consumer Studies, was designed as a self-contained, individualized, one-credit college level course. It was pilot tested as a teacher in-service program in five locations throughout Oregon between May and July 1981.

Since Oregon has no specific teacher certification endorsement in consumer education/personal finance, but requires all High School graduates to have completed a class in this subject-matter area, any certified teacher may be recruited to teach such a course. Consequently, the newly developed program may be beneficial to those teachers without any previous formal education in consumer studies who are recruited to teach a course in this subject-matter area.

#### Problem Statement and Purpose of Study

The development of a video program in consumer studies was an attempt to provide Oregon teachers with an alternative method of meeting specific certification requirements. The project had three objectives: 1) to upgrade the level of teacher knowledge in the area of consumer education; 2) to assess the appropriateness of television as an instructional medium for in-service teacher training; 3) to establish a positive base of experience for continued cooperation in consumer education among Oregon institutions of higher education. In order to determine whether or not these project objectives were met,

a program evaluation instrument specifically designed for innovative in-service programs was needed. Yet, no theoretical framework was available that identified the characteristics and components of alternative teacher education programs, and which could be used to develop an evaluation instrument. The problem was, then, to develop a model that presented the input, instructional process, and outcomes of innovative teacher training programs, and posited the interaction among these elements. Using this model, an evaluation instrument was developed and pilot tested for its appropriateness and usefulness in assessing and interpreting outcomes of innovative teacher in-service programs.

#### Objectives of the Study

In order to develop a program evaluation model it is necessary to 1) identify instructional design and components of the program, including context variables, instructional process variables, and outcome variables; and 2) indicate the interrelationships among these variables.

In order to test the model and assess the program effectiveness, program efficiency, and program appeal, it is necessary 1) to assess students' knowledge in the identified areas of consumer studies prior to and after participation in the program, in order to draw conclusions about the program effectiveness; 2) to survey student perception of the effort required to complete the course requirements in order to draw conclusions about the program efficiency; 3) to survey student attitudes toward the subject-matter (consumer studies), and the

instructional medium (television) in order to draw conclusions about the program appeal; 4) to explore the interrelationships among student characteristics, student attitude, and instructional setting; and 5) to examine the relationships between student achievement and student characteristics, student attitude, and instructional setting.

### Research Hypotheses

The overall research hypothesis concerning the learning effectiveness of the consumer studies program was stated in the null form:

There will be no significant difference between pretest and posttest mean scores on the Consumer Studies Achievement Test.

Since this study was an exploratory study no hypotheses were developed concerning participant attitudes toward the educational program or concerning the relationship between student achievement, attitudes, and selected variables.

Emphasis was put on the assessment of participant attitudes and the exploration and discussion of interrelationships among instructional components, rather than on testing the existence of, or lack of, such interrelations.

### Limitations of the Study

The present study was limited by the following conditions:

- 1) The subjects were self selected.
- 2) The researcher could not personally administer the test instruments, since the program was pilot tested at five locations throughout Oregon.
- 3) The researcher had no control over instructional sites and conditions.
- 4) The researcher had no influence on course format and procedures.

### Assumptions

It is assumed that the subjects responded to all parts of the research instrument honestly and according to their best knowledge.

It is assumed that the experimental conditions for all groups provided an appropriate basis for the testing of the program and warrant a uniform and reliable analysis.

### Definition of Terms

Consumer Studies - is an educational program in consumer economics, consumer behavior, and consumer protection designed for in-service teachers in Oregon.

Instructional television - is an electronic video and audio transmission whose function it is to present a specific body of subject matter to students at home or in school, when this subject matter is part of a formal course of study (Saettler, 1968, p. 243).

Attitudes - are predispositions of individuals to react in some degree either positively or negatively toward some psychological object.

Attitudes are seen as a function of 1) the strength of each of several beliefs a person holds toward an object and 2) the value or importance the person gives each belief as it relates to the object.

Program effectiveness - refers to the degree to which students accomplish the unit or course objectives (achievement of knowledge and/or skills).

Program efficiency - refers to the student effort required to complete the unit or course objectives. In this study, program efficiency is assessed as the participants' perception of the time cost, money cost, and (in)convenience involved in satisfying a credential requirement.

Program appeal - refers to the appreciation of the educational program and is closely related to the positive and negative student attitude toward the subject-matter and the instructional medium employed.

Program success - in this study is defined as having three aspects: 1) program effectiveness, 2) student perception of the program efficiency, and 3) program appeal. All aspects of program success are assessed from the learner's perspective.

Teaching certificate - a teaching, personnel service, or administrative license issued under the Rules for Certification in accordance with ORS 342.125.

Rules for certification - Teacher Standards and Practices Commission rules for certification of teachers, personnel service specialists, and administrators found in OAR (Oregon Administrative Rules), Chapter 584, Division 36 through 52. Rules have the force of law.

Teacher in-service education - refers to learning that takes place after formal, undergraduate teacher preparation has been completed (Luke, 1980). In-service education is seen as complementing professional growth beyond the baccalaureate (Cruickshank/Lorish/Thompson, 1979).

Instructional setting - refers to the four different locations for each of the pilot groups as selected by local coordinators. No standardization of setting is implied.



## CHAPTER TWO

## LITERATURE REVIEW

Teacher In-Service Training: The Status Quo

The new challenges in in-service education are analogous to those faced during America's Industrial Revolution. (Pankratz 1979, p. 20)

"In-service training refers to learning that takes place after formal, undergraduate teacher preparation has been completed (Luke 1980, p. 9). In-service education, rather than eradicating deficits, is seen as complementing and extending professional growth beyond the baccalaureate (Cruickshank/Lorish/Thompson 1979). It is that part of teacher education that serves the largest number of educators and holds the most potential for impact on the quality of current school programs (Ryor 1979). A great many teachers express dissatisfaction with the quantity and quality of in-service education available to them (Luke 1980). "Teachers perceive school district in-service programs as irrelevant, ill-planned, inadequate, poorly organized, or a combination of these negative traits" (Orlich 1979, p. 53). Sources of that perception are multiple. Teachers have been too little involved in the assessment of needs, planning, and designing of training programs. Oftentimes, in-service education is merely added to their already crowded schedules. "The rather general antagonistic attitude of teachers and administrators toward in-service activities tends to be caused by one-shot in-service efforts, crash programs conducted without follow-up and lack of systematic conduct of 'needs' surveys" (Orlich 1979, p. 53). There seems to be no doubt that all teachers

need in-service education in a society with increasing social problems and a rapid transition of values. Furthermore, it is estimated that the body of information in the possession of man doubles every seven years. Teacher education is learning on a career-long basis for personal professional development.

If in-service education is to respond to the new challenges several traditional notions have to be reconsidered. Teachers have to be given a dominant voice in the development and administration of in-service programs. Training programs in which teachers participated as helpers and planners of in-service activities tended to be more frequently successful than programs planned and conducted without teachers' assistance (Nichols 1976). Furthermore, in-service training is to be designed as a continuous learning experience for teachers. Research findings indicate that teachers were more likely to benefit from in-service programs that were part of a long-term systematic staff development plan than they were from 'single-shot' short-term programs (Nichols 1976).

In-service should occur at the most logical place, usually the teacher's instructional site, in a neutral and nonthreatening atmosphere. Such places may include a learning center, a university classroom, the teachers' room or even the living room (Shanker 1979).

Public financial support for in-service education is essential and justified since the public is consumer and benefactor of education (Ryor 1979, Luke 1980). However, in-service education will not get much budgetary attention in this period of fiscal conservatism (Shanker 1979, p. 13). Therefore, effective and cost efficient teacher

in-service programs need to be developed.

Most frequently, in-service education is considered in the context of a group activity. However, when reviewing the options available for making in-service as viable as possible, an individualized approach should not be overlooked. Nichols, et. al. (1976) reviewed approximately 2,000 books, periodicals, and unpublished papers written on in-service education after 1957. They found that such programs were seldomly used in in-service education. However, all programs in which teachers engaged in self-instruction by using prepared materials, objectives, and planned guidance were successful. The NEA-project (1980) in which approximately 600 in-service programs in twelve states were analyzed over a three year period ending 1979, reports that only one of the states provided an individualized approach to teacher in-service education. Again, those programs were found to be successful.

A few other studies investigated the applicability of an individualized approach to teacher in-service education (Arena 1974, Olson 1974, Chu/Schramm 1967). Arena (1974) introduced a general procedure for individualized in-service training which was successfully employed in an environmental education program.

In order to evaluate an individualized approach to in-service education, the potential and limitations of individualized learning for teacher training needs to be discussed.

### Individualized Approach to Teacher In-Service: Its Potential

Individualized learning<sup>1</sup> refers to instructional design where a

---

<sup>1</sup>Individualized learning patterns are also called by such labels as self-instruction, independent study, individually prescribed instruction, and self-directed or self-paced learning.

separate set of learning experiences is developed for each objective, specifically designed for each student, and tailored to his or her individual characteristic needs (Kemp 1977). However, truly individualized programs are hardly economically feasible. Therefore, it is common to design a 'single track' instructional package for all students. The package includes supplementary instructional materials such as worksheets, study guides, etc. which require the student to respond to or act on the material.

The most outstanding feature of individualized instruction which makes it especially suitable for the adult learner, is the option for independent, self-responsible, and self-paced study.

Clients of in-service education programs are adults, professionally accredited and experienced. Their individual needs and learning styles may be best responded to by independent study. Considering the usually very diverse backgrounds, interests, and abilities of participants in in-service programs self-directed and self-paced instruction allows most students to attain many of the same competencies.

With the crush of commitments pressing in on every teacher every day, the opportunity to tailormake learning to one's own schedule may be the greatest advantage of all (Luke 1980, p. 58).

Individualized or self-instructional programs, once developed, can be used over and over again. Since such programs are usually based on a 'non-human' instructional medium, they can be easily duplicated. Both variety and user flexibility are provided to a great extent. Of special concern to educational administrators are the development costs of innovative in-service programs. However, a long-term cost comparison between self-instructional programs and conventional instruction may

tip the budget scale in favor of the individualized self-instruction.

### Limitations of Individualized Instruction

Self-instructional learning systems are oftentimes highly criticized by experts in the field for their weakness in the affective domain of learning. Bloom (1959) identified two domains of learning, a cognitive domain and an affective domain. Cognitive objectives are geared toward the acquisition of knowledge while objectives in the affective domain are concerned with attitudes, appreciations, values and emotions.

Truly individualized learning reduces the opportunity to learn from other students. The sharing of experiences, the generating of new insights that arise out of intellectual interaction with a studious colleague, will be missed (Luke 1980). The most serious shortcoming of individualized instruction is the lack of personal interaction between the instructor and the student; the lack of instructor reinforcement, and mutual student reinforcement. Thiagarajan (1978) contends:

Because the learner misses the instructor, she or he is likely to miss the confidence, clarification, comfort, and commitment of a conventional classroom setting. Because the learner misses the peers, she or he is likely to miss the companionship, comparison, collaboration, and competition of a conventional classroom (p. 22).

There are possibilities and notable attempts in individualized educational programs to provide a support system for program participants. Student tutorials, study groups, telephone lines or even meetings with program coordinators or developers are existing ways to personalize "depersonalized" instruction.

### Selecting an Appropriate Instructional Medium for In-Service Programs

Of concern to the designer of individualized instruction - as to any other instruction - is the selection of the appropriate instructional medium. Particularly in the design of self-instructional programs, where some technical medium replaces the instructor, the delivery strategies must be well considered.

There are no clear-cut guidelines for selecting an appropriate instructional medium per se. However, research on learning indicates that the amount of information retained by learners differs, depending upon the instructional medium used. Long-term retention was found to be roughly three times higher when the information is presented in a multi-media design as compared to an audio or video design only. Multi-sensory instructional strategies have long been advocated by learning theorists.<sup>1</sup> Among these strategies the use of television as an instructional tool gained most popularity. To no other instructional medium has been devoted so much attention and research by educators and instructional designers (Saettler 1968). Since the advent of television about thirty years ago hundreds of studies examined the effectiveness of televised instruction as well as the attitudes of students, teachers, and administrators toward this particular medium.

#### Instructional Television as a Medium for Teacher In-Service Training

Instructional television has been described as an electronic video and audio transmission primarily designed to teach a specific body of

---

<sup>1</sup>For a brief overview, see Saettler (1968).

subject matter as part of a formal course of study to particular groups of students, in school or at home (Root 1972; Saettler 1968). It referred to open or closed-circuit video programs. Since its initial boom during the decade 1955-65 instructional television has been further developed. Cable-TV, video-tape/cassette and the video disc are well-known means of distribution used for educational purposes. Cable-TV and video disc have great implications for education since they allow interactive response when coupled with a central computer. Cable-TV is not yet developed to its full potential (access to it is too sporadic) and the video disc is still expensive.<sup>1</sup> "Therefore, video tapes/cassettes will still be the medium of choice in many circumstances" (Young 1980, p. 9).

Features of Instructional Television. Television instruction has unique characteristics which make it superior to other instructional media. The features of video tape/cassette systems will be highlighted briefly. Video tape/cassette systems are highly flexible in use, allow easy handling, and produce a relatively high recording quality. Due to the rapid development in the area of instructional technology, such systems are becoming more and more refined. It is projected for the next few years that video cassette recorders will shrink to the size of today's audiocassette recorders, using one quarter-inch tapes (Instructional Innovator 1981, p. 10). At the same time, video tape/cassette systems are becoming more and more inexpensive, thus most schools and even private individuals can afford them.

---

<sup>1</sup>For more detailed cost estimates see Instructional Innovator, February, 1981, p. 10.

Video production, like television production, benefits from a wide variety of technical options: close-ups, magnification, slow motion, "supers," and many more. Slides, graphics, film strips and other visual aids can be easily built into presentations.

Televised instruction can also use to advantage in many different teaching techniques: lecture and lecture discussion; interview; demonstration; experiments, etc. Besides the technological potential, ITV's most outstanding advantage is the ability to simulate face-to-face instruction. Television is the only technical instructional medium that is able to offer a "quasi-social" interaction. Additionally, televised instruction allows individualized, self-paced learning as well as group learning. Video programs can be disseminated to very small and very large audiences.

To summarize, instructional television is a highly flexible medium of instruction with the advantage of making use of many technical options to make instruction more interesting, lively, and effective. At the same time it offers an individualized approach to learning and allows group learning. Above all, it simulates a learner-instructor relationship and thus personalizes 'depersonalized' instruction.

Effectiveness of Instructional Television. Chu and Schramm (1967)

reviewed several hundred studies on various aspects of instructional television. They state:

The effectiveness of television has now been demonstrated in well over 100 experiments, and several hundred separate comparisons, performed in many parts of the world, in developing as well as industrialized countries, at every level from preschool through adult education, and with a great variety of subject matter and method (p. 1).



In their research summary Chu and Schramm (1967) were concerned about favorable and unfavorable conditions for learning from television. They found that "television is more likely to be an efficient tool of learning if it is planned and organized well" (p. 19). There is evidence that TV is not essentially subject-bound; any subject matter where one-way communication will contribute to learning can be taught efficiently by television (p. 10). Furthermore, there are no grounds for the assumption that some academic subjects per se might be disliked as material for ITV and thus impair learning (p. 67). Although the research findings are oftentimes contradictory (Westly/Jacobson 1965, p. 47), there seems to be enough evidence that, given favorable conditions, television is an effective as well as efficient instructional tool.

#### Student Attitudes Toward Instructional Television

The evaluation of the effectiveness of a particular use of the medium television for instructional purposes usually includes some effort to measure its impact on the attitudes of the students. Much attention is given to the measurement of attitudes in behavioral research. Fishbein (1967) defined attitude as a mental and neural state of readiness, organized through experience, exerting a directive or dynamic influence upon the individual's response to all objects and situations with which it is related (p. 8). Thurstone (1965) gives an operational definition of attitudes: "The concept 'attitude' is used to denote the sum total of a man's inclinations and feelings, prejudices and biases, preconceived notions, ideas, fears, threats, and convictions about a specific topic" (p. 77).

Sherif (1965) further clarifies the term:

An attitude cannot be observed directly. It denotes a variable within an individual that affects his behavior in a pertinent situation, together with other motives operative at the time and the properties of the situation itself (p. 19).

A vast amount of research has been conducted to assess attitudes and measure attitude change (Fishbein 1967, Sherif 1965). However, the results of that research are very controversial (Simonson 1974).

Chu and Schramm (1967) extensively reviewed the literature on student attitude toward instructional television. They conclude:

Among the factors that determine students' attitudes toward instructional television are:

- 1) how much contact they think they will have with a teacher,
- 2) how they compare the relative abilities of the studio and classroom teacher,
- 3) whether they find instructional television boring or interesting,
- 4) the nature of the televised program they have seen,
- 5) the conditions of viewing (p. 69).

Becker (1963) assessed the attitudes of college students who had not yet been enrolled in a course taught by television; thus, their attitudes were based on anticipation, rather than experience. He found two clusters of attitudes, one centering around their anticipation of how useful ITV was likely to be, and whether it does or does not maintain high intellectual standards; and a second, that he called "warmth," centering around their anticipation of whether television teaching was likely to be 'friendly' and 'pleasant,' or 'cold' and 'mechanized.'

