THE EFFECT OF VICARIOUS PARTIAL REINFORCEMENT
UPON CHILDREN'S USE OF SELF-VERBALIZATION IN
DECISIONS REGARDING TELEVISION VIEWING

By

Sandra Shapiro Korzenny

A DISSERTATION

Submitted to

Michigan State University

in partial fulfillment of the requirements

for the degree of

DOCTOR OF PHILOSOPHY

Department of Secondary Education and Curriculum

1980

ABSTRACT

THE EFFECT OF VICARIOUS PARTIAL REINFORCEMENT
UPON CHILDREN'S USE OF SELF-VERBALIZATION IN
DECISIONS REGARDING TELEVISION VIEWING

By

Sandra Shapiro Korzenny

Researchers have concluded that there may be a causal relationship
between viewing of televised violence and later aggressive behavior.
As a result of these conclusions, the present study attempted to
address the issue of reducing the number of hours children view tele-
vision.

Research suggests that self-verbalization may be an effective
method of bringing behavior under one's own control. Self-verbaliza-
tion involves talking to oneself, leading to a conscious decision
to behave in a certain manner. Habitual, maladaptive behaviors such
as passive television viewing may be brought under one's control
if they are preceded by deliberate cognitions. These thoughts must
involve an examination of reasons for engaging in such behavior as
well as of the potential consequences of doing so.

The ability to produce self-guiding speech appears to be the
result of a developmental progression during which one's behavior
is first controlled by an adult's speech and actions, and ultimately,
by one's own covert speech. This progression suggests that modeling
may be an effective method of teaching self-verbalization. The obser-
ver is exposed to a model who self-verbalizes while performing the
desired behavior, the observer then overtly rehearses the behavior,

and, later, covertly practices it.

It has been widely accepted that modeled behavior which is accompanied by positive reinforcement has a greater likelihood of being imitated. Recent research, however, suggests that observers who have viewed a model who is consistently, positively rewarded for a certain behavior will become frustrated if their own attempts at the behavior do not result in the same positive rewards. There is some evidence that vicarious partial positive reinforcement may be a more effective means of producing imitative behavior which is persistent.

The present study attempted to investigate both immediate and delayed effects of varying the percentage of vicarious reinforcement upon use of self-verbalization, preference for leisure time activities, number of hours spent in certain leisure time activities, and preference for certain types of programming.

Two one week, 45 minutes per day, instructional units were designed by the researcher. They were equivalent, except for the variation in the percentage of vicarious reinforcement. Each unit consisted of: 1) a slide tape presentation of a model self-verbalizing before engaging in a leisure time activity other than television viewing; 2) activities and games which required the observers to self-verbalize; 3) workbooks which required the observers to write personal goals and select activities which would assist them in reaching those goals.

There were two treatment groups and one control group in the study. Subjects in the first treatment were exposed to a model who

experienced positive consequences in four situations in which she decided to forego television viewing in favor of an alternative activity. Subjects in the second treatment group viewed the same model experience positive consequences in two situations and negative consequences in two other situations. The control group received only pre and posttests.

While actual use of self-verbalization did not increase for either group, stated preference for the alternative activities increased significantly for both treatment groups. The number of hours spent viewing television decreased significantly for all groups, perhaps due to seasonal changes unrelated to the study. The frequency of stated preference for pro-social programming increased significantly for both treatment groups.

Thus, while recall from the units did occur, subjects did not significantly change actual behavior regarding use of self-verbalization or use of leisure time. One hundred percent (100%) vicarious positive reinforcement was found to be a more effective strategy in achieving both immediate and enduring stated preference for alternative activities but did not translate into a significant difference in actual viewing.

DEDICATION

To my daughter Rachel, who one day will understand,

and to my parents, for understanding now.

ACKNOWLEDGMENTS

TABLE OF CONTENTS

LIST OF TABLES

LIST OF TABLES (Continued)

LIST OF FIGURES

Chapter I

INTRODUCTION

The Problem

This section provides an overview of the present study.