Two studies explored students' likes and dislikes for instructional

television. Andrews (1960) reported that students disliked the absence of personal contact between the studio teacher and colleague students, and the fact that they were unable to interrupt the television presentation to ask questions. These results fit with attitudinal surveys made by International Research Associates among Chicago students in 1967: 42% of the students disliked the fact that they could not ask questions; 35% missed the personal contact with the teacher, and 22% the classroom discussions. A relatively low proportion of the respondents (8%) missed the personal contact with fellow students, informal discussions, and somebody to talk with about the course. About one-fifth (20%) of the students found TV boring, monotonous, and difficult to pay attention to (Chu/Schramm 1967).

Of note is the finding that the opportunity to ask questions is not valued equally by all students: 19% liked that the teacher was not interrupted by questions, thus eliminating distractions. The most frequent favorable responses of the Chicago students appeared to relate to quality and convenience of instructional television. Almost thirty percent of the respondents regarded the television teacher as being better prepared and organized as compared to classroom teachers. An equal proportion appreciated the convenience of not having to travel to school; and 10% mentioned the opportunity to attend a class in informal atmosphere. The flexibility of the time-schedule and the opportunity to view lessons twice was perceived positively by twelve and sixteen percent of all respondents.

The research findings indicate that a student's attitude toward teaching by television seems to relate closely to 1) how frustrated he

or she is at having to wait until the end of the broadcast to ask questions (if at all possible); 2) how he or she perceives the alternative to being taught by television; and 3) his or her feelings about the learning conditions (Chu/Schramm 1967, p. 72).

### Attitude and Achievement

Research findings seem to indicate that there is a positive link between the two variables: attitude and achievement. In order to relate students' achievement to their attitude toward a particular instructional program, two important attitudinal components need to be considered:

- 1) student's attitudes toward the subject-matter, and
- 2) student's attitudes toward the instructional medium used for program delivery.

Several studies identified student's attitude toward the subject-matter as an indicator of student achievement (Simonson 1974). Students who possessed favorable attitudes toward the content of an instructional activity on the first day of classes, have been shown to achieve significantly better grades than students with poorer attitudes.

Simonson (1974) found that achievement gains tended to be higher for students whose course-related attitudes had changed from a negative to a more positive position. However, the impact of attitude change could not be completely explained in this study.

The results of research investigating the relationship between student achievement and attitude toward the instructional medium are controversial. Chu and Schramm (1967) who have summarized a large number of studies investigating the effectiveness of instructional

television state:

It would seem that liking would usually go along with learning in the use of instructional television, and this relationship may in general hold. However, the few correlational studies that are available, raise doubts (p. 67).

Whiting (1961) compared the grades obtained by students with their expressed attitudes toward television instruction. He found that students who were relatively neutral toward instructional television scored higher on the achievement test than those who favored television. However, the latter had earned better grades than those students who had expressed a dislike for the instructional medium, suggesting a curvilinear relationship between attitudes toward the medium and the rate of learning that took place.

Root (1972) examined the relationship between college students' perception of instructional television and their grades received in a class taught by television. He found no statistically significant relationship between a positive perception of the instructional medium employed and the students' achievement.

From these findings it may be concluded that effective learning does not necessarily require favorable student attitudes toward course content and/or instructional medium. Attitudes may reflect one among many aspects of the teaching-learning process.

To summarize, there is evidence supported by research findings that instructional television can be an effective as well as an efficient instructional tool. Televised instruction linked with individualized learning patterns offers high user flexibility in terms of time-scheduling learning. Self-paced study allows most students to attain

many of the same competencies. For teacher in-service participants individualized television instruction would take care of the burden of attending weekend workshops or night classes away from their instructional site. Video programs may be a valuable approach to teacher in-service education.

The Development of a Framework for Evaluating Teacher  
In-Service Programs Taught by Television

Evaluation is the means whereby we systematically collect and analyze information about the results of a student's encounter with a learning experience (Rowntree, 1974). The primary purpose of evaluating an educational or training program is to obtain and provide information about the transactions within a program (process evaluation) as well as about educational materials so that decisions about revision, disposition, and use can be made (product evaluation) (Stufflebeam 1971, Encyclopedia of Educational Evaluation 1975).

Scriven (1967) identified two types of evaluation, formative evaluation and summative evaluation. Formative evaluation involves the use of empirical techniques to collect information about instructional process components as instruction occurs. Formative evaluation of pre-packaged instruction occurs during the production process. This information provides the basis for making decisions concerning which components of the training materials are to be modified in order to make the materials instructionally and motivationally stronger. Formative evaluation is an 'iterative process of test-modify-retest-modify cycles' (Kandaswamy 1980). In summative evaluation conclusions about the effectiveness of the instructional package are made by testing the completed package. Its purpose is to provide data for policy decisions about the adoption or discontinuation of the use of an instructional package. Summative evaluation is usually undertaken by an outsider, by the program developer or a member of the development team. The differences between both types of evaluation are more 'surface differ-

ences' since the same techniques can and should be employed in the evaluative process irrespective whether the data are to be used in a formative or summative setting (Kandaswamy 1980). Scriven (1972) contends that a good formative evaluation should simulate a summative one, the major difference between the two being the use made of the evaluative data.

Evaluation procedures can be goal-based or goal-free. In goal-based evaluation the evaluator prepares criterion-based designs, based on formerly stated instructional objectives, and measures the attainment of the same objectives. The intention of goal-free evaluation is not to measure the output of major instructional development projects in terms of their actual measured effects (Scriven 1972). Rather, goal-free evaluation permits equal attention to anticipated and unanticipated effects of all possible outcomes (Kandaswamy 1980). For the evaluation of innovative educational programs it seems, therefore, more appropriate to follow a goal-free procedure in order to include unanticipated program outcomes in the evaluation process.

#### Identifying Instructional Components

The goal of evaluating instructional outcomes is to draw conclusions about the effectiveness of the instructional package. In order to do so, all components of the instructional system, as well as the relationships among them, need to be identified. The broadest, most comprehensive classification scheme was given by Reigeluth and Merrill (1979). The authors propose a framework that identifies three categories of instructional variables: 1) conditions, 2) methods, and 3) outcomes. Each category of instructional variables is again



subdivided into classes of variables as shown in Figure 1.

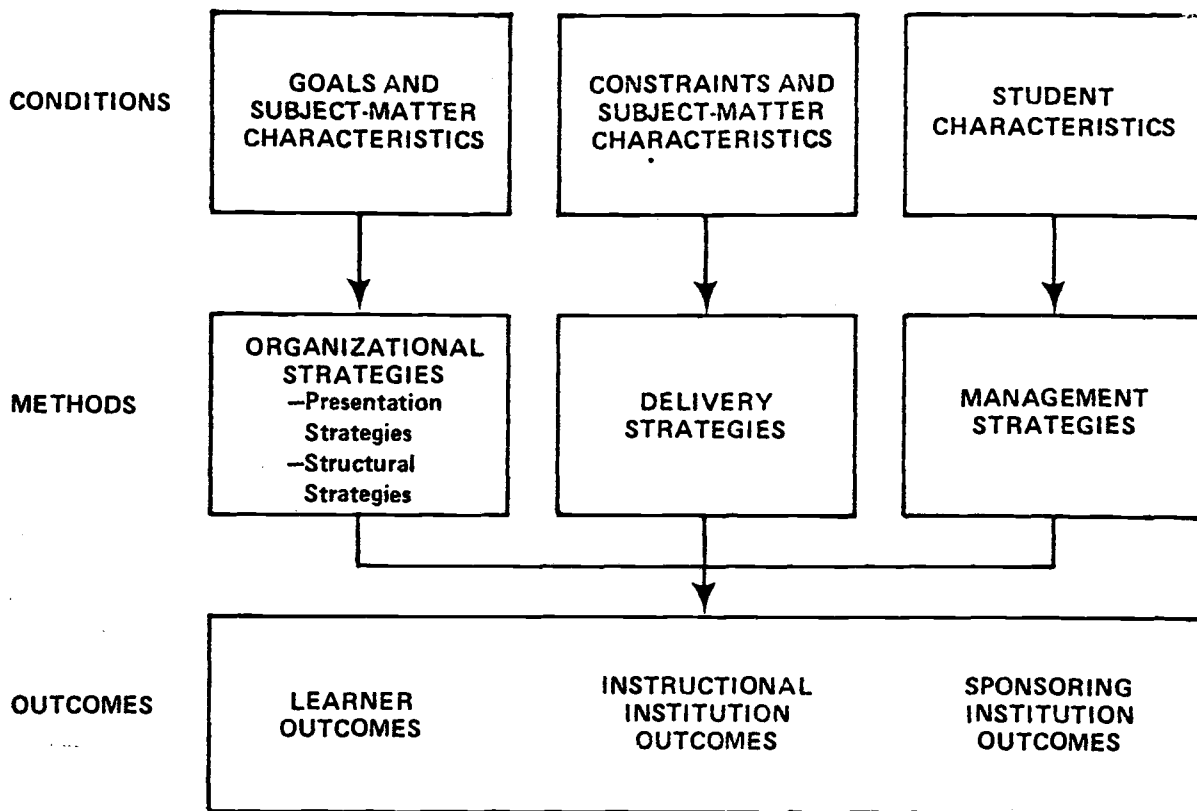


Figure 1. Classes of instructional variables and the major relationships among them (Reigeluth/Merrill 1979, p. 20).

Conditions are defined by Reigeluth and Merrill (1979) as variables that both (a) cannot be manipulated by the instructional designer or educator, and (b) interact with methods. Condition variables, including instructional goals, subject-matter characteristics, constraints, and student characteristics, influence the use of instructional methods.

Methods include all the different ways to achieve different outcomes under different conditions. There are three classes of method variables: organizational strategies, delivery strategies, and management strategies.

Instructional outcomes include all the various effects, anticipated or unanticipated, that provide a measure of the value of alternative methods of instruction under different conditions. Instructional outcomes include three classes of variables: learner outcomes, instructional institution outcomes, and sponsoring institution outcomes.

Learner outcomes are defined as having three components: program effectiveness, program efficiency, and program appeal to the learner. Program effectiveness refers to the degree to which students accomplish the unit or course objectives (achievement of knowledge or skills). The effort, often measured in time, required to achieve unit or course objectives is a measure of efficiency (Kemp 1978, p. 43). The appeal of the instruction (positive or negative attitudes) can be closely related to the liking/disliking of the subject-matter and the instructional design, including instructional methods and medium employed.

Instructional institution outcomes are fourfold, including learner outcomes, monetary costs, management demands, and appeal to the personnel.

Sponsoring institution outcomes include learner outcomes, monetary costs, and appeal of the attained objectives to the institution itself. As the model indicates, Reigeluth and Merrill (1979) hypothesize that instructional goals and the subject-matter characteristics have the majority of the influence on the selection (and

outcomes) of organizational strategies; constraints and subject-matter variables mainly influence delivery strategies; and student characteristics have the majority of the influence on the selection of management strategies. Furthermore, the model indicates that learner outcomes are the core of instruction. Effectiveness and appeal are the two important measures by which the learner evaluates the educational experience, and hence, the instructional institution. The instructional institution, in turn, is evaluated to a great extent by the sponsoring institution in terms of learner outcomes. Since it is the learner outcomes which are the major, if not the sole, purpose for the program developing and sponsoring.

Reigeluth and Merrill's model (1979) is a strictly logical, comprehensive analysis of instruction. It offers a valuable framework for the evaluation of instruction. The model is a very general classification scheme. It identifies components important to any instructional process and shows the major relationships among these components. Particularly during that part of the evaluation process when decisions about program improvements are made, these decisions are based on hypotheses concerning the relationships among instructional variables.

#### Instructional Components of Teacher In-Service Education

A different approach to instructional evaluation was undertaken by Cruickshank, Lorish, and Thompson (1979). The authors proposed a model explicitly concerned with the evaluation of teacher in-service programs. The model identifies four classes of variables: 1) presage variables, 2) context variables, 3) process variables, and 4) product

variables.

1) Presage variables represent the characteristics of the in-service program leaders ("influence agents"). These characteristics would include personality traits, institutional job affiliation, job level, prior in-service training experience and success, intelligence, and teaching skills.

2) The context variables represent the conditions to which the program leaders and participating teachers must adjust. They include three subclasses:

- a) characteristics of teacher participants, e.g., age, sex, years of teaching experience, abilities, knowledge, and attitudes
- b) school and community setting, e.g., social and political climate, program development process, school size, geographic location
- c) instructional context, e.g., socio-emotional climate of the learning group, type and availability of resources, size of instructional program, and parties responsible for the program development

3) Process variables refer to the actual instructional activities in which the participants or recipients of in-service education engage, including type of activity (lecture/discussion, demonstrations, etc.) and the instructional behavior in which all participants take part.

4) Product variables refer to the short- and long-term effects of presage, context and/or process variables upon knowledge, performance skills, and attitudes of the in-service teacher participants.

The model's underlying basic hypothesis was that presage and context variables directly affect the process variables which, in turn, affect the product variables.

Cruickshank, Lorish, and Thompson's model seems especially useful for evaluating teacher in-service programs in that it identifies and specifies the conditions (context variables) to which program leaders and participants of in-service education must adjust. The context in which in-service education takes place and the conditions to which both program developers and learner have to adjust determines to a great extent the educational outcomes. And, in turn, as Cruickshank, Lorish, and Thompson (1979) point out, the product of education has short-term and long-term effects upon the context and conditions of in-service education, and, most important of all, upon knowlege and attitudes of the in-service teacher participants.

Reigeluth and Merrill's general classification scheme of instructional variables and Cruickshank, Lorish, and Thompson's model of teacher in-service education components provided a framework for the development of a model for evaluating innovative teacher in-service programs. The model would need to be specifically designed for individualized teacher in-service programs using television as medium of instruction. The model would approach program evaluation from the learner's perspective and include instructional components that, intentionally or unintentionally, affect the educational process, and hence, have impact on learner outcomes. Finally, the model would identify the interrelationships among the instructional components of innovative teacher in-service programs and could serve later as

theoretical foundation for developing an evaluation instrument.

### A Model for Evaluating Outcomes of Teacher In-Service Training by Television

The instructional variables identified by Reigeluth/Merrill (1979) and Cruickshank/Lorish/Thompson (1979) can be combined to build a model for evaluating outcomes of televised teacher in-service programs. However, only those variables will be included in the model which are direct elements of the instructional process. Context variables, such as the socio-political context of teacher in-service training, general availability of material and human resources for program development etc., will not be included in the model since this would exceed the scope of this study.

As basic design for an evaluation model, a systems' design would be appropriate. Banathy (1968) points out that a system's approach to instructional evaluation may be appropriate since the components of any instructional process are interrelated and interacting elements within a given context. Banathy (1968) defines systems in general as "deliberately designed synthetic organisms comprised of interrelated and interacting components which are employed to function in an integrated fashion to attain predetermined purposes" (p. 213).

The proposed systems model for evaluating outcomes of televised teacher in-service programs is shown in Figure 2 (p. 31).

The model includes three categories of variables: 1) input variables, 2) process variables, and 3) outcome variables.

Instructional input variables include three classes of variables: 1) student characteristics, 2) the instructional program and the 3) physical learning conditions.

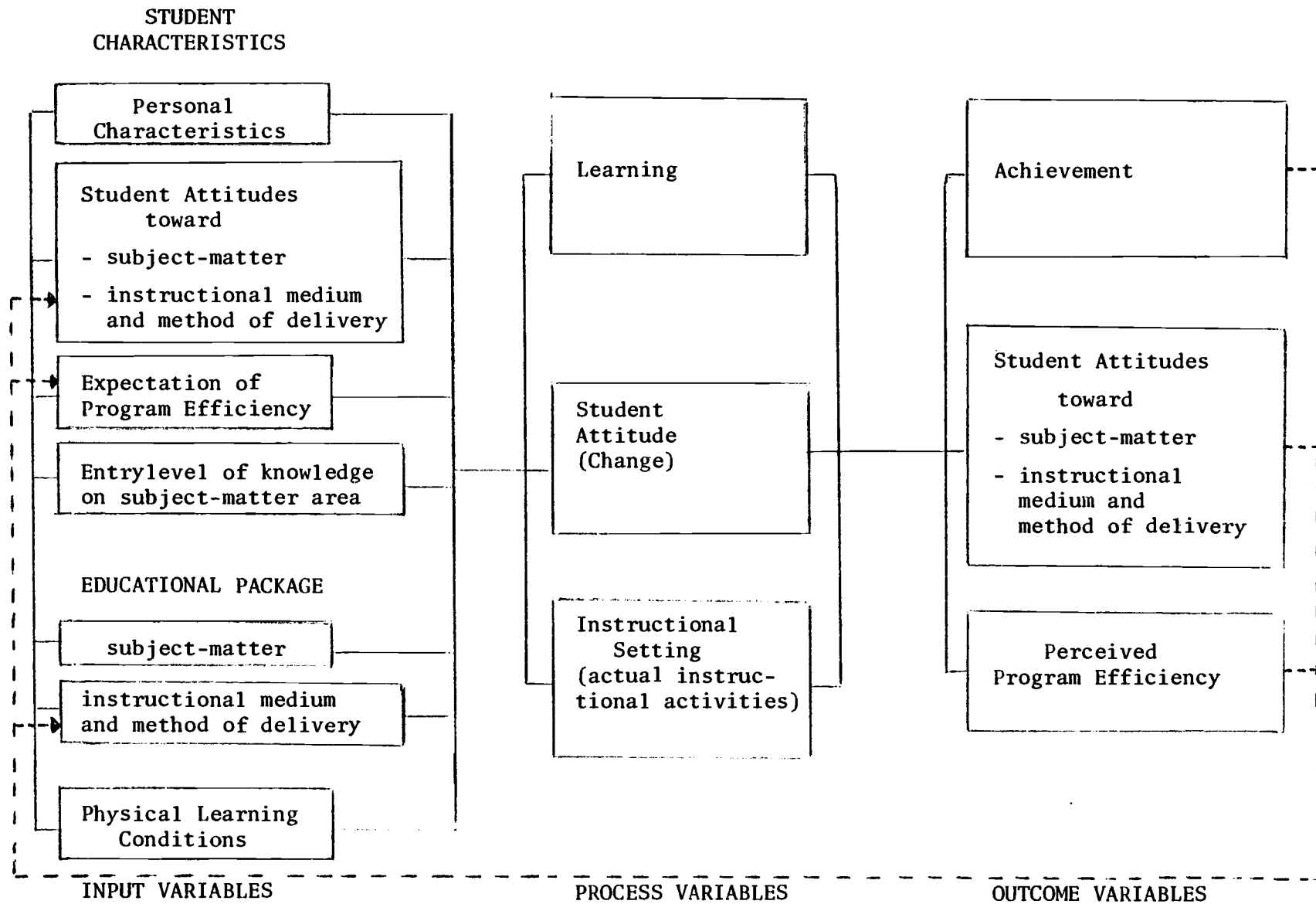


Figure 2. Model for evaluating outcomes of innovative teacher in-service programs from student perspective.



Student characteristics include:

- (a) personal characteristics, such as age, sex, years of teaching experience, grade level of teaching, major/minor endorsement, reason for program participation, etc.
- (b) entry-level of knowledge in the subject-matter area, and
- (c) student preprogram attitudes toward the subject-matter and instructional method of delivery.

The educational package includes three aspects:

- (a) the instructional medium,
- (b) instructional methods, and
- (c) the subject-matter.

In self-instructional programs, the instructional medium is selected and the method of delivery determined during the production process. The instructional package therefore, is to be considered an input variable for the instructional process. Organizational, managerial, and delivery strategies determine the educational product (program) to a great extent. The product quality will be influenced by such factors as:

- the previous experience and success of the development-team in teacher in-service training.

- the expertise of the studio teacher(s) in the subject-matter area as well as his/her experience with the instructional medium to be used.

- the presenter's teaching skills and implementation of educational methods (i.e., presentation strategies, structural strategies) and

the resulting clarity of presentation.

- the decision about the selection of an appropriate medium and delivery strategy (i.e., consideration of interactiveness, learning situation, technical capabilities of the medium).

- the managerial capabilities of the developing team (i.e., scheduling of delivery and organizational strategies, preparation of supplementary instructional materials).

- extrinsic and intrinsic motivational aspects of the program.

Physical learning conditions include all variables of the physical learning environment that have a potential influence on learning, such as the physical appearance of the room, lighting, temperature, noise level, technical quality of the instructional medium, etc. All input variables are predetermined by the program administrators.

The process variables of individualized teacher training by television include: 1) instructional setting, 2) the learning that takes place, and 3) change in student attitudes toward the subject-matter and instructional medium, which might occur during the instructional process.

Learning is the goal of instruction. In individualized instruction, learning is characterized by independent self-paced study. It is influenced by 1) the instructional setting, 2) the student characteristics (e.g., age, learning abilities, personal dynamics, attitudes, etc.) and 3) the characteristics of the instructional package (e.g., subject-matter characteristics; appropriateness and technical quality of instructional medium; organizational, managerial, and delivery strategies employed in the program). Furthermore, learning is affected by the time available to the student to complete the course requirements.

Attitudes are potentially subject to change. During the instructional process student attitudes toward the subject-matter, the instructional medium and method of delivery employed are influenced by the immediate learning experience. A mismatch between students' preprogram attitudes or expectations in the program and the actual learning experience can result in a change in student attitudes toward either the subject-matter, the instructional medium and/or the method of delivery employed, depending upon within which instructional component the mismatch occurs. Hence, a change in attitudes refers back to input variables, particularly to variables of the instructional package (e.g., method variables).

The instructional setting refers to variables such as the climate in which the actual learning takes place; lack of, or availability of tutor assistance; and the actual instructional activities in which the recipients engage. In truly individualized instruction, the instructional setting includes a different set of variables for each learner.

The instructional outcomes to be used as the basis for program evaluation are: 1) student achievement, 2) student post-program attitudes toward the subject-matter of the program, the instructional medium and method of delivery employed, and 3) student perception of the program efficiency.

Student achievement is a measure of the program effectiveness refers to the degree to which students accomplish the unit or course objectives. By comparing students' achieved level of knowledge in the subject-matter area (assessed after program completion) with their

entry-level of knowledge (preprogram assessment) conclusions are drawn about the amount of learning that took place as a result of exposure to the program. It is posited that student achievement is related to student attitudes, student expectations and factors inherent in the instructional setting.

Student postprogram attitudes toward the subject-matter, the instructional medium and method of delivery are a measure of program appeal. It is posited that postprogram attitudes are influenced by characteristics of the instructional package, such as the instructional medium selected, the instructional methods employed, and factors inherent in the instructional setting.

Perceived program efficiency is a measure of students' perception of the effort expended in completing the course of study. It is posited that this component is most strongly influenced by the expected costs and actual costs in terms of time and money. The information obtained by evaluation is the input for improving the system.

The model includes an evaluation feedback loop, that is, the output information collected in the evaluation process becomes new input for the system. For the student, the instructional outcomes (achievement, postprogram attitude, and perceived program efficiency) influence his or her attitudes toward the subject-matter, instructional medium and method of delivery of the educational program.

Secondly, the feedback provides information for the program developers. By analyzing outcomes, instructional developers can make conclusions about the effectiveness and appeal of the instruc-

tional medium and method of delivery and make decisions for revision and improvement of organizational, managerial and delivery strategies employed in the program. The system character of the model indicates that this is an ongoing 'iterative process of test-modify-retest-modify cycles' (Kandaswamy 1980).

The described model presents a framework that may be used for evaluation of individualized in-service programs in consumer studies using television as a medium of instruction.

## CHAPTER THREE

### METHODOLOGY

The research design, development of the research instrument, selection of the sample, collection of the data, and the statistical analysis will be discussed in this chapter.

#### Research Design

A one-group pretest-posttest design was employed to assess the effectiveness, efficiency, and appeal of the Consumer Studies in-service program. Program effectiveness was measured by student achievement on a 75-item multiple-choice test. Program efficiency, defined as the student's perception of the effort required to complete the program and program appeal were measured by an opinionnaire and a posttest evaluation questionnaire.

#### Research Instrument

The research instrument had four parts: 1) an achievement test, 2) an opinionnaire, 3) a personal questionnaire, and 4) a program evaluation questionnaire.

#### Development of the Achievement Test

The Consumer Studies Achievement Test included 75 multiple-choice items and was developed to assess participants' knowledge of consumer economics, consumer behavior, and consumer protection, prior to and after participation in the program. The test items were selected by the course instructors. Pretest and posttest forms were identical

in order to facilitate comparison of the test scores.

### Development of the Opinionnaire

The opinionnaire was developed in order to evaluate the program appeal and perception of program efficiency. Program appeal was determined by assessments of participant attitudes toward the subject-matter (consumer studies), and toward the instructional medium (individualized television instruction). Program efficiency was evaluated by assessments of participant perception of the effort required to complete the course requirements. The opinionnaire was administered prior to and following participation in the program in order to compare responses and measure any change. Two attitudinal measures were used for the assessment: the semantic differential and Likert scales.

Likert Scales. Nineteen opinion statements were constructed following Likert guidelines (Likert, 1932). Nine of the statements were designed to assess respondent attitudes toward the subject matter, seven of the statements were designed to assess respondent attitudes toward the instructional medium, and three statements were designed to assess participant perception of program efficiency. Approximately half of the statements were positive and half were negative in format. The subject's response to each statement was assessed by a seven-step attitude scale which ranged from "Completely agree" to "Completely disagree."

Semantic Differential. Four statements were developed in order to assess the psychological meaning of four concepts: consumer studies, television as a teaching tool, teacher training by television, and

learning by television. Each conceptual statement was to be rated against a seven point scale, the limits of which were defined by 11 pairs of bipolar adjectives. The adjective pairs were selected from a list recommended by Osgood (1975). Osgood and his colleagues (1975) empirically determined and classified pairs of adjectives as pertaining to the evaluative, potency, or activity dimension in the meaning of psychological objects. For the purposes of this study the following adjective pairs were selected: "good-bad," "valuable-worthless," "clear-hazy," "tense-relaxed" to measure the evaluative dimension; "hard-soft," "weak-strong," "deep-shallow" to measure the potency dimension; "active-passive," "simple-complex," "fast-slow," "sharp-dull" to measure the activity dimension of the meaning of the selected concepts. The positive or negative term of the adjective pairs as well as the evaluative, potency, and activity factor was randomly positioned in the right or left hand column. (The four scales used in this study are included in Appendix, pp. 111-114.)

#### Development of the Questionnaires

Two questionnaires were developed, a personal questionnaire and a program evaluation questionnaire.

Personal Questionnaire. The personal questionnaire included ten questions asking for socio-demographic information. It was administered as part of the preprogram assessment.

Program Evaluation Questionnaire. The program evaluation questionnaire was administered as part of the postprogram assessment and included seven questions pertaining to the respondents' opinion about the overall effectiveness of the consumer studies program.



## Procedure

### Sample

Data were obtained from participants in the Consumer Studies teacher in-service program. Since the requirements for a Basic Teaching Certificate in the State of Oregon include completion of course work in Consumer Education/Economics/Personal Finance, all preservice teachers in Oregon as well as in-service teachers who are new to the State and are seeking Oregon certification were potential course participants. Approximately 2,000 Oregon teachers were identified by the Oregon Department of Education (ODE) as potential clients. ODE notified all Educational Service Districts (ESDs) in Oregon of the newly developed program in consumer studies. The course was advertised in local newspapers by the ESDs. Sixty-five teachers registered for the program through one of six ESDs. Of those, 51 completed all course requirements and were included in the analysis of student achievement. Thirty-five participants completed all parts of the research instrument. Their responses were the basis for additional statistical analyses.

### Collection of Data

The consumer studies in-service program was pilot tested in five locations throughout Oregon between May and July 1981. The instructional package included ten 50 minute video lecture presentations, a study guide, reading materials, and the evaluation instrument. All materials except the evaluation instrument were developed by the instructors. The fully self-contained package was designed to be used for self-directed learning.

The ten video tapes were produced in a studio, simulating a classroom situation. Visual aids (transparencies, blackboard) were prepared by the instructors who had little or no previous experience with studio teaching. The time and financial resources available for producing the color video tapes did not allow for major revisions of the taping; however, some editing was done. The overall quality of the production was by no means equivalent to professional television programming.

The original intent was for the video program to be presented over a four week period. Three of the participating groups followed the predetermined procedure. For technical reasons the program format was changed by two program coordinators during the pilot testing to two-day workshops.

Copies of the instructional package, including the evaluation instrument and a letter of instruction were mailed to the six participating Educational Service Districts. In each ESD a volunteer had been trained by the Oregon Department of Education to be the course coordinator.

Data were obtained in two steps:

Step I (preprogram assessment) included administration of the achievement pretest, opinionnaire, and personal questionnaire. The 75-item Consumer Studies Achievement Test was administered to the examinees first. It was to be completed within one hour. Immediately following the achievement test, participants were asked to respond to the opinionnaire and personal questionnaire. It was estimated that most subjects would complete opinionnaire and questionnaire in approxi-

mately fifteen minutes. The respondents were told that the opinionnaire and questionnaire were not part of the achievement test. In order to assure anonymity achievement test scores and opinionnaire responses were matched by indication of social security number on all parts of the research instrument. The pretesting occurred before the subjects were exposed to any of the course material.

In Step II (postprogram assessment) achievement posttest, opinionnaire, and program evaluation questionnaire were administered to the participants. The postprogram assessment followed the same procedure as the preprogram assessment.

After all tests were completed, the program coordinators sent the research instrument back to the program administrator. Of the 65 students who initially enrolled in the course, 51 completed pre- and post-achievement test and 35 participants completed all parts of the research instrument.

### Statistical Analysis

The statistical analysis of the data in this study was divided into four parts: 1) analysis of the achievement test, 2) analysis of the opinionnaire, 3) analysis of the relationship between student achievement, attitudes, and selected variables, and 4) analysis of the personal and program evaluation questionnaire.

Statistical tests were run on a TRS-80 Model III Computer using programs from the Advanced Statistical Analysis Package.

T-tests for correlated samples were used to determine the significance of the difference between 1) pretest and posttest mean achievement scores, and between 2) pretest and posttest mean attitude scores. Since pretest and posttest mean scores were derived from the same subjects, this was an appropriate test statistic to use. The advantage of the t-test for correlated means is, that it results in a smaller standard error than the t-test for independent means, and thus is less likely to lead to the conclusion that the mean differences are systematic when in fact they are due to chance.

The t-value was computed using the following formula:

$$t = \frac{\bar{D}}{S_{\bar{D}}} \sqrt{N-1}; \quad \text{d.f.} = N-1$$

where:  $\bar{D}$  = sample mean difference  
 $S_{\bar{D}}$  = sample standard deviation of mean difference  
 $N$  = number of pairs

If the probability of the calculated t-value was less than .05, the difference between the two sample means was considered to be significant (Neale/Liebert 1980, p. 78).

One-way Analysis of Variance was employed to test the significance of the differences among 1) posttest achievement mean scores for consumer economics, consumer behavior, or consumer protection; and among 2) residual achievement mean gain scores for consumer economics,

consumer behavior, or consumer protection. One-way Analysis of Variance is a statistical tool for determining whether the variability among two or more sample means represents a true difference or whether the difference is likely to be due to sampling error. As a test statistic for the significance of the differences, the F-statistic is used. The F-test involves the comparison of two variance estimates: between-groups variance estimate (numerator) and within-group variance estimate (denominator).

The F-ratio was calculated according to the following formula:

$$F = \frac{MSR}{MSE} \frac{/d.f.1}{/d.f.2}$$

(Neter & Wasserman,  
1974, p. 242)

where: MSR = Regression Mean Square  
MSE = Error Mean Square  
d.f.1 = degrees of freedom associated with MSR (=k-1) (k=number of groups)  
d.f.2 = degrees of freedom associated with MSE (=n-k) (n=total number of observations)

The difference among two variances was considered significant if the probability of the F-ratio was less than .05.

In order to determine which group means were significantly different from one another, Scheffé's test was used. The Scheffé-method is more rigorous than other multiple comparison methods with regard to Type I error (assuming that differences among the means are due to chance when in fact they are systematic). The Scheffé-test uses the following formula:

$$F = \frac{(\bar{x}_1 - \bar{x}_2)^2}{\text{MSE} \left( \frac{1}{n_1} + \frac{1}{n_2} \right) (k - 1)}$$

(Turney and Robb, 1973, p. 132)

where:  $\bar{x}_1$  = mean of group I  
 $\bar{x}_2$  = mean of group II  
MSE = Error mean square  
 $n_{1,2}$  = observations in group I, II  
k = number of groups compared

Two group means were considered significantly different from one another if the probability of the F-value was less than .05.

Part-Whole Correlations were calculated to determine the relationship between each achievement part score and the total achievement score. Part-whole correlation incorporates a correlation of a variable with itself and is used to increase the confidence that the part scores and whole scores are compared on a similar basis. The formula used to estimate this correlation was:

$$r_{pq} = \frac{r_{tp} (s_t - s_p)}{\sqrt{s_t^2 + s_p^2 - 2r_{tp} s_t s_p}}$$

(Guilford & Fruchter, 1978, p. 331)

where: p = part score  
t = total score  
q = t - p

T-test for significance of the difference between two correlation

coefficients for correlated samples was done using the following formula:

$$t = \frac{(r_{12} - r_{13}) \sqrt{(N-3)(1+r_{23})}}{\sqrt{2(1-r_{12}^2 - r_{13}^2 - r_{23}^2 + 2r_{12}r_{13}r_{23})}}$$

(Ferguson, 1971, p. 171)

Scheffé-tests and Part-whole Correlations were calculated by the researcher on an electronic hand calculator.

Pearson Product Moment Correlation was used to identify relationships among the variables: age of respondents, number of years of teaching experience of respondents, and respondent attitude toward the educational program (posttest assessment). This statistical technique is one of the most commonly employed types of correlational statistics when the degree of relationship (correlation) between two measures on the same individual is to be assessed. The degree of correlation is indicated by the correlation coefficient ( $r$ ). The highest correlation between two variables is indicated by the coefficient  $r = +1.0$  (perfect positive correlation), or  $r = -1.0$  (perfect negative or reciprocal correlation). If no degree of relationship exists between two variables, the correlation coefficient equals zero ( $r = .00$ ).