In gaining greater self-control over our lives we frequently must learn to be more reflective about our behaviors and their consequences. We must often ask ourselves, "If I engage in a certain behavior, what will be the short and long-term consequences? Are there alternative behaviors which may be more socially acceptable or contribute toward a 'healthier' life, even though they may not be immediately satisfying?" Individuals seeking greater self-control replace maladaptive behaviors with such socially acceptable behaviors. Illustrations may be seen in people who learn to eat less in order to lose weight or learn to stop smoking. Self-control may also be seen in young children who learn to solve conflicts verbally rather than physically. Quite often, the maladaptive behaviors, such as eating and smoking or physically hurting another person, are immediately gratifying, but, in the long run, harmful in one way or another. If an individual can see that an immediately gratifying behavior may have ultimately harmful consequences, then she/he may behave in a different manner. Learning to be more _reflective_ about one's actions by analyzing short and long-term consequences of various

1

alternative behaviors may be a step towards gaining greater self-control.

The present study proposes to examine one method of teaching children to have greater self-control over their lives, specifically, to be more reflective about their use of free time which would result in decreasing the number of hours spent passively viewing television programming which does not contribute towards their attainment of goals.

The method to be examined in the present study involves "self-verbalization." An example of self-verbalization would be that before engaging in a certain activity, an individual asks himself/herself such questions as "If I watch TV, what will I gain? If I do my homework, what will I gain? Which is better for me now? In the long run?"

Often such cognitive self-control strategies as self-verbalization are learned by observing others "model" them successfully in a structured environment, such as in a clinical setting or in the classroom. The "learner" will then "test out" the behavior at a later time and compare his/her results with those experienced by the model. If the learner has been as successful as the model, all is well. If not, however, the learner may become frustrated and "give up" because she/he expected better results.

It would seem reasonable, then, to investigate, in a structured classroom setting, whether it might be effective for the learner to observe a model in a number of situations attempting to be more reflective about use of free time. In addition, the model would evaluate consequences of various ways in which she/he might spend

her/his free time and choose to engage in an alternative activity
to television. Following this selection, she/he would experience
not only positive consequences but negative ones as well for that
decision. Then when and if the learner <u>fails</u> in his/her initial
attempts to elicit positive consequences for selecting an activity
through being reflective, she/he may have a greater desire to try
again, having observed the model both fail and then "try again."

Thus, is it more effective (in achieving an observer's adoption
of a modeled behavior) to present the observer with a model who
elicits both negative and positive consequences for performing the
behavior? Will this condition create a greater initial desire in
the observer to engage in, as well as later to persist in the modeled
behavior? These are the questions addressed in the present study.

Background

The question of the effects of televised violence upon children
has been the subject of numerous research efforts over the past
several years. Although the results of these investigations have
not settled this controversy, there is concern that children are
learning and imitating behaviors which may be harmful to themselves
or others.

One reason for this concern about the potential negative effects
of televised violence is the pervasiveness of television in our
society. In a recent study by Nielsen (1976) it was found that
only three percent of all households own no television. Further-
more, 43% own two or more sets and 70% of American families own
color sets.

Young children are avid television viewers. Schram, Lyle, and Parker (1961) found that over one-third of the children interviewed made "regular use" of television by age three and over 90% were regular viewers by age six. Lyle and Hoffman (1972) reported that first graders watch slightly less than 24 hours per week; sixth graders, about 30 hours, and 10th graders, 28 hours. Nielsen (1976) reported that children from the ages of two through 11 watch an average of 26 hours per week.

The programs that they are viewing cover the entire range of available hours - from weekday mornings to evening prime time to Saturday and Sunday mornings. Nielsen (1975) reports the following data: (a) 16% of the total viewing time for children two through 11 is on Saturday and Sunday mornings; (b) for children two through five, 30% occurs on weekday mornings and afternoons before 4:30. Then, 4:30 - 7:30 makes up 27% of their viewing time, while 7:30 - 11:00 accounts for 24%; (c) for the older children (over five), prime time accounts for 36%, and late afternoon and early evening account for 30%.

Thus, it is quite clear that young viewers are spending a substantial number of their non-school hours in front of the television. What impact does this have upon their behavior? Are children predisposed towards imitation of what they view? In a review of the literature in this area, Atkin, Murray and Nayman (1971) report the following:

> More than 20 published experiments show that children are capable of imitating filmed violence, although a variety of situational and personal factors combine with exposure to determine actual imitation. Another 30 published experiments indicate that violence viewing increases the likelihood of subsequent aggressive behavior, at least in the laboratory context (p. 23).