The significance of each correlation coefficient was determined by using the following formula:

$$t = r \sqrt{\frac{N-2}{1-r^2}}$$

(Ferguson, 1971, p. 169)

Simple Linear Regression was employed to calculate residual achievement gain scores which were to be used as the dependent variable in the analysis of interrelationships among selected variables and student achievement. Residual achievement gain scores were obtained by regressing posttest achievement scores on the pretest achievement scores. The resulting regression line was used to predict a posttest score ( $Y'$ ) for any given pretest score. The actual posttest score ( $Y$ ) was then subtracted from the predicted score to form the residual achievement gain scores ( $Y'-Y$ ). This procedure has the effect of removing the posttest variance attributable to the pretest (Root & Gall, 1981, p. 8). The general equation for a simple regression model is:

$$y = b_0 + b_1x$$

where:  $y$  = dependent variable  
 $x$  = independent variable  
 $b_1$  = slope of regression line  
 $b_0$  = intercept of regression line

Multiple Regression was used to determine the interrelationship among residual achievement gain scores and three variables: 1) instructional setting, 2) age of respondents, and 3) respondent attitudes toward the consumer studies program. Multiple regression was chosen for its ability to assess linearity between a given variable and each particular variable from a set of independent variables while controlling for the remaining variables.

The relationship between one dependent variable and two or more independent variables may be expressed mathematically as a linear function. The following equation is the general form of a multiple



regression model:

$$y = b_0 + b_1x_1 + b_2x_2 + \dots + b_nx_n + e$$

where:  $y$  = dependent variable

$x_1$  to  $x_n$  = set of independent variables

$b_0$  = constant (intercept in simple regression)

$b_1$  to  $b_n$  = regression coefficients associated with independent variables

$e$  = residual or error term

In multiple regression analysis, a coefficient of determination ( $R^2$ ) is calculated for each set of independent variables.  $R^2$  is a measure for that portion of the variance of the dependent variable that is accounted for or explained by the independent variables.

In general, multiple regression requires that variables are measured on an interval or ratio scale and the relationships among the variables are linear and additive (Nie et al., 1975, p. 320). Variables such as age, number of years of teaching experience, attitude scores, and achievement scores are continuous variables. In order to include nominal variables in multiple regression analysis, dummy variables (or indicator variables) are used. The dummy variable is a binary variable that takes one of two possible values: zero or unity. In this study, indicator variables were assigned to the variable instructional setting. Four different instructional settings required three indicator variables. The instructional setting I to which no indicator variable was assigned served as a reference group with regards to the remaining three variables. Therefore, in the analysis of variance table, the regression coefficients of the three dummy variables describe the added affect of instructional setting relative to the reference group (instructional setting I).

## CHAPTER FOUR

### FINDINGS

The findings of this study are presented in five sections: description of the sample, results of the analysis of student achievement, results of the analysis of student attitudes, results of the analysis of the relationship between student achievement, attitudes, and selected variables, and results of the analysis of the program evaluation questionnaire.

#### Sample Characteristics

Data regarding socio-demographic characteristics of the respondents were obtained from the personal questionnaire as part of the pretest assessment. Absolute and/or relative frequencies as well as measures of central tendency and dispersion will be used to report the personal characteristics of the 35 participants who completed all parts of the research instrument.

#### Age of the Respondents

The mean age of the respondents was 35, the median age was 34, and the mode was 24 years of age. The age range of the participants is presented in Table 1.

#### Sex of the Respondents

Thirty-one (88.6%) of the respondents were female, and four (11.4%) were male.

Table 1  
Age of Respondents

Age of the Respondents	Absolute Frequency	Relative Frequency %
23 to 25 years	7	20.0
26 to 30 years	8	22.8
31 to 35 years	7	20.0
36 to 45 years	8	22.8
Over 45 years	5	14.2
Total	35	100.0

#### Years of Teaching Experience

Nineteen of the respondents (57.6%) had five or less years of teaching experience; six (18.2%) of the respondents had six to 10 years of teaching experience, and eight (24.2%) had ten or more years of teaching experience. Two respondents had no teaching experience.

The respondents reported an average of 7.3 years of teaching experience, the median was five years and the mode one year of teaching experience.

#### Grade Level of Teaching

Fourteen of the respondents (40%) were teaching at the primary level and 14 were teaching at the secondary level. Seven participants (20%) were not under contract at the time they participated in the program.

### Teaching Certificate

Only five (14%) of the respondents did not hold a teaching certificate. Of the 30 who held teaching certificates, 23 held a teaching certificate from Oregon, eight from California, six from Washington, two from Montana, one from Missouri, and one from New Mexico.

### Major and Minor Endorsement

The subjects were asked to indicate their major and minor endorsement. Their responses are presented in Table 2.

As indicated in Table 2, the respondents, or course participants, had a very broad endorsement spectrum ranging from anthropology to mathematics and physical education. Only two of the respondents had a major in home economics, and three had a minor in business education.

### Experience in Teaching Consumer Economics

Of all respondents four (11.4%) had taught a class in consumer economics before, and thirty-one (88.6%) of the respondents had no experience in teaching this subject-matter.

### Reason for Enrollment in "Consumer Studies"

When asked why they were enrolled in the Consumer Studies program, 21 (60%) of the respondents replied that they needed it to satisfy teaching credential requirements. Ten respondents (28.6%) indicated a personal interest in the subject-matter. Four participants had "other" reasons.

### Expectation to Integrate Course Material into Classroom Teaching

The respondents were asked whether or not they expected to inte-

Table 2  
Major and/or Minor Endorsement

Endorsement	Absolute Frequency
Education (Elementary Ed., Vocational Ed., Health Ed., Business Ed., Music Ed., Special Ed., Physical Ed.)	25
Social Sciences (Psychology, History, Sociology, Anthropology, Home Economics)	16
Language Arts (English, Speech, Reading)	8
Sciences (Mathematics, Physical Science, Med. Tech., Life Science)	4
No Endorsement	2
Total <sup>1</sup>	55

<sup>1</sup>Some respondents only indicated their major endorsement.

grate course material into their future classroom teaching. Of all respondents, sixteen (46%) expressed such an expectation, fourteen (40%) were not sure or did not know, and five respondents (14%) indicated that they will never need the information for classroom instruction.

#### Previous Experience with Television Instruction

It was of interest to know whether or not the course participants had had previous experience with televised instruction. Of the respondents, ten (28.6%) had previously had experience with instructional television, and 25 (71.4%) of the respondents had not.

#### Location

The socio-demographic characteristics presented were obtained from 35 participants in four different locations. Each location represents a different instructional setting. Ten respondents participated at instructional setting I; five respondents at instructional setting II; eleven respondents at instructional setting III, and nine respondents participated at instructional setting IV.

#### Results of the Analysis of Student Achievement

The Analysis of Student Achievement on the Consumer Studies Achievement Test tested the general research hypothesis that there was no significant difference between students' pretest and posttest scores on the 75-item test. Additionally, an assessment was made of differences among the three parts of the test: consumer economics, consumer behavior, and consumer protection. Further analysis was done in order to examine the contribution of each of the three-part scores

to the total test scores. Subsequently, achievement gain scores were calculated, partitioned into three partial gain scores, and analyzed for differences among them and their contribution to the overall achievement gain scores.

#### Test of the Overall Hypothesis

The overall research hypothesis was stated in the null form:  
There will be no significant difference between pretest and posttest mean scores on the Consumer Studies Achievement Test.

Participants' level of knowledge in the area of consumer studies was assessed by the Consumer Studies Achievement Test prior to and after participation in the program. The pretest mean achievement scores for the 51 examinees was 44.5 (S.D. = 9.03) and the posttest mean achievement score was 63.25 (S.D. = 6.86). The pretest achievement converts to 59.3 percent correct on the 75-item test, the posttest achievement to 84.3 percent. The t-test for correlated samples was used to test the significance of the difference between pretest and posttest mean scores. A t-value of 16.4 resulted ( $p < .000$ ). Since the significance level had been set at .05, the null hypothesis was rejected. In this study, examinees' achievement scores on the Consumer Studies Achievement Test were significantly higher after participation in the program than they were prior to participation.

#### Investigation of Achievement Test Partscores

Students' final achievement on the Consumer Studies Achievement Test was further analyzed. In order to determine whether examinees

performed equally on the three parts of the achievement test, their total test scores were partitioned into three partscores: a consumer economics score, a consumer behavior score, and a consumer protection score. One-way analysis of variance was used to test the significance of the difference among the means of the three partscores. The F-ratio was 8.26 ( $p < .001$ ) indicating that the partial test mean scores were significantly different from one another.

Table 3

Partial Mean Achievement Scores for Consumer Economics, Consumer Behavior, and Consumer Protection (Post-Assessment)

Section	Mean Score	Standard Deviation of Mean Score
Consumer Economics	22.27	2.5664
Consumer Behavior	20.67	2.7287
Consumer Protection	20.19	2.8091

In order to determine which partial mean achievement scores were significantly different from one another, Scheffé's test was used. A significant difference was found between the partial mean achievement scores for consumer economics and consumer behavior ( $F = 14.07$ ) and between consumer economics and consumer protection ( $F = 23.64$ ). No significant difference was found for the comparison of the partial mean achievement scores for consumer behavior and consumer protection ( $F = 1.23$ ). Table 4 summarizes the results of the Scheffé test.

Finally, Part-whole correlation coefficients were calculated to



Table 4

Comparisons of Pairs of Partial Mean  
Achievement Scores for Consumer Economics,  
Consumer Behavior and Consumer Protection Using Scheffé's Test

Comparisons	Mean Difference	F-Ratio
$\bar{X}_{CE}$ and $\bar{X}_{CB}$	1.60	14.06
$\bar{X}_{CE}$ and $\bar{X}_{CP}$	2.08	23.64
$\bar{X}_{CB}$ and $\bar{X}_{CP}$	.47	1.23

$$F_{(.05, 2/150)} = 3.84 \text{ and } F_{(.01, 2/150)} = 6.63.$$

determine the relationship between each mean partscore and the total achievement score.<sup>1</sup> The highest part-whole correlation coefficient was between consumer economics scores and total achievement scores ( $r_{pq} = .85$ ). Slightly lower was the part-whole correlation coefficient for consumer protection scores and total achievement scores ( $r_{pq} = .75$ ) whereas the part-whole correlation coefficient between consumer behavior scores and total achievement scores was only  $r_{pq} = .50$ . All

---

<sup>1</sup>The formula used to estimate this correlation is included in Chapter Three, p.

three coefficients were significant ( $p \leq .05$ ).<sup>1</sup> Table 5 summarizes the results of the part-whole correlation.

Table 5  
Part-Whole Correlation Coefficients ( $r_{pq}$ )  
for Section Scores with Total Achievement Scores

Correlates	$r_{pq}$	$r_{pq}^2$	t-value
Consumer Economics/Total Achievement	.85	.73	11.54
Consumer Behavior/Total Achievement	.50	.25	7.94
Consumer Protection/Total Achievement	.75	.56	4.04

$$t_{(.05,49)} = 2.021; t_{(.01,49)} = 2.704$$

A test for significance of the difference between two correlation coefficients for correlated samples was done.<sup>2</sup>

A significant difference ( $p \leq .05$ ) between all three pairs of

<sup>1</sup>The correlation coefficients were tested for significance by using the following formula:

$$t = r \sqrt{\frac{N-2}{1-r^2}} \quad (\text{Ferguson, 1971, p. 169})$$

<sup>2</sup>The formula used was:

$$t = \frac{(r_{12} - r_{13}) \cdot \sqrt{(N-3)(1+r_{23})}}{\sqrt{2(1-r_{12}^2-r_{13}^2-r_{23}^2 + 2r_{12}r_{13}r_{23})}}$$

part-whole correlation coefficients was found (Table 6).

In this study consumer economics scores contributed significantly more to total achievement scores than did the other two components. And, consumer protection scores made a significantly greater contribution than consumer behavior scores to total achievement scores.

Table 6

Comparisons of Pairs of Correlation Coefficients  
Using a t-test for Correlated Samples

Comparisons	Correlation Coefficients	t-value <sup>a</sup>
Consumer Economics with Consumer Behavior	.86 and .50	5.884
Consumer Economics with Consumer Protection	.86 and .75	2.219
Consumer Behavior with Consumer Protection	.50 and .75	2.685

$$t_{(.05,48)} = 2.021; t_{(.01,48)} = 2.704$$

#### Investigation of the Achievement Gain Partscores

The differences among the final achievement partscores might be, to some degree, a reflection of differences in the pretest partscores. Gain scores were, therefore, computed and partitioned into three partscores in order to assess differences in the accrument of knowledge in consumer economics, consumer behavior, and consumer protection. Table 7 presents the partial pretest and posttest achievement mean scores and the resulting mean achievement gain

scores and their standard deviations.

Table 7

Partial Pretest Achievement Mean Scores, Partial Posttest Achievement Mean Scores, Partial Achievement Mean Gain Scores and Their Standard Deviation

Test Section	Pretest Mean	Posttest Mean	Mean Gain Score	Standard Deviation of Mean Gain
Consumer Economics	15.85	22.27	6.42	3.327
Consumer Behavior	15.38	20.67	5.29	2.812
Consumer Protection	12.30	20.19	7.89	3.516

One-way analysis of variance was used to test the differences among the partial mean gain scores. A highly significant difference among the partial achievement mean gain scores was found ( $F 8.26, p=.001$ ).

In order to determine which partial mean gain scores were significantly different from one another, Scheffé's test was used. Significant differences between all three partial achievement mean gain scores were found. The results of the Scheffé-test are summarized in Table 8.

#### Summary of the Results of the Analysis of Student Achievement

A highly significant difference in student achievement between pretest and posttest was found for the 51 examinees, with an average gain of 18.75. Analysis of the partial mean achievement scores

Table 8

Comparison of Pairs of Partial Achievement Mean Gain Scores for Consumer Economics, Consumer Behavior, and Consumer Protection Using Scheffé-Test

Comparison	Mean Difference	F-Ratio
$\bar{X}_{CE}$ with $\bar{X}_{CB}$	1.13	5.26
$\bar{X}_{CE}$ with $\bar{X}_{CP}$	1.47	8.76
$\bar{X}_{CB}$ with $\bar{X}_{CP}$	2.60	27.59

$$F_{(.05, 2/150)} = 3.84; F_{(.01, 2/150)} = 6.63$$

revealed that the highest partial posttest mean score was for consumer economics. The highest achievement mean gain score occurred in consumer protection, the section with the lowest initial mean score. The lowest achievement gain score was measured for consumer behavior.

### Results of the Analysis of Student Attitudes

The analysis of student attitudes concerning the consumer studies program included the assessment of participants' overall attitudes toward the program prior to and following participation. Attitude scores were developed and partitioned into three components (attitude toward the subject-matter, attitude toward the instructional medium, and perception of the program efficiency) in order to determine the contribution of each attitude component to the overall attitude score. Finally, attitude profiles were developed in order to obtain additional information about respondents' attitudes and provide clues for interpreting changes in participants' attitudes from preprogram to postprogram assessment.

#### Results and Analysis of Students' Overall Attitudes Toward the Consumer Studies Program

Participant overall attitudes toward the consumer studies program were measured using nineteen Likert attitude scales. The scores assigned to the nineteen attitude scales were combined to develop an overall attitude score for each subject. The highest attitude score possible (most positive attitude) was 133 and the lowest attitude score possible (most negative attitude) was 19. A neutral attitude would be indicated by a score of 76. In the preprogram assessment respondents' mean attitude score was 89.1, indicating slightly positive student attitudes toward the in-service program. The postprogram assessment revealed that respondents' overall attitudes had changed to a neutral position on the attitude continuum with a mean attitude score of 76.2.

The difference between the mean scores was significant at the .01 level ( $t = 4.76$ ). This indicates that in this study, participant attitudes toward the consumer studies program shifted significantly from a favorable to a neutral overall attitude.

#### Student Attitudes Toward the Subject-Matter

Nine opinion statements measured participant attitudes toward the subject-matter of the program. The scores assigned to the nine scales were combined to develop a subject-matter attitude score. The highest consumer studies attitude score possible was 56, the lowest score possible was 9. A score of 36 would indicate a neutral attitude. The consumer studies mean attitude score measured prior to participation in the program was 42.5, indicating somewhat positive initial student attitudes toward the subject-matter. In the postprogram assessment, less favorable attitudes were evidenced by a mean attitude score of 38.5. The difference between the means was significant at the .01 level ( $t = 2.774$ ). The participants in this study had a more positive attitude toward the subject-matter prior to participation in the program than was indicated by attitude scores following participation.

#### Student Attitudes Toward the Instructional Medium

Participant attitudes toward the instructional medium television were assessed by seven attitude scales, the scores of which were combined to develop an instructional television attitude score. On the attitude continuum, ranging from 7 to 49, a neutral attitude was indicated by a score of 28. Prior to program participation, respondents assigned neutral values to the instructional medium; the ITV

mean attitude score was 28.4. In the postprogram assessment, slightly negative participant attitudes toward the instructional medium television were measured. The ITV mean attitude score was 24.2. The difference between the means was statistically significant at the .01 level ( $t = 3.176$ ). In this study, respondents attitudes toward the instructional medium changed notably from a neutral attitude prior to program participation to a slightly negative attitude following participation.

#### Student Perception of Program Efficiency

Participants' perception of the effort required to complete the course requirements was measured by three perception scales. Scores assigned to the three scales were combined to develop a program efficiency perception score. The highest program efficiency perception score possible was 21, the lowest score possible was 3, and a neutral score was 12. In the pretest assessment, the program efficiency mean perception score was 16.1, indicating that the students expected the program to be somewhat efficient. After participation in the program respondents' perception of the program efficiency was considerably less favorable. The posttest mean perception score was 11.4. The difference between pretest and posttest mean perception score was statistically significant ( $t = 4.49, p=.000$ ). Table 9 presents pretest and posttest mean attitude scores, the mean difference and the t-values of the mean differences.

#### Investigation of the Relationship Between Attitude Partscores and Total Attitude Scores

In order to determine the relationship between attitude partscores



Table 9

Pretest and Posttest Total Mean Attitude Scores,  
 Partial Mean Attitude Scores,  
 Mean Difference and t-value for Mean Difference

	Pretest Mean	Posttest Mean	Mean Difference	t-value
Total Attitude (neutral score=76)	89.1	76.2	12.9	4.76
Attitude toward Consumer Studies (neutral score=36)	42.5	38.5	4.0	2.774
Attitude toward Instructional Television (neutral score=28)	28.4	24.2	4.2	3.176
Perception of Program Efficiency (neutral score=12)	16.1	11.4	4.7	4.49

$$t_{(.05,34)} = 2.04$$

and total attitude scores, part-whole correlation coefficients were calculated. The highest correlation was between program efficiency perception scores and total attitude scores ( $r_{pq} = .76$ ). Second highest correlated were consumer studies attitude scores and total attitude scores ( $r_{pq} = .56$ ). The part-whole correlation coefficients are presented in Table 10. The test for significance of the difference between two correlation coefficients for correlated samples yielded no significant t-values for any pair of correlation coefficients. In this study, no single attitude partscore made a significantly greater contribution than the other components to the overall attitude scores. However,

some indication is given by the part-whole correlation coefficients that perception of the program efficiency is associated more closely with the overall attitude than are the other two attitude components. Furthermore, the instructional medium attitude scores share the least proportion of variance with total attitude scores.

Table 10

Part-Whole Correlation Coefficients ( $r_{pq}$ )  
for Partscores and Overall Attitude Scores

Correlates	Overall Attitude Scores	$r_{pq}^2$ (Proportion of shared variance)	t-value
Consumer Studies Attitude Scores	$r_{pq} = .68$	.46	5.23
Instructional Television Attitude Scores	$r_{pq} = .56$	.31	3.79
Program Efficiency Perception Scores	$r_{pq} = .76$	.58	6.34

$$t_{(.05, 32)} = 2.042$$

Attitude Profiles Presenting Student Perception of the  
Subject-Matter and Medium of Instruction

Four conceptual statements were used to assess participants' perception of the area of study (consumer studies) as well as their perception of the medium of instruction (ITV). The semantic differential technique was employed in order to obtain a detailed picture of

participants' perception of consumer studies and instructional television, and to provide clues for interpreting possible changes in perception occurring from pretest to posttest assessment. The semantic differential in this study included the following four concepts: CONSUMER STUDIES, TELEVISION AS A TEACHING TOOL, TEACHER TRAINING BY TELEVISION, and LEARNING BY TELEVISION.

For each concept, profiles for pretest and posttest mean responses were developed in order to present students' perceptions of the concepts in question prior to and after participation in the program. Both profiles are included in one figure to indicate the change in perception from pretest to posttest. Additionally, a record of the scale values most frequently endorsed by the respondents provides a modal profile of student perceptions of the area of study and the medium of instruction employed in the consumer studies in-service program.

#### Concept I: Consumer Studies

The pretest and posttest mean profiles for the first conceptual statement indicate that respondents, on average, assigned neutral values to CONSUMER STUDIES prior to and following participation in the consumer studies program. From pretest to posttest eight scale mean scores shifted notably from a slightly positive to a less positive or even negative scale position, indicating that respondents' perception of CONSUMER STUDIES was overall less favorable after participation in the program than it was prior to it.

With a few moderate peaks the profile indicates that CONSUMER STUDIES was perceived by the subjects as slightly good and valuable, more passive than active, and somewhat complex and tense. Figure 3

presents the attitude profiles for Concept I.

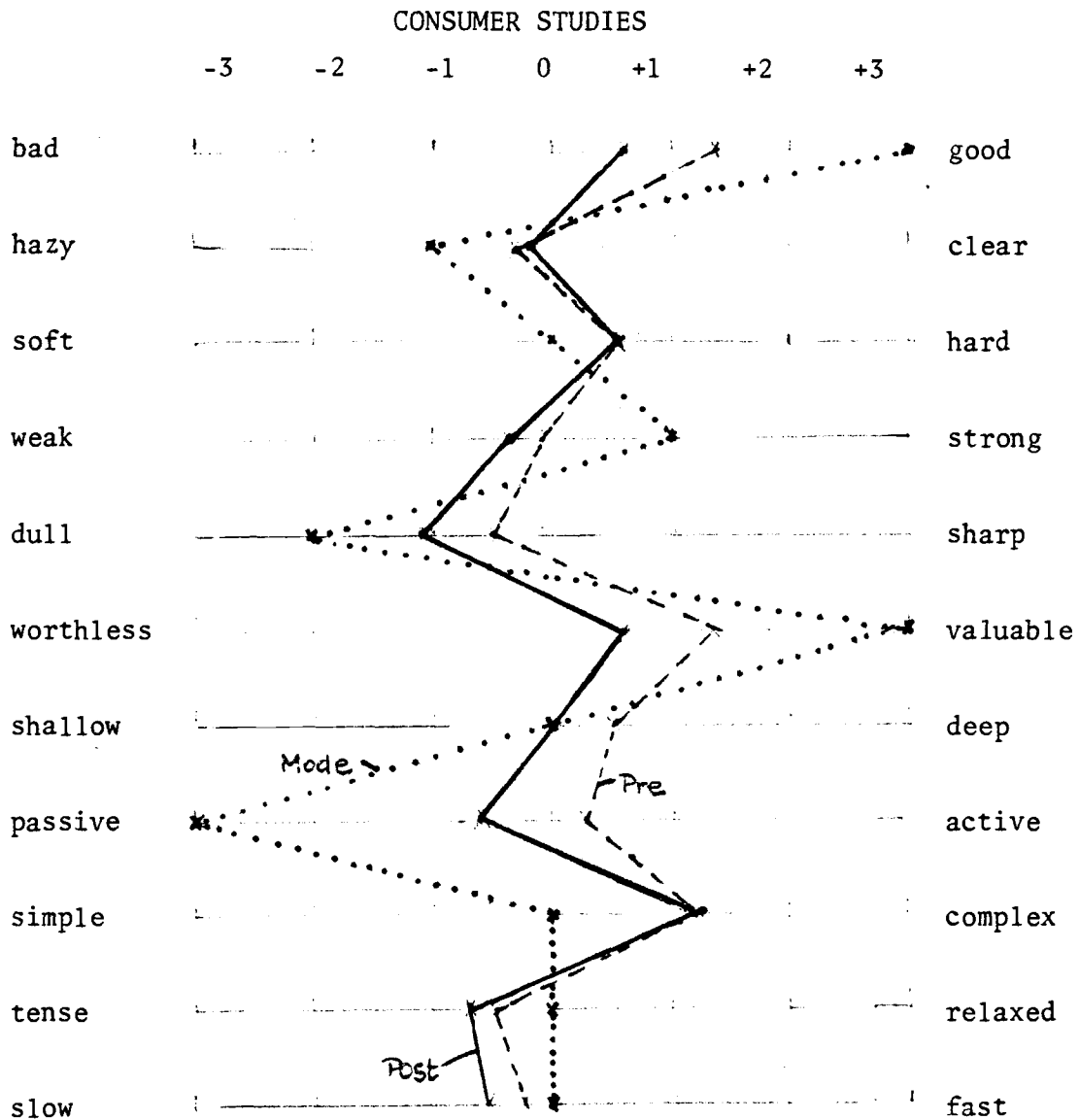


Figure 3. Pretest Mean Profile, Posttest Mean Profile, and Modal Profile for Concept I

Since a profile based on mean scores does not exhibit an existing response dispersion, a posttest modal profile was included in Figure 3. According to the modal profile, the largest proportion of students

perceived CONSUMER STUDIES as very good and valuable, slightly strong, very passive, somewhat hazy, and quite dull. Figure 3 presents the attitude profiles for Concept I.

#### Concept II: Television as a Teaching Tool

The second conceptual statement assessed participants' perception of TELEVISION AS A TEACHING TOOL. On average, students assigned neutral values to this concept prior to participation in the program, and negative values following participation. From pretest to posttest, respondents' perception changed notably in a negative direction, indicating that students had a less favorable impression of TELEVISION AS A TEACHING TOOL after exposure to a class taught by television. The posttest mean profile shows that only four out of eleven mean scale scores were positive, seven were negative. After participation in the program, TELEVISION AS A TEACHING TOOL was perceived as slightly bad, weak, and mostly dull and passive. The modal profile for Concept II was essentially congruent with the posttest mean profile (Figure 4).

#### Concept III: Teacher Training by Television

Students' perception of Concept III was of primary interest to this study. The pretest mean profile discloses a slightly negative initial student perception of TEACHER TRAINING BY TELEVISION. This indicates that the course participants had low expectations of television as an instructional medium for teacher training, before even being exposed to the televised course. From pretest to posttest, students' perception of TEACHER TRAINING BY TELEVISION shifted slightly in a negative direction. According to the posttest profile TEACHER

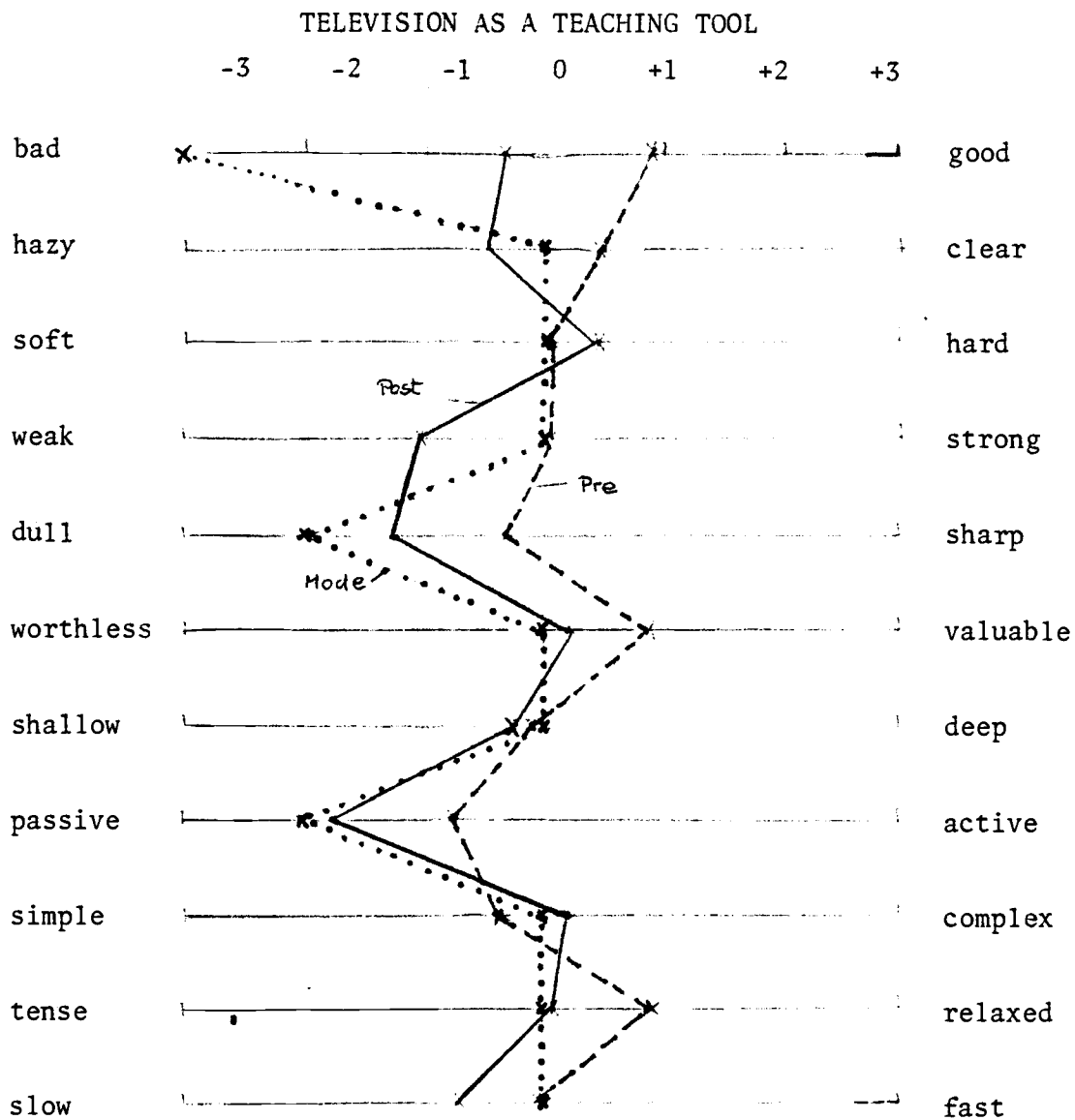


Figure 4. Pretest Mean Profile, Posttest Mean Profile, and Modal Profile for Concept II .

TRAINING BY TELEVISION was perceived as slightly bad, hazy, weak, dull and mostly passive.

The modal profile for Concept III was very helpful in explaining students' perception of TEACHER TRAINING BY TELEVISION. The largest proportion of the respondents perceived TEACHER TRAINING

BY TELEVISION as very bad, hazy, weak, dull, worthless, and passive. Of the four concepts, Concept III received the most negative ratings (Figure 5).

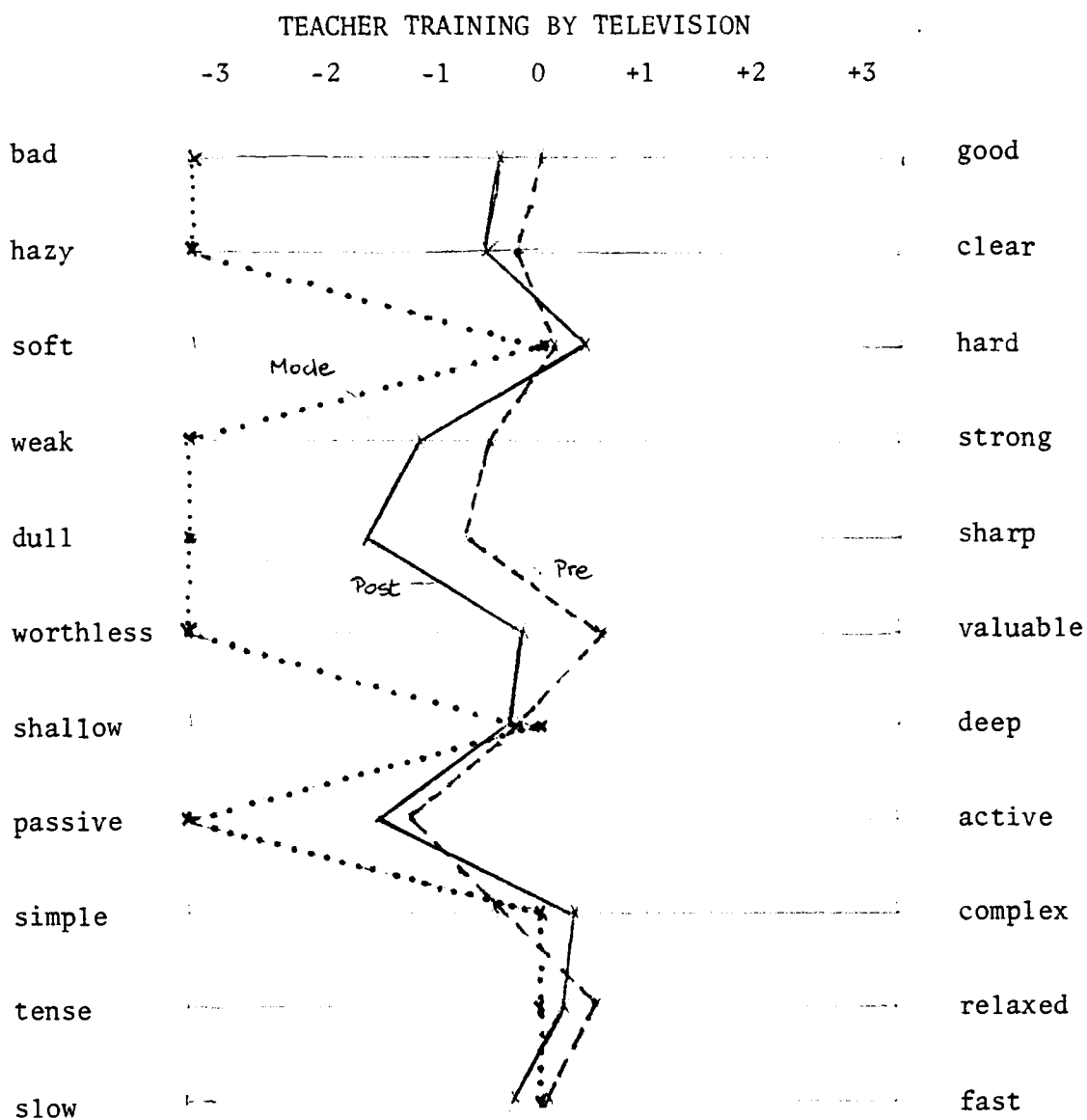


Figure 5. Pretest Mean Profile, Posttest Mean Profile, and Posttest Modal Profile for Concept III.