In 1972, the Surgeon-General's Committee on Televised Violence
produced five volumnes of research reports which "held that the con-
vergence of evidence was sufficient to permit a qualified conclusion
indicating a causal relationship between extensive viewing of violence
and later aggressive behavior.... This conclusion without qualifi-
cation is endorsed by a number of highly respected researchers...."
(in Rubenstein, 1978, p. 686).

Rubenstein, in his review, reports that the bulk of the studies
show that children who view a great deal of televised violence may
be more prone to behave more aggressively than children who do not
view such violence (p. 688).

There is, then, some basis for belief that exposure to televised
violence may result in increased aggression in at least some children
under certain conditions. Does this vast amount of televiewing
have other effects upon development? Television has been blamed
for a number of societal illnesses: poor grades, lack of writing
skills, illiteracy among young adults, and a general lethargy with
regard to planning and working towards one's goals for the future.
While the answer to this question is unknown, the amount of time
children spend viewing television substantially reduces the opportunity
for acquiring skills through participation in other activities.

These questions then emerge: (1) Can the amount of violence
on television be reduced? (2) How does one help children to be
less inclined to imitate the violence they view and to evaluate
the reality of television more critically? (3) Can children learn
to make conscious decisions about what to view and whether to view

it based upon evaluation of the consequences of their behavior?
These questions are addressed below.

Consumer advocate groups, such as Action for Children's Television
and the National Association for Better Broadcasting have petitioned
the networks to decrease the number of violent incidents seen on
television. Tactics such as this have had questionable success.
This has been a long and slow method, however, and in the end, although
children may be viewing less violence, the number of hours spent
viewing has remained relatively constant.

Utilizing a different approach, several educational communica-
tion researchers have devoted effort to investigating possible methods
of assisting children in altering their perceptions of reality of
television and examining their reasons for viewing. These investi-
gations have been exploring the role that society, specifically
the schools, might play in mediating the effects of television.
Curriculum intervention strategies are being developed and evaluated
to measure the effect they have upon mediating learning from television.
An overview of several major efforts is presented below with a more
complete discussion provided in Chapter II.

Doolittle (1977) designed a curriculum which had as its goal
helping children to cope with the effects of televised violence.
Roberts (1978) was interested in mediating the effects of television
advertising - teaching children to recognize the persuasive techniques
used in advertising. Anderson and Ploghoft (1977) developed a curri-
culum intervention for implementation at the elementary level. Their
strategy was directed towards teaching children to more critically
evaluate news, entertainment, and commercials. The National Parent

Teacher Association is developing a curriculum to educate youth about the problems and challenges faced by the television industry. Singer and Singer (1978) were recently funded by ABC to design and test a method of teaching children to become more intelligent and discriminating consumers of television. The CASTLE (Children and Social Television Learning) strategy (1978), developed by Rebecca Henry and the researcher, focused upon altering children's perceptions of reality from television. A second, major goal of the CASTLE strategy, of particular relevance to the present study, was to assist children in understanding their reasons for viewing television and decrease the number of hours spent viewing.

Although the intervention strategies vary in content, they have as their ultimate goal teaching children to alter their own <u>behavior</u> with regard to viewing television in one or more ways: to be less likely to <u>imitate</u> violence; to be less likely to <u>purchase</u> junk foods or toys; to be less likely to <u>resolve conflicts</u> as they are resolved on television; to be less likely to <u>view television</u> as to <u>participate</u> in alternative activities. The strategies all deal with methods of modifying behavior. The goal of the present study is to investigate one method of modifying televiewing behavior. The specific behavior to be modified is the last listed above: to teach children to reduce their television viewing and hence to more frequently participate in alternative activities.

The present study proposes to investigate one method of teaching children to make decisions with regard to their use of free time, i.e., to gain a certain amount of self-control over their lives.

Self-Control Strategies

What is self-control? The most frequently used synonym for self-control is willpower: someone who loses 30 pounds has displayed "admirable willpower"; someone who quits smoking is described as having "willpower." There is consensus among researchers that "volitional approaches to self-control (such as willpower and personality-trait explanations) have seriously, impeded the collection and interpretation of meaningful knowledge about self-management" (Mahoney & Thoresen, 1974, p. 21). It is far too simple to explain a person's success (or lack of success) at self-management as a function of willpower.