#### Concept IV: Learning by Television

The last conceptual statement assessed participant perception of LEARNING BY TELEVISION. The students' perception of LEARNING BY TELEVISION changed from a more positive perception in the pretest to a more negative perception in the posttest. It was noted that initially students assigned positive values to both evaluative scales good-bad, and valuable-worthless whereas, after exposure to the course program they assigned neutral values to these scales. Students' perception of LEARNING BY TELEVISION also changed notably for other scales, i.e., from slightly clear to slightly hazy; from neither strong nor weak to somewhat weak, and from slightly simple to slightly complex.

The modal profile discloses that the greatest proportion of respondents saw LEARNING BY TELEVISION as very bad, very dull, and very passive. For all other scales, the modal profile indicates a neutral position (Figure 6).

The analysis of student responses to the four conceptual statements revealed that participants assigned most favorable values to the subject-matter (CONSUMER STUDIES), relative to the other three concepts. Less positively rated by respondents were the two statements pertaining to the instructional medium: TELEVISION AS A TEACHING TOOL, and LEARNING BY TELEVISION. Particularly on the activity dimension (e.g., passive-active) and potency dimension (e.g., weak-strong) these concepts were rated fairly negatively. Least favorable attributes were assigned to TEACHER TRAINING BY TELEVISION. Respondents started the program with a slightly negative perception of TEACHER TRAINING BY



TELEVISION and they assigned even more negative values to this concept following participation in the program. The four mean profiles exhibit similar scale peaks. This could be an indication of the prevalence of certain program aspects in students' perception or indicate a response set.

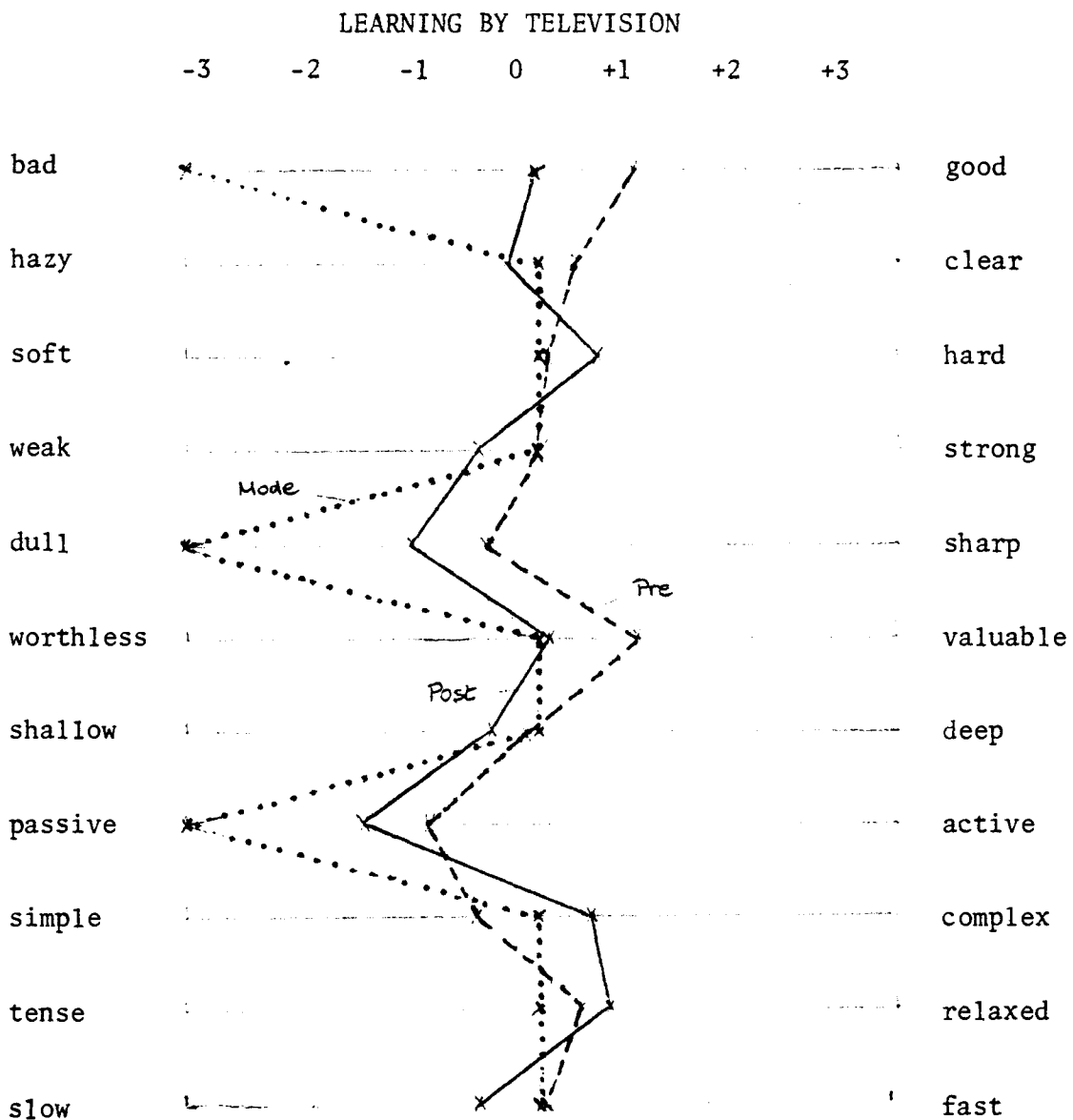


Figure 6. Pretest Mean Profile, Posttest Mean Profile, and Posttest Modal Profile for Concept IV

### Summary of the Results of the Analysis of Student Attitudes

Student overall attitudes concerning the in-service program in consumer studies were, on the average, more favorable prior to participation in the program than they were following participation. When the total attitude score was partitioned into three components - a consumer studies attitude score, an instructional television attitude score, and a program efficiency perception score - it was found that, in pretest and posttest, students assigned the most favorable values to statements pertaining to the subject-matter, and least favorable values to statements pertaining to the instructional medium and method of delivery (Table 9). From pretest to posttest, students' attitude toward the subject-matter decreased from a positive to a slightly positive attitude and students' attitude toward the instructional medium changed from a neutral to a slightly negative attitude. Students' perception of the program efficiency prior to participation indicated that the participants expected the program to be somewhat efficient whereas their perception concerning this aspect was considerably less positive following program participation. Furthermore, the largest change from pretest to posttest occurred in participant perception of the program efficiency.

The results from the analysis of the semantic differential supported these findings. Comparison of pretest and posttest mean profiles indicated a change in student attitudes concerning consumer studies and instructional television toward a less positive postprogram attitude. The conceptual statement: Teacher Training by Television, was rated least favorably by the respondents, indicating that the

participants perceived teacher training by television as somewhat negative.

The discrepancy between mean profiles and the modal profile provided indication of the wide response dispersion within the entire group of subjects.

Results of the Analysis of the Relationship  
Between Student Achievement, Attitudes, and Selected Variables

The analysis of the relationship between student achievement and the variables student attitudes, instructional setting, age of respondents, and number of years of teaching experience included the assessment of relationships between all possible pairs of variables by using Pearson Product Moment Correlation. Multiple Regression Analysis was used in order to determine the influence of student attitude, age, and instructional setting on student achievement. For the variable instructional setting, dummy variables were used. Since four different instructional settings required three dummy variables, no correlation coefficients could be computed between this variable and any other variable. Therefore, coefficients of multiple determination were used as indicators of the degree of relationship between instructional setting and any other variable.

Relationship Between Residual Achievement Gain and Selected Variables

Pearson Product Moment Correlation coefficients were calculated to determine the relationship between residual achievement gain scores and each of the following variables: attitude, number of years of teaching experience, and age of respondent.

The correlation coefficient for residual achievement gain and attitude was highest ( $r = -.49$ ). The correlation coefficient for residual achievement gain and teaching experience was slightly lower ( $r = .47$ ). Age and residual achievement gain has a correlation coefficient for  $r = .38$ . All three correlation coefficients were significant ( $p = .05$ ) indicating that there was a significant relationship between

residual achievement gain and each of the variables. The coefficient of multiple determination for the relationship between residual achievement gain and instructional setting was  $r = -.55$  which is significant at the .05 level. This indicates that, in this study, approximately 30% of the variation in residual achievement gain was accounted for by the instructional setting.

It was noted that residual achievement gain and student attitudes were inversely related which suggests that a positive student attitude is related to a residual achievement gain lower than expected; and a negative student attitude is related to a residual achievement gain higher than expected.

#### Relationships Between the Variables Attitude, Age, Teaching Experience, and Instructional Setting

Pearson Product Moment Correlation Coefficients were calculated to determine the relationship between all possible pairs of the variables: attitude, age, and teaching experience. The highest correlation coefficient was found for the variables age and teaching experience ( $r = .73$ ); second highest correlation was between age and attitude ( $r = .62$ ); and teaching experience and attitude had a correlation coefficient of  $r = .47$ . All three coefficients were significant at the .05 level. In this study, age of respondent and teaching experience shared 53.3% of their variation; participant attitude and age had a common variance of 38.4%, and participant attitude and teaching experience shared 22.1% of their variation.

Coefficients of multiple determination were calculated to determine the relationship between instructional setting and each of the

variables: attitude, teaching experience, and age. It was found that instructional setting and attitudes were very highly related ( $r = .81$ ); for teaching experience and instructional setting the coefficient of multiple determination was  $r = .71$  and for age and instructional setting  $r$ -multiple was  $.68$ . All coefficients were significant. Table 11 summarizes the correlation coefficients and coefficients of multiple determination computed for the variables attitude, age, teaching experience, and instructional setting.

There was evidence in this study that instructional setting was the prime factor in explaining differences in residual achievement gain. Furthermore, student attitudes, teaching experience, and age showed a high level of covariation with the variable instructional setting, indicating that the instructional setting had an overriding effect on achievement.

#### Results of the Multiple Regression Analysis of Student Achievement

Multiple regression analysis was used in order to analyze the impact of student attitudes, age, and instructional setting on student achievement. The residual achievement gain scores were used as the dependent variable. The independent variables entered the regression model according to the degree of the relationship between them and the dependent variable. Of concern in the selection of independent variables for multiple regression analysis is the degree of relationship among the independent variables. Since the correlation between the two independent variables age and number of years of teaching experience was relatively high ( $r = .73$ ), only age was included in the model. Age was chosen because number of years of teaching experience

is explained to a certain extent by the age of the individual.

The minimum p-value of a variable to be considered significant was set at  $p=.05$ .

The regression models are presented in table form. Each table provides information on 1) the regression coefficient of each variable included in the model; 2) the F-value for all variables in the model; 3) the significance level (p-value) of the F-value; and 4) the squared coefficient of multiple determination ( $R^2$ ) which indicates the amount of variance in the dependent variable accounted for by the set of independent variables included in the model.

#### Regression Model I: Residual Achievement Gain and Instructional Setting

The coefficient of determination for residual achievement gain scores and instructional setting was  $R^2 = .297$ . An R-square of .297 indicates that almost 30% of the variation in residual achievement gain is accounted for by the variable instructional setting. The F-value of the model indicated that instructional setting contributed significantly to the explanation of the dependent variable ( $p=.01$ ).

#### Regression Model II: Residual Achievement Gain, Instructional Setting, and Posttest Attitude

Posttest attitude entered the regression model next. The coefficient of determination increased from  $R^2 = .297$  to  $R^2 = .322$ . The F-value ( $F = 1.05$ ) for the  $R^2$  change was not significant at the .05 level. The results indicate that posttest attitude additionally explained an insignificant proportion (2.1%) of the variation in residual achievement gain, after location being in the model. The overall model was significant at the .05 level. In this study posttest atti-

Table 11

Summary Table for Correlation Coefficients and Coefficients of Multiple Determination Between Pairs of the Variables Residual Achievement Gain and Age, Teaching Experience, Instructional Setting, and Posttest Attitude

Variables	Residual Achievement Gain	Instructional Setting	Attitude	Teaching Experience	Age
Instructional Setting	.55	---	---	---	---
Attitude	-.49	.81	---	---	---
Teaching Experience	-.47	.71	.47	---	---
Age	-.38	.68	.62	.73	---

Table 12

Regression Model I: Residual Achievement Gain and Instructional Setting

Variable	Regression Coefficient	F-value	p-value	R-Square
Constant (Reference Group)	4.605	4.368	.0112	.297
Instructional Setting I	-3.577			
Instructional Setting II	-7.451			
Instructional Setting III	-7.144			



tude did not contribute significantly to the explanation of the dependent variable, once location was in the model.

Table 13

Regression Model II: Residual Achievement Gain,  
Instructional Setting (IV 1-3), and Posttest Attitude (IV 4)

Variable	Regression Coefficient	F-Ratio	p-value	R-square
Constant (Reference Group)	7.493	3.44	.0201	.322
Instructional Setting I	-1.556			
Instructional Setting II	-5.332			
Instructional Setting III	-5.027			
Attitude (Post.)	- .0586			

Regression Model III: Residual Achievement Gain, Instructional Setting, Posttest Attitude, and Age

As fifth independent variable, age entered the regression model. A very slight change in the coefficient of determination resulted, increasing the amount of explained variance in residual achievement gain to 32.4%. The model was significant at the .05 level. However, since the change in R-square from model II to model III was insignificant, it was concluded that the variable age did not make a significant contribution to the explanation of the variation in residual achievement gain, once instructional setting and attitude were in the model.

In regression models II and III the variables posttest attitude

Table 14

Regression Model III: Residual Achievement Gain,  
Instructional Setting, Posttest Attitude, and Age

Variable	Regression Coefficient	F-Ratio	p-value	R-Square
Constant (Reference Group)	8.289	2.689	.040	.324
Instructional Setting I	-1.384			
Instructional Setting II	-5.144			
Instructional Setting III	-4.493			
Attitude (Post.)	- .043			
Age	- .052			

and age increased the explained variance slightly but not significantly. There was a tendency expressed by the regression coefficients IV and V for students who achieved higher scores than expected to be younger and, at the same time, have a more negative overall attitude. Inter-correlations among the variables instructional setting, attitude, and age probably account for the fact that attitude did not make a significant contribution to the explanation of residual and achievement gain. Instructional setting and attitude had a common variance of 65.8%; instructional setting and age shared 46.5% of the variation. The correlation coefficient between attitude and age was  $r = .62$ .

It was noted for all three regression models that attitude was inversely related to residual achievement gain. In an attempt to

investigate the reciprocal relationship between residual achievement gain and attitude, multiple regression analysis was repeated for model II substituting the variable attitude (which equals total posttest attitude scores) with attitude partscores.

Three regression models were tested. The first model included the independent variables instructional setting and attitude toward consumer studies. This particular set of independent variables yielded a coefficient of multiple determination of  $R^2 = .31$  ( $F = 3.25$ ,  $p = .025$ ). Attitude partscore I explained only an additional 1% of the variation in residual achievement gain, once location was in the model.  $R^2$  change was not significant at the .05 level. However, it was noted that attitude toward consumer studies was positively related to achievement ( $R = +.04$ ) in this model. That is, an increase in attitude toward consumer studies was associated with an increase in residual achievement gain.

In Model IIb, which already included location, attitude toward instructional television was introduced as fourth variable. Thirty-eight percent of the variation in residual achievement gain was explained by this model. The resulting change in R-square of about eight percent-points, however, was not significant at the .05 level. The regression coefficient V ( $R = -.29$ ) for the attitude partscore II (ITV) indicated that a change in attitude toward instructional television was inversely related to a change in residual achievement gain.

The last model included the independent variables instructional setting and perception of program efficiency. Thirty-three percent of

Table 15

Regression Model IIa: Residual Achievement Gain,  
Instructional Setting, and Attitude Toward Consumer Studies

Variable	Regression Coefficient	F-Ratio	p-value	R-Square
Constant (Reference Group)	3.551	3.25	.025	.31
Instructional Setting I	-3.907			
Instructional Setting II	-8.205			
Instructional Setting III	-8.351			
Attitude toward Consumer Studies	+ .039			

$$F_{(.05, 30)} = 4.17$$

Table 16

Regression Model IIb: Residual Achievement Gain,  
Instructional Setting, and Attitude  
Toward Instructional Television

Variable	Regression Coefficient	F-Ratio	p-value	R-Square
Constant (Reference Group)	9.248	4.39	.007	.38
Instructional Setting I	+2.001			
Instructional Setting II	-5.191			
Instructional Setting III	-3.907			
Attitude toward Instructional Television	- .292			

the criterion variable was explained by this model. Perception of the program efficiency again was found to be inversely related to residual achievement gain ( $R = -.253$ ) confirming previous findings of a reciprocal relationship between the two variables. The partitioning

Table 17

Regression Model IIc: Residual Achievement Gain,  
Instructional Setting, and Perceived Program Efficiency

Variable	Regression Coefficient	F-Ratio	p-value	R-Square
Constant (Reference Group)	5.944	3.605	.17	.332
Instructional Setting I	-1.783			
Instructional Setting II	-5.275			
Instructional Setting III	-5.162			
Perceived Program Efficiency	- .253			

of the independent variable posttest attitude into partscores for multiple regression analysis did not give further insight to the phenomenon of a reciprocal relationship between attitude and achievement. However, the findings indicated that attitude toward consumer studies was positively related to residual achievement gain, although only very slightly, whereas attitude toward instructional television and perceived program efficiency in this relationship was inverse.

It seems noteworthy that in models IIb and IIc, a greater propor-

tion of the variation in residual achievement gain was explained by the instructional television partscore than was by the total attitude score (Model II). Particularly in Model IIb, including the variables instructional setting and attitude toward instructional television, 38 percent of the variation in residual achievement gain was explained, hence, instructional setting and attitude toward instructional television seem to be the two factors in this study that best explain differences in residual achievement gain.

#### Summary of the Results of the Analysis of the Relationship Between Student Achievement and Selected Variables

From the analysis of the relationship between student achievement and the variables attitude, age, teaching experience, and instructional setting it was determined that a significant relationship existed between residual achievement gain and each variable. However, in multiple regression analysis of residual achievement gain the variables attitude and age no longer had a significant contribution to the dependent variable, once instructional setting was in the model. The phenomenon of a reciprocal relationship between achievement and attitudes could not be explained.

There was evidence in this study that instructional setting was the single best predictor for residual achievement gain. The high intercorrelation among instructional setting, attitude, age, and teaching experience could be an indication for an overriding effect of instructional setting on residual achievement gain.

Results of the Analysis of the Program Evaluation Questionnaire

Students' overall opinion about the effectiveness of the consumer studies program was assessed by a posttest questionnaire, comprised of seven questions. The course participants were asked to evaluate the organizational and management strategies employed in the program; the effectiveness of the instructional medium used; the program's potential to stimulate interest, and their perceived learning outcomes.

Student Evaluation of Course Organization

Thirty-one and one-half percent of the students rated the course as "well organized" or "fairly well organized." Almost half of the respondents, however, found the consumer studies program fairly poorly (17%) or very poorly organized (28.5%). Twenty-three percent were undecided or had no opinion about the course organization.

Table 18  
Overall Course Organization

Course Organization	Absolute Frequency	Relative Frequency (%)
Well organized	3	8.5
Fairly well organized	8	23.0
No opinion	8	23.0
Fairly poorly organized	6	17.0
Very poorly organized	10	28.5
Total	35	100.0



There is evidence in this study that a large proportion of the participants (45.5%) were dissatisfied with the organization of the course.

### Perceived Learning Outcomes

Students were asked to judge their comprehension and learning in the three course content areas. To the question: "Was the consumer studies course helpful to you to understand the basic concepts in consumer economics?", 80% of the students responded they found the program very helpful or somewhat helpful. One-fifth of the respondents indicated that the program had not contributed to a better understanding of the concepts in consumer economics (Table 19).

Table 19

#### Perceived Effectiveness of the Consumer Studies Program in Teaching Concepts in Consumer Economics

Concepts in Consumer Economics	Absolute Frequency	Relative Frequency (%)
Very helpful	6	17.0
Somewhat helpful	22	63.0
No opinion	0	0.0
Not very helpful	6	17.0
Not at all helpful	1	3.0
Total	35	100.0

The theoretical framework presented in the second content area, consumer behavior, was positively evaluated by 77% of the respondents.

Fourteen and 3/10 percent found the program very helpful, and 62.9% somewhat helpful to understand the basic concepts in consumer behavior. Only 11.5% of the students mentioned it was not very helpful to them (Table 20).

Table 20

Perceived Effectiveness of the Consumer Studies Program in Teaching Concepts in Consumer Behavior

Presentation of Concepts in Consumer Behavior	Absolute Frequency	Relative Frequency (%)
Very helpful	5	14.3
Somewhat helpful	22	62.9
No opinion	4	11.4
Not very helpful	4	11.4
Not at all helpful	0	0.0
Total	35	100.0

The presentation of topics in consumer protection was evaluated most positively by the students. Forty students (85.7%) indicated that the program was very helpful (34.3%) or somewhat helpful (51.4%) in understanding the major issues in this area of study. Four respondents (11.4%) indicated they had not gained a better understanding of the concepts in consumer protection, and one person (2.9%) had no opinion (Table 21).

Overall, the consumer studies program was evaluated very positively in terms of contributing to a better understanding of the concepts in

consumer behavior, consumer economics, and consumer protection.

Table 21

Perceived Effectiveness of the Consumer Studies  
Program in Teaching Concepts in Consumer Protection

Presentation of Concepts in Consumer Protection	Absolute Frequency	Relative Frequency (%)
Very helpful	12	34.3
Somewhat helpful	18	51.4
No opinion	1	2.9
Not very helpful	2	5.7
Not at all helpful	2	5.7
Total	35	100.0

Clarity of Presentations

When asked to evaluate the overall clarity of the TV presentations, one-third of the students mentioned they found the presentations clear (32.4%) and over 50 percent of the respondents felt that the presentations were not very clear (44%) or not clear at all (11.8%). Twelve percent had no opinion. Hence, the majority of the students indicated dissatisfaction with the clarity of the television presentations (Table 22).

Stimulation of Interest

Students were asked to indicate whether the course stimulated their interest in the area of consumer studies. Forty percent of the

students responded positively to this question. Eighteen respondents (51.4%) indicated that the course had stimulated their interest not very much or not at all (Table 23).

Table 22  
Evaluation of Clarity of TV Presentations

Clarity of Presentations	Absolute Frequency	Relative Frequency (%)
Very clear	0	0.0
Clear	11	32.4
No opinion	4	11.8
Not very clear	15	44.1
Not at all clear	4	11.8
Total	35	100.0

Student Evaluation of the Effectiveness of Instructional Television as a Teaching Technique for Consumer Studies

Students were asked to indicate their opinion about the effectiveness of instructional television employed as a teaching technique in this course. Eighteen respondents (51.4%) were satisfied with this teaching technique, three (8.6%) had no opinion, and fourteen students (or 40%) felt it was unsatisfactory or very unsatisfactory (Table 24).

Table 23  
Stimulation of Interest

Stimulation of Interest	Absolute Frequency	Relative Frequency (%)
Very much	1	2.9
Somewhat	13	37.1
No opinion	3	8.6
Not very much	10	28.5
Not at all	8	22.9
Total	35	100.0

Table 24  
Evaluation of the Overall Effectiveness of ITV Used  
as a Teaching Technique in the Consumer Studies Program

ITV as a Teaching Technique for Consumer Studies	Absolute Frequency	Relative Frequency (%)
Very satisfactory	0	0.0
Satisfactory	18	51.4
No opinion	3	8.6
Unsatisfactory	8	22.9
Very unsatisfactory	6	17.1
Total	35	100.0

Summary of the Results of the Program Evaluation Questionnaire

Approximately one-third of the students evaluated the program as "well organized" or "fairly well organized," whereas almost half of the respondents expressed dissatisfaction with the overall program organization. When asked to evaluate the effectiveness of the consumer studies program the majority of the respondents indicated that the course was helpful in better understanding concepts in consumer studies, particularly in the area of consumer protection. The clarity of the presentations was rated less favorably by the respondents: 56 percent of the respondents evaluated the presentations as not very clear or not at all clear. Instructional television as a teaching technique for consumer studies was evaluated as satisfactory by half of the respondents; and as unsatisfactory by 40 percent of the respondents. The same number of students indicated that the program had stimulated their interest in the area of consumer studies, whereas, approximately half of the respondents did not indicate a stimulation or interest.

## CHAPTER FIVE

## SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of this study was the development and pilot testing of a model for assessing the effectiveness of an innovative teacher in-service program in consumer studies. The major objectives were to develop a theoretical framework that identified the important characteristics and components of innovative teacher education programs, as well as the interrelationships among these components. Using the proposed model, an evaluation instrument was developed to assess the program outcomes and hence, the effectiveness of program from the learners' perspective.

The data used in the statistical analysis were collected in a pretest-posttest one-group design. The preprogram assessment provided information about the personal characteristics of the participants, their entry level of knowledge in the area of consumer studies, and their attitudes and expectations toward the innovative in-service program. The postprogram assessment measured participants achieved level of knowledge in the area of consumer studies after completion of all course requirements, their attitudes toward the program and evaluation of organizational, delivery, and efficiency aspects of the program.

Fifty-one participants completed pre- and post-achievement tests and were, therefore, included in the analysis of the program effectiveness. Thirty-five participants responded to all parts of the research instrument and were, therefore, basis for further analyses.

The mean age of the participants was 35. Four of the respondents were male, thirty-one were female. The average number of years of teaching experience was 7.3, the mode being one year. For 60 percent of the respondents, participation in the consumer studies program was required in order to satisfy teaching credential requirements. Ten respondents had previously had experience with television instruction. The 35 subjects included in the extensive analysis participated in the program at four different locations, each location representing a different instructional setting.

The analysis of the data included three major parts: 1) the analysis of student achievement, 2) the analysis of student attitudes, and 3) the analysis of the relationship between achievement, attitudes, age, teaching experience, and instructional setting.

A highly significant difference in student overall achievement on the Consumer Studies Achievement Test between pretest and posttest was found using t-test for correlated samples. The pretest mean achievement score of the 51 examinees converted to 59.3 percent correct, the posttest mean achievement score to 84.3 percent correct on the 75-item test. In order to determine whether the program was equally effective in the three content areas (consumer economics, consumer behavior, consumer protection), the total achievement scores were partitioned accordingly. The highest partial mean score was for consumer economics, the lowest partial mean score for consumer protection. The differences among the three partial mean scores were significant ( $p < .05$ ). Achievement gain scores were computed and partitioned into three partial mean achievement gain scores. Scheffé's test



yielded a significant F-ratio for the differences among the means. The highest mean achievement gain score occurred in consumer protection, the section with the lowest pretest mean achievement score. The lowest mean achievement gain score was measured for consumer behavior.

Participants' attitude concerning the consumer studies program was assessed by analyzing 19 Likert-type attitude scales and four conceptual statements using semantic differential technique. Attitude scores were developed. Students' overall mean attitude score toward the consumer studies program prior to participation was higher than their overall mean score assessed after participation in the program. When the total attitude score was partitioned into three components - a consumer studies attitude score, an instructional television attitude score, and a program efficiency perception score - it was found that students assigned most favorable values to statements pertaining to the subject-matter, and least favorable values to statements pertaining to the instructional medium. From pretest to posttest, students' attitudes toward the subject-matter changed significantly ( $p < .05$ ) from a positive to an almost neutral attitude; and students' attitude toward the instructional medium changed significantly ( $p < .05$ ) from a neutral to a slightly negative attitude. Prior to participation in the program, students expected the program to be somewhat efficient. After participation, students' perception mean score indicated that they perceived the program as slightly inefficient.

The results of the analysis of the semantic differential supported these findings. Comparison of pretest and posttest mean profiles

indicated a change in student attitudes concerning consumer studies and instructional television in a negative direction, that is, toward a less positive postprogram attitude. The discrepancy between mean profiles and modal profile provided some indication for the wide response dispersion within the group of subjects. The conceptual statement of primary interest was: teacher training by television. The pretest mean profile disclosed that students' perception of teacher training by television was slightly negative, before even being exposed to the televised consumer studies course. After program completion, respondents perceived teacher training by television as slightly worthless, somewhat weak, dull and passive.

The third major part of the analysis included the investigation of the relationship between student achievement and attitudes, age, teaching experience, and instructional setting. A significant relationship was found for residual achievement gain and each of the variables individually. Approximately 30 percent of the variation in residual achievement gain was accounted for by the variable instructional setting. Student attitude was inversely related to residual achievement gain, indicating that a positive student attitude was related to a lower than expected achievement gain. However, in multiple regression analysis of residual achievement gain the variable attitude did not contribute significantly to the explanation of the variation in the dependent variable, once the variable instructional setting was in the model. There was evidence in this study that instructional setting was the single best predictor for residual achievement gain. The high intercorrelation among instructional

setting, attitude, age, and teaching experience led to the conclusion that instructional setting had an overriding effect on residual achievement gain.

In an attempt to examine the reciprocal relationship between residual achievement gain and attitude, the variable overall attitude was substituted by attitude partscores. It was found that attitudes toward consumer studies were positively related to residual achievement gain whereas, the other two attitude partscores were inversely related to the dependent variable.

In the final step of the data analysis student evaluation of the program was analyzed. The majority of the respondents expressed dissatisfaction with the overall organization of the program. At the same time, however, they indicated that the course was helpful in better understanding the concepts in consumer studies. Fifty percent of the respondents evaluated television as a teaching technique for a course in consumer studies as satisfactory, and 40 percent of the participants indicated that the consumer studies program had stimulated their interest in this subject-matter area.

## CHAPTER FIVE

Conclusions and Recommendations

The analysis of student pretest and posttest performance on the Consumer Studies Achievement Test enables the investigator to conclude that the innovative in-service program was effective. Students' level of knowledge in the subject-matter area was significantly higher after completion of the program than it was prior to program participation. Although students achieved level of knowledge was different for the three content areas it cannot be concluded that the program was unequally effective for the three areas: consumer economics, consumer behavior, and/or consumer protection. While students level of knowledge in the area of consumer studies increased, their attitudes concerning the program became more negative. The reciprocal relationships between residual achievement gain scores and attitude scores was unexpected and is an indication that learning is not necessarily associated with a positive learner attitude. In addition it can be concluded that the instructional setting was a prime factor in explaining differences in residual achievement gain.

Since instructional setting was highly correlated with student attitude and age, the latter two variables did not contribute significantly to the further explanation of the variation in residual achievement gain. The covariance in the set of selected variables could indicate an overriding effect of the variable instructional setting.

The following are recommendations for future study:

1) the instructional setting, identified in this study as the primary factor in explaining differences in achievement, needs to be included in the assessment of instructional variables.

2) In any initial evaluation of an innovative program the research instrument should be personally administered by the primary investigator in order to assure control of the research design.

3) The information obtained by evaluating outcomes of innovative program should be applied to revise and improve the educational package in terms of organizational, managerial, and delivery strategies employed in the program.

Based on these findings and recommendations the model was revised. The factors inherent in the instructional setting needed to be explicitly identified in the model. The revised model for evaluating outcomes of innovative teacher in-service program is identified by the structure in Figure 7. A comparison of both models (Figure 6 and Figure 7) reveals that the revised model identifies components within the educational package as well as within the learning environment. The assessment of these components could help the researcher to gain a better understanding of the instructional setting. Furthermore, the assessment of managerial factors, such as the availability of course materials as well as the assessment of the actual course procedure would help to interpret program evaluation outcomes.

The revised model provides a basis for developing a revised research instrument to be used in future studies.

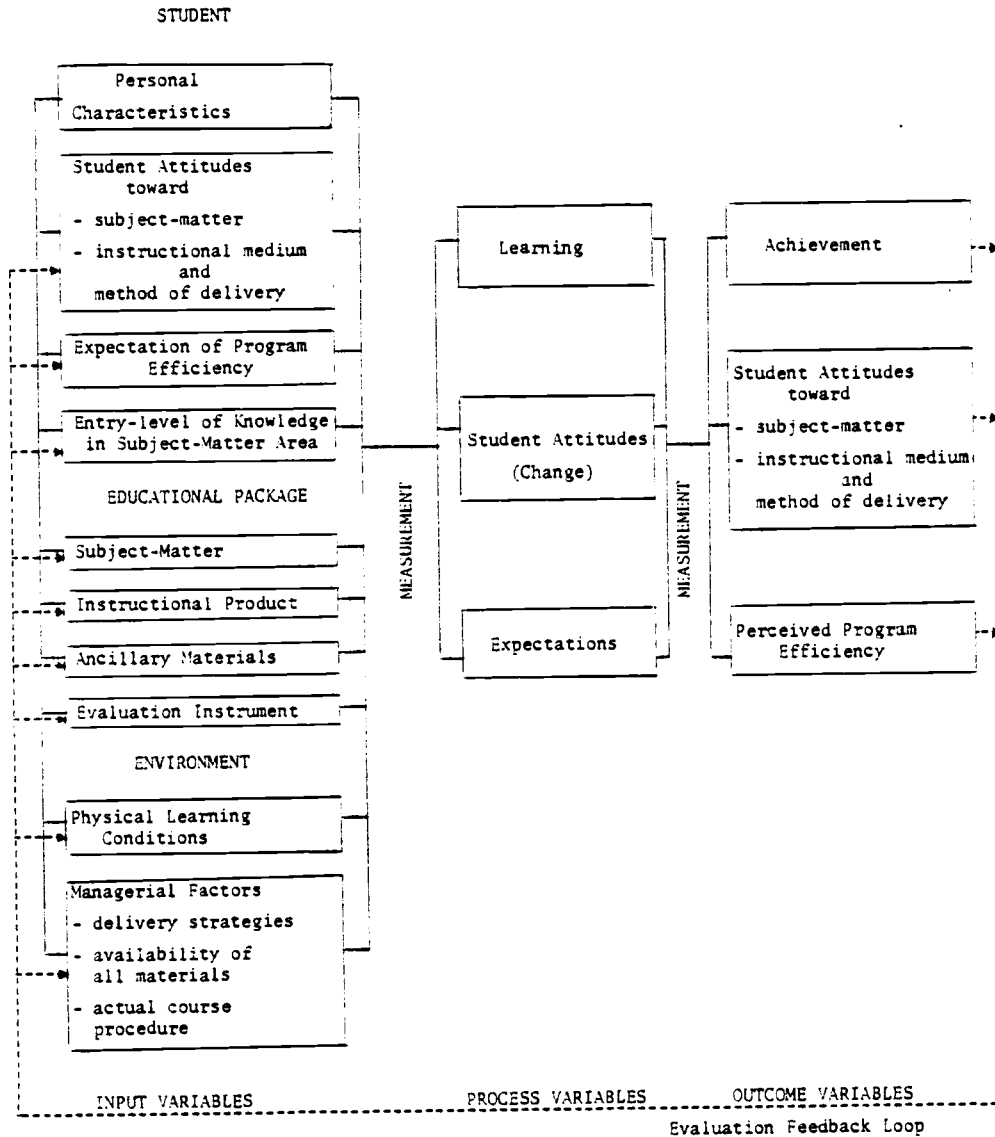


Figure 7. Revised systems model for evaluating outcomes of innovative teacher in-service programs from a student perspective.