What, then, are alternative ways of interpreting self-control? Mahoney and Thoresen, prolific writers and researchers in the area of self-control, report an expanding body of evidence indicating that effective self-control can be established if attention is given to significant person-environment relations. A person's successful regulation of his/her behavior is dependent upon knowledge of and control over environmental factors. The individual must know what factors influence his/her behavior and how these can be modified to produce the desired behavior change.

Mahoney and Thoresen (1974) have identified two major categories of self-control techniques: environmental strategies and behavioral programming strategies. Environmental strategies rely upon "the prearrangement of cues that bear some relationship to the occurrence of the target behavior (that is, cues that increase or decrease the likelihood of a target behavior)" (Mahoney & Thoresen, 1974, p. 39). For example, rather than trying to resist the temptation

of fattening foods in his/her home, the dieter may just refuse to buy high-calorie foods. In this way, she/he "pre-arranges" or eliminates the cue to eat.

Behavioral programming involves different techniques than those used in environmental strategies. Two "types" of techniques are used: (1) self-administration of consequences in which the individual rewards or punishes himself/herself for behaving in a certain way; and (2) combination techniques in which the individual utilizes a variety of techniques together. Techniques from both environmental and behavioral programming strategies are more fully explained below; because the present study deals with a method which falls under behavioral programming, this latter category will be given greater attention.

1. Environmental strategies: These generally involve the prearrangement of cues which increase or decrease the likelihood of a behavior.

   a. Stimulus control:

   "This involves prearrangement of cues that have come to elicit undesired responses and/or the rearrangement of cues that have come to elicit undesired responses" (Mahoney & Thoresen, 1974, p. 40). It is necessary to separate the cue from the habitual behavior to establish a new behavior pattern. As an illustration, to control obesity, one would separate viewing television from eating popcorn or drinking beer. Another technique within this area is to establish cues which will elicit certain behavior, e.g., placing a picture of an obese person on the front

of the refrigeratory in order to inhibit eating fattening
foods.

b. Prearrangement of response consequences:

This can be accomplished in a variety of ways:

1. Physical and chemical devices can be used: a drug
to treat alcoholism, when combined with alcohol, produces
extreme nausea. This reaction reduces the temptation
to drink.

2. Through social contracts (contingency contracting):
The person in this case contracts with another person
for a reward in the form of a desirable activity in
which she/he may participate after accomplishing a
certain behavior. As an illustration, for raising
her grades in a class, a student may contract with
another person for a dinner out.

2. Behavioral programming strategies: These strategies involve
the self-administration of rewards, punishment, or instructions
to oneself about behavior. The following table from Mahoney and
Thoresen (1974, p. 50) illustrates examples of these techniques
(Table 1).

a. Self-reward and self-punishment:

Rewards and punishments are self-administered immediately
after the target behavior occurs. The difference between
the two methods is that reward increases the behavior while
punishment decreases it. Rewards can be positive or nega-
tive: in positive reward, the behavior is strengthened
by the presentation of a positive consequence. In negative

Table 1. Some behavioral-programming methods (from Mahoney &
Thoresen, 1974, p. 50).

Self-Reward Techniques (To Increase a Behavior)	Self-Punishment Techniques (To Decrease a Behavior)	Combination Techniques
Positive reward	**Positive punishment**	**Covert sensitization**
1. Giving oneself a point or token that may be "redeemed" for a special purchase or for other pleasant activity 2. Thinking a positive self-thought 3. Watching a favorite television program	1. Destroying or giving away a valued possession (such as tearing up a dollar bill) 2. Foregoing a pleasant activity (such as a television program or movie)	1. Imagining oneself feeling very nauseous 2. Imagining oneself undergoing surgery for lung cancer **Self-desensitization** 1. Relaxing while imagining taking an exam 2. Relaxing while imagining talking to girls
Negative reward	**Negative punishment**	
1. Removing pieces of an unattractive photo of oneself 2. Crossing out items on a list of one's negative behaviors 3. Storing a bag of ugly fat (representing one's own obesity) in the refrigerator and removing pieces as one loses weight	1. Self-inflicting pain (such as snapping a rubber band on one's wrist) 2. Subvocalizing "I'm really stupid" 3. Engaging in an unpleasant activity (such as eating a disliked food or wearing the button of a despised political candidate)	**Self-instruction** 1. Telling oneself to pay attention 2. Telling oneself to work slowly **Covert self-modeling** 1. Imagining oneself being assertive with a parent 2. Imagining oneself giving a speech before a large audience

reward, it is strengthened by the removal of a negative consequence.

b. Combination techniques: (Several procedures are combined.)

1. Systematic self-desensitization: This method is used to assist people in becoming less aroused during stressful situations. It involves learning to relax, identifying the situations which elicit fear, listing them from least to most anxiety-producing and imagining himself/herself in those situations while feeling relaxed.

2. Self-modeling: There is not much difference between this and self-desensitization. The person imagines himself in problem situations and attempts to relax.

3. Covert sensitization: This involves pairing an image of the problem behavior with a very negative image, e.g., an image of smoking a cigarette and an image of starting to be sick. This technique has been successfully used with chronic, hard to change behaviors.

4. Self-instruction (self-verbalization, verbal mediation):

> "It is natural that a person learning an avoidance,
> like a person learning any other difficult response
> pattern, should give himself verbal instructions,
> especially since verbal coaching by others is so
> important in the learning of social prohibitions"
> (Hill, 1960, p. 324).

One of the advantages of being human is the capability of using verbal symbolization in dealing with problems and choices. In solving problems or making difficult choices among attractive alternatives, this capability allows one to mentally and verbally weigh advantages

and disadvantages and, thus, to make a more "intellectual" decision.
If "talking to oneself," or "thinking aloud" is a useful technique
in learning new responses, such as decision-making, then it may
be worthwhile to investigate how this might be taught to young children,
enabling them to deal more intellectually with their problems.

"Talking to oneself" or "thinking aloud" is referred to in
the literature as <u>self-instruction</u> or <u>verbal mediation</u>. These con-
cepts have been described as follows:

> "Verbal mediation consists of talking to oneself in relevant
> ways when confronted with something to be learned, a problem
> to be solved, or a concept to be attained. In adults, the
> process generally becomes quite automatic and implicit; only
> when a problem is quite difficult do we begin 'thinking out
> loud.' Most mediational processes take place subvocally below
> our level of awareness" (Jensen, 1966).

(Self-instruction and self-verbalization will be used inter-
changeably throughout this paper.)

How does one achieve this sub-vocalization of commands? The
goal of self-instruction is <u>internalization</u> of these verbal commands
to gain greater self-control. Vygotsky (1962) has suggested that
internalization of verbal commands is the critical step in a child's
development of voluntary control over his/her own behavior. Vygotsky
and Luria (1959), both Soviet developmental psychologists, on the
basis of their work with children, have suggested a progression
from external to internal control over one's life with internal
control and cognitive self-guiding speech increasing with age. Early
in development the speech of others, usually adults, mainly controls
a child's behavior. Somewhat later, the child's own overt speech
regulates his/her behavior and still later, the child's covert or
inner speech can assume a regulatory role. This developmental sequence

suggests that observational learning may be an appropriate method of teaching children to internalize regulatory speech.

To summarize this point, self-control involves the ability to control factors which influence a person's life. Two categories of strategies to gain self-control have been posited: environmental strategies and behavioral programming. Self-instruction is a technique which falls within the latter category. It has been suggested that self-instruction or self-verbalization is an effective method of gaining greater self-control over one's life. This ability to self-instruct appears to be a function of development, with internal control and cognitive self-guiding speech increasing with age.

How does one increase self-control through self-instruction? Self-instruction methods involve speaking to oneself just prior to and during problem situations. What are some of the problem situations which may be dealt with through self-instruction? The following studies have demonstrated the effectiveness of utilizing self-instruction to elicit more reflective behavior. Meichenbaum and Goodman (1971) have investigated the effect of self-instruction upon training impulsive children to talk to themselves before and during an attempt at certain behaviors; Meichenbaum and Cameron (1973) have researched its effect upon schizophrenics in order to improve performance on attentional and cognitive tasks; Meichenbaum, Gilmore and Fedoravicius (1971) sought to discover its effect upon speech-anxious clients. Spivack and Shure (1974), in their study which investigated the effect of self-instruction upon selecting among alternative means of solving conflicts, demonstrated that it may be an effective tool for use by children with behavior problems.

A number of other investigators have concurred on the therapeutic value of teaching children to self-instruct (Bem, 1967; Karnes, Teska & Hodgins, 1970: Palkes, Stewart & Freedman, 1972; Palkes, Stewart & Kahana, 1968).

The above areas reflect the interest in the use of self-instruction in clinical situations with persons who exhibit maladaptive behavior - anxiety, schizophrenia, impulsivity. It has been suggested that training in self-instruction also may be used in the classroom.

Meichenbaum (1977) proposes that problem-solving skills could be taught effectively in the classroom through a combination of modeling and self-instruction rehearsal. Stone, Hinds, and Schmidt (1975) found in their research that modeling was an effective method of teaching elementary school children problem-solving skills to distinguish among facts, choices and solutions. Denney (1975) found modeling to be an effective method of teaching children (6, 8, and 10 year-olds) to solve a "twenty-questions" task. Children were taught to self-verbalize strategies for formulating questions as well as strategies for utilizing feedback from those questions. As a result, their questioning-behavior was more reflective and reaped greater information.

To summarize and provide a definition, "a person displays self-control when, in the relative absence of immediate external constraints, she/he engages in behavior whose previous probability has been less than that of alternatively available behaviors" (Thoresen & Mahoney, 1974, p. 12). As an illustration, from the context of the present study, a child must decide whether to view television or do her homework. She decides not to view her favorite program that she

watches every week, and instead, does her homework. (The previous probability of "doing homework" was less than that of the alternatively available behavior, "viewing television."). The decision was made not because of external constraints (such as a broken television) but was a conscious decision made by the child. Thus, she has displayed self-control by engaging in "doing her homework."

The example above illustrates the three critical features which must be present if self-control is to be exhibited:

1. Two or more alternatives (TV or homework);

2. The consequences of those behaviors are usually conflicting (the consequences of viewing her favorite program are immediately pleasant, but ultimately aversive. She is not doing her homework which may lead to poor marks, failing a grade, social stigma);

3. The self-regulatory pattern is usually prompted and/or maintained by external factors. (Doing well in school, as well as the implications which result, are the long-term consequences which have prompted the child to exhibit self-control.)

How does a child learn to make decisions in which she/he examines alternative actions and the consequences of those actions - which may result in leading a more active, enriched life in which she/he may expect to attain personal goals than in a passive state of inertia televiewing? The question provides the focus for the following discussion of a strategy which may be effective in teaching self-control.

The Use of Modeling to Teach Self-Verbalization

As stated earlier, the use of modeling appears to be an appro-
priate method of teaching this self-verbalization skill. Vygotsky
and Luria (1959) suggest that the internalization of verbal commands
or instructions is a developmental process, beginning with one's
behavior being controlled by others' speech to one's own self-governing
speech. Meichenbaum, in his book <u>Cognitive Behavior Modification</u>
(1977), offers an illustration of this progression from his own
life:

> My two-year-old son David has a yen for apples which my wife
> and I readily satisfy. The only problem is that he dislikes
> apple skin and he is given to spitting it on the floor. In
> fact, when I come home from the office I feel like the woods-
> man in Hansel and Gretel following the path of . . . apple
> skins.
>
> "See, David, apple skin, dirty. I throw the skin into the
> garbage can and not on the floor." At this point David
> usually applauds my performance.
>
> Our solution to the apple skin problem seemed quite straight-
> forward: (a) give him apples without skin, (b) teach him to
> swallow the skins, or (c) set up some management program in-
> volving modeling and reinforcement.
>
> Eschewing (a) as impractical, we were experiencing consider-
> able difficulties in implementing (b) and (c). Then an interesting
> event occurred. One day my wife took David to the beauty parlor
> with her. In order to keep him occupied she had brought an
> apple for him. She found that it was more likely to keep her
> occupied as David began to spit the skins on the floor. Mari-
> anne said, "David, no, dirty. See, the skins go in the ash-
> tray" (my wife is more influenced by my cognitive modeling
> than is my son). What happened next is the reason for this
> anecdote.
>
> David spit the apple skin on the floor, looked at it, and then,
> while picking it up and depositing it in the ashtray, said
> to himself "Bappy (apple) . . . door (open) . . . all done."
> This sequence was repeated except that the phrase, "Bappy . . .
> door," was verbalized while he was merely looking at the
> apple skin on the floor and "all done" followed the behav-
> ioral act. Over several trials the verbalizations dropped
> out of the repertoire and the appropriate behavior was maintained

and even generalized to other settings and other foods (e.g., grape seeds). (Meichenbaum, 1977, pp. 17-18).

The sequence begins with a model enacting the behavior, while verbalizing and ends with the child's own covert speech governing his behavior.

Researchers have investigated the use of modeling in teaching self-verbalization. Meichenbaum and Goodman (1971), in their work with impulsive children, found it to be an effective method of getting children to slow down their behavior, to "think before acting." Meichenbaum (1971) utilized modeling to teach adults coping behavior in order to lessen their fearful reactions of snakes. They were taught to self-verbalize coping statements. Sarason (1973) had models demonstrate self-verbalization while working on tests in order to decrease test anxiety. He found it to be an effective method of training test-anxious people to solve problems on tests. Glass (1974) and Shmurak (1974) were effective in utilizing modeling to each nonassertive person to alter their self-statements, to become aware of negative self-statements and replace them with compatible self-statements and behaviors. Finally, modeling was used by Mahoney and Thoresen (1974) to teach obese people to self-verbalize regarding their weight, in order to diet more successfully.

To summarize, modeling has been found to be an effective method of teaching people to self-verbalize, to produce positive self-statements which are incompatible with negative ones, to covertly deal with maladaptive thoughts, and to replace negative behaviors with actions that are conducive to effective participation within society. It seems clear from the previous studies that modeling may be one effective method of teaching self-verbalization.

Bandura (1977) states that one component of observational learning which contributes towards observer adoption of a behavior is the reinforcement of a model upon performing that behavior. Those behaviors that seem to result in valued outcomes are more likely to be adopted. This is referred to in the literature as <u>vicarious reinforcement</u>, or "the operation of exposing O (the observer) to a procedure of presenting a reinforcing stimulus (i.e., a presumed or confirmed reinforcing stimulus for O) to M (the model) after and contingent upon a certain response by M" (Flanders, 1968). As a function of their viewing of these vicarious rewards, the observers will attempt the behavior in order to accrue those rewards. What will occur, however, in an uncontrolled situation in which the observer imitates a behavior and is unsuccessful in achieving those same reinforcing results as those elicited by the model? This is the question of interest in the present study. In the classroom, a child may be successful in eliciting positive consequences; however, when the child leaves that controlled environment and attempts the behavior in his/her own home, the consequences can be either positive or negative.

Based upon Festinger's social comparison theory (1954), one would predict that when observers are attempting an unfamiliar task, which they have seen modeled, they will compare their own performance to that of the model - as long as the model is perceived to have generally similar ability or beliefs. They may be uncertain as to the standards of performance and use the model's standards as an example. Thus, if they have "failed" in their attempts at imitation and have seen a model consistently rewarded, they may become frustrated

and decline to persevere in performing that behavior. This phenomenon has been termed the expectancy-frustration hypothesis (in Berger, 1971). According to this hypothesis, because unsuccessful observers perceive a greater discrepancy between their performance and that of a successful model, they may become frustrated and quit sooner than observers who may have viewed a partially unsuccessful model performing the same task. With a behavior such as deciding whether or not to view television, one would predict that the consequences for not viewing will not always be positive. If a child decides not to view television, but to do her homework, she may be criticized by her friends for that decision. This criticism may cause her not to select an alternative activity to television in the future, as she may cognitively expect to always be criticized for that decision.

Overview of the Study

The present study proposes to investigate one method of teaching children to make better decisions about their use of free time. Specifically, an instructional unit will be designed and validated to achieve those goals. Children will be exposed to a model using those decision-making skills and be given the opportunity to practice them at school and in their homes.

To summarize, the attainment of greater self-control over one's life is seen as a desirable objective. Various methods exist to promote self-control. Self-verbalization is one of these. The use of modeling has been found to be an effective method in teaching self-verbalization. This appears to be because it replicates the natural developmental