## REFERENCES

- Andrews, J. J. "High school algebra via television." In: Mathematics Teacher, 1960, Vol. 53, p. 376-380.
- Arena, J. E. "How to individualize in-service training." In: Journal of Educational Technology, November 1974, p. 43-45.
- Banathy, B. A. Instructional Systems, Belmont, California: Fearon-Pitman Publishers, Inc., 1968.
- Becker, S. L. "The meaning of ITV: A study of student expectations." In: NAEB Journal, 1963, Vol. 22, p. 25-31.
- Bloom, B. et.al. Taxonomy of Educational Objectives: Cognitive Domain, New York: David McKay Company, 1956.
- Chu, G. C. and Schramm, W. Learning from Television What the Research Says, Washington, D.C., The National Society of Professionals in Telecommunications, 1967.
- Cronbach L. J. and Furby, L. "How we should measure 'change' - or should we?" Psychological Bulletin, 1970, p. 68-80.
- Cruickshank, D. R., Lorish C., Thompson, L. "What we think we know about in-service education." In: Journal of Teacher Education, Vol. XXX, Number 7, 1979, p. 27-32.
- Encyclopedia of Educational Evaluation, Anderson, S. B., S. Ball, R. T. Murphy and Associates. "Concepts and Techniques for Evaluating Education and Training Programs," San Francisco, Washington, London: Jossey-Bass Publishers, 1975.
- Ferguson, G. A. Statistical Analyses in Psychology and Education, New York: McGraw Hill, 1971
- Fishbein, M. (Ed.). Readings in Attitude Theory and Measurement, New York: Wiley & Sons, Inc., 1967.
- Guilford, J. P. and Fruchter, B. Fundamental Statistics in Psychology and Education, New York: McGraw Hill, 1978.
- Instructional Innovator, "What's new in video," Feb. 1981, p. 8-11.
- Kandaswamy, Subramaniam. "Evaluation of Instructional Materials: A Synthesis of Models and Methods." In: Educational Technology, June 1980, p. 19-26.

- Kemp, Jerrold E. Instructional Design. A Plan for Unit and Course Development, 2nd edition, Belmont, California: Fearon-Pitman Publishers, 1977.
- \_\_\_\_\_. "Evaluating Program Outcomes." In: Audiovisual Instruction, November 1978, Vol. 23, p. 42-43.
- Likert. A Technique for the Measurement of Attitudes, 1932.
- Luke, R. A. Teacher-Centered In-Service Education: Planning and Products, Washington, D.C.: National Education Association, 1980.
- Neale, J. M. and R. Liebert. Science and Behavior, 2nd edition, Englewood Cliffs, New Jersey: Prentice Hall, Inc., 1980.
- Neter, J. and W. Wasserman. Applied Linear Statistical Models, Homewood, Illinois: Richard D. Irvin, Inc., 1974.
- Nie, N., Hull, C. H., Jenkins, J. G., Steinbrenner, K., Bent, D. H. Statistical Package for the Social Sciences, 2nd edition, New York: McGraw Hill, Inc., 1975.
- Nicholson, A., Joyce, B. R., Parker, D. and Waterman, F. T. The literature on inservice education: An analytic review, ISTE, Report III. Palo Alto, California, 1976.
- Ohlich, D. C. "Establishing effective in-service programs by taking... AAIM." In: Clearing House, September 1979, Vol. 53, p. 53-5.
- Olson, A. L. "Can we individualize inservice education of teachers?" In: Journal of Educational Technology, November 1974, p. 41-42.
- Osgood, Charles E., Suci, Tannenbaum. The Measurement of Meaning, 9th edition, Urbana, Chicago, London: University of Illinois Press, 1975.
- Pankratz, R. S. "Surviving the in-service revolution: A proactive stance." In: Journal of Teacher Education, January-February 1979, Vol. XXX, Number 1, p. 20-22.
- Reigeluth, C. M. and Merrill, M. D. "Classes of instructional variables." In: Journal of Educational Technology, March 1979, p. 5-24.
- Root, Jon. "The Effectiveness of Student Involvement in the Instructional Television Production of a University Level General Biology Course Taught Partially with Television." Unpublished Masters Thesis, University of Oregon, 1972.



- Root, Jon and Gall, M. D. "Interactions between student achievement orientation, locus of control and two methods of college instruction: auto-tutorial and conventional." In: Educational Communications and Technology, Fall 1981, Vol. 29, Number 3, p. 139-146.
- Rowntree, D. Educational Technology in Curriculum Development, London, Harper & Row, 1974.
- Ryor, J., Shanker, A., Sandefur, J. T. "Three perspectives on in-service education." In: Journal of Teacher Education, January-February, 1979, Vol. XXX, Number 1, p. 13-16.
- Saettler, D. A History of Instructional Technology, New York: McGraw Hill, 1968.
- Scriven, M. The Methodology, AERA Monograph Series on Curriculum Evaluation, Number 1, Chicago: Rand McNally, 1967.
- Shanker, A., Ryor, J., Sandefur, J. T. "Three perspective on in-service education." In: Journal of Teacher Education, January-February, 1979, Vol. XXX, Number 1, p. 13-16.
- ✓ Sherif, Carolyn W., Sherif, M., Nebergall, R. E. Attitude and Attitude Change, Philadelphia: W. B. Saunders Company, 1965.
- ✓ Simonson, M. R. "Attitude change and achievement: Dissonance theory in education." In: The Journal of Educational Research, 1974, p. 163-168.
- Simonson, M. R. "Liking and learning go hand in hand." In: Audio-visual Instruction, March 1978, Vol. 23, p. 26-29.
- Stufflebeam, D. L. (Ed.). Educational Evaluation and Decision-Making, Itasca, Illinois: F. E. Peacock, 1971.
- Turney and Robb. Statistical Methods for Behavioral Research, New York: Intext Educational Publishers, 1973.
- Thiagarajan, Sivasailam. "The loneliness of the long-distance learner." In: Audiovisual Instruction, 1978, Vol. 23, p. 22 + 39.
- Westley, B. and Jacobson, H. K. "Instructional television and student attitudes toward teacher, course, and medium." In: AV Communication Review 11(1963), p. 47-60.
- Whiting, G. C. "Correlates of achievement, attitude, and personality among students taught by closed circuit television." Unpublished Masters Thesis, Salt Lake City, Utah, University of Utah, 1961.
- Young, Elizabeth. "New technologies for colleges and university." In: EDUCOM Bulletin, Winter 1980, p. 8-11.

## APPENDIX

Instructions for the Use of the Op-scan Answer Sheet

1. Print your name at the top of the name grid in the upper right corner of the op-scan answer sheet.

Fill in the appropriate bubbles on the name grid.

2. Indicate your social security number in the heading of the grid in the lower right hand corner of the op-scan answer sheet.

Fill in the appropriate bubbles on the social security number grid.

3. PUT YOUR SOCIAL SECURITY NUMBER ON YOUR QUESTIONNAIRE (not on the test).

4. On the upper right hand corner of the questionnaire you will find a questionnaire number. Put this number on the upper left section of the op-scan sheet following the word "class".

5. Now begin to answer the PRETEST-questions. Mark the appropriate bubbles on the answer sheet according to your right answers. Note that there is one best answer for each question.

Questionnaire

No. \_\_\_\_\_

Social Security Number: .....

1. Indicate your opinion of the overall effectiveness of "instant replay" as a teaching technique.

- (1) Very satisfactory
- (2) Satisfactory
- (3) Neither satisfactory nor unsatisfactory
- (4)** Unsatisfactory
- (5) Very unsatisfactory

2. Was the course helpful to you to understand the basic concepts in consumer economics?

- (1) Very helpful
- (2) Somewhat helpful
- (3) No opinion
- (4) Not very helpful
- (5) Not at all helpful

3. Was the course helpful to you to understand the basic concepts in consumer behavior?

- (1) Very helpful
- (2)** Somewhat helpful
- (3) No opinion
- (4) Not very helpful
- (5) Not at all helpful

4. Was the course helpful to you to understand the basic concepts in consumer protection?
- (1) Very helpful
  - (2) Somewhat helpful
  - (3) No opinion
  - (4) Not very helpful
  - (5) Not at all helpful
5. Evaluate the organization of the course.
- (1) Well organized
  - (2) Fairly well organized
  - (3) No opinion
  - (4) Fairly poorly organized
  - (5) Very poorly organized
6. Evaluate the overall clarity of the TV presentations.
- (1) Very clear
  - (2) Clear
  - (3) No opinion
  - (4) Not very clear
  - (5) Not at all clear
7. Did the course stimulate your interest in the area of consumer studies?
- (1) Very much
  - (2) Somewhat
  - (3) No opinion
  - (4) Not very much
  - (5) Not at all

Questionnaire

No. \_\_\_\_\_

Social Security Number: .....

In addition to the pretest we ask you to respond to the following questions and statements. This won't take you longer than fifteen minutes. The questionnaire is not part of the pretest you just completed. We assure you absolute anonymity.

1.) For what reason are you taking this course?

- part of my undergraduate general studies requirements
- to satisfy teaching credential requirements
- to prepare for teaching a class in consumer economics
- personal information and/or interest
- other: \_\_\_\_\_

2.) Do you currently hold a teaching certificate?

- no (go to question 3)
- yes

If yes, in which state(s)?

\_\_\_\_\_

3.) At what grade level are you currently teaching?

\_\_\_\_\_

- 4.) How many years of teaching experience do you have?  
\_\_\_\_\_ years.
- 5.) What is your major endorsement? \_\_\_\_\_  
your minor endorsement? \_\_\_\_\_
- 6.) Are you           () male?  
                          () female?
- 7.) What is your date of birth? \_\_\_\_\_  
  (year only)
- 8.) Have you ever taught a consumer economics class before?  
  
      () no  
  
      () yes
- 9.) Do you ever expect to integrate material from this con-  
sumer studies course into your classroom instruction?  
  
      () yes  
      () no, never  
      () I don't know
- 10.) Have you ever had a course or courses before taught by  
television?  
  
      () yes  
      () no

On the following pages you will find statements pertaining to how you feel about portions of this course. Each question is followed by a series of scales on which you are to place a mark (X) at the point best fitting the description of how you feel about the statement as it pertains to this course.

For Example: School

valuable \_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_ worthless

If you feel that the concept "School" is very closely related to one end of the scale, you should place your check-mark as follows:

valuable X:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_ worthless

or:

valuable \_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:X worthless

If you feel that the concept "School" is quite closely related to one or the other end of the scale - but not extremely - you should place your check-mark as follows:

valuable \_\_\_: X :\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_ worthless

or:

valuable \_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:X:\_\_\_ worthless

If the concept seems only slightly related to one side as opposed to the other side - but is not neutral - then you should check as follows:

valuable \_\_\_:\_\_\_: X :\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_ worthless

or:

valuable \_\_\_:\_\_\_:\_\_\_:\_\_\_: X :\_\_\_:\_\_\_:\_\_\_ worthless



If you consider the concept to be neutral on the scale, both sides equally associated with the concept, or if the scale is completely irrelevant, unrelated to the concept, then you should place your check-mark in the middle space:

valuable \_\_\_:\_\_\_:\_\_\_: X :\_\_\_:\_\_\_:\_\_\_ worthless

In responding to the following statements, please make your judgement on the basis of what these things mean to you. Make each item a separate and independent judgement.

Respond to all statements and all scales as quickly as possible. It is your first impression, the immediate "feelings" about the items that we are interested in.

You are to rate the concept on each of these scales in order. Please do not omit any scales.

NOW TURN THE PAGE AND BEGIN.

## Consumer Studies

good \_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_ bad  
clear \_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_ hazy  
hard \_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_ soft  
weak \_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_ strong  
dull \_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_ sharp  
valuable \_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_ worthless  
deep \_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_ shallow  
active \_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_ passive  
simple \_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_ complex  
tense \_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_ relaxed  
fast \_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_ slow

## Television as a teaching tool

good \_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_ bad  
clear \_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_ hazy  
hard \_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_ soft  
weak \_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_ strong  
dull \_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_ sharp  
valuable \_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_ worthless  
deep \_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_ shallow  
active \_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_ passive  
simple \_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_ complex  
tense \_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_ relaxed  
fast \_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_ slow

## Teacher Training by Television

good	___:___:___:___:___:___:___	bad
clear	___:___:___:___:___:___:___	hazy
hard	___:___:___:___:___:___:___	soft
weak	___:___:___:___:___:___:___	strong
dull	___:___:___:___:___:___:___	sharp
valuable	___:___:___:___:___:___:___	worthless
deep	___:___:___:___:___:___:___	shallow
active	___:___:___:___:___:___:___	passive
simple	___:___:___:___:___:___:___	complex
tense	___:___:___:___:___:___:___	relaxed
fast	___:___:___:___:___:___:___	slow

## Learning by Television

good \_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_ bad  
clear \_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_ hazy  
hard \_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_ soft  
weak \_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_ strong  
dull \_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_ sharp  
valuable \_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_ worthless  
deep \_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_ shallow  
active \_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_ passive  
simple \_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_ complex  
tense \_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_ relaxed  
fast \_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_ slow

On the next 4 pages you will be given 19 statements. Following each statement there will be a rating scale, going from "Completely disagree" to "Completely agree". You are asked to mark one of the seven scale steps according to how you feel about the statement.

For example: "To be a good teacher is very important to me."

Completely disagree	____ : ____ : ____ : ____ : ____ : ____ : <u>X</u>	Completely agree
	1    2    3    4    5    6    7	

The seven scale steps are defined as:

1. Completely disagree
2. Mostly disagree
3. Slightly disagree
4. Neither disagree nor agree
5. Slightly agree
6. Mostly agree
7. Completely agree

In the example above, the scale step number 7 is marked. This indicates that the individual completely agrees to the statement; it is very important for him or her to be a good teacher.

Please read the statements thoroughly. Respond to all statements.

1. Consumer Studies is an interesting subject.

Completely disagree	____ : ____ : ____ : ____ : ____ : ____ : ____	Completely agree
	1    2    3    4    5    6    7	

2. This class is a convenient way to satisfy the credential requirement for a class in consumer studies.

Completely disagree	____ : ____ : ____ : ____ : ____ : ____ : ____	Completely agree
	1    2    3    4    5    6    7	

3. All teachers need to be knowledgeable in the area of consumer economics, consumer behavior, and consumer protection.

Completely disagree	____ : ____ : ____ : ____ : ____ : ____ : ____ 1     2     3     4     5     6     7	Completely agree
---------------------	---	------------------

4. Videotape programs are a good alternative to live instruction.

Completely disagree	____ : ____ : ____ : ____ : ____ : ____ : ____ 1     2     3     4     5     6     7	Completely agree
---------------------	---	------------------

5. Consumer studies is not applicable within the elementary school curriculum.

Completely disagree	____ : ____ : ____ : ____ : ____ : ____ : ____ 1     2     3     4     5     6     7	Completely agree
---------------------	---	------------------

6. Consumer studies is not applicable within the middle school curriculum.

Completely disagree	____ : ____ : ____ : ____ : ____ : ____ : ____ 1     2     3     4     5     6     7	Completely agree
---------------------	---	------------------

7. Consumer studies is not applicable within the secondary school curriculum.

Completely disagree	____ : ____ : ____ : ____ : ____ : ____ : ____ 1     2     3     4     5     6     7	Completely agree
---------------------	---	------------------





14. Consumer Studies should be part of the general studies requirements.

Completely disagree      \_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_:  
 1      2      3      4      5      6      7      Completely agree

15. Students will be able to find an answer to their questions even without an instructor in the classroom.

Completely disagree      \_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_:  
 1      2      3      4      5      6      7      Completely agree

16. In terms of dollar cost for satisfying the credential requirement for a class in consumer studies this class is expensive.

Completely disagree      \_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_:  
 1      2      3      4      5      6      7      Completely agree

17. The time cost involved in satisfying the credential requirement for a class in consumer studies is low for this particular class.

Completely disagree      \_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_:  
 1      2      3      4      5      6      7      Completely agree

18. The flexibility of a videotape program and the highly individualized , self-paced learning by television makes this instructional tool superior to live instruction.

Completely disagree      \_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_:  
 1      2      3      4      5      6      7      Completely agree

19. My knowledge in consumer economics, consumer behavior,  
and consumer protection is sufficient.

Completely disagree	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	_____	Completely agree
	1		2		3		4		5		6		7	

Thank you for your participation.

---

Statements 1,3,4,6,7,9,11,14, and 19 refer to the subject-matter(consumer studies).

Statements 4,8,10,12,13,15, and 18 refer to the instrtional medium.

Statements 2,16, and 17 refer to the perception of the program efficiency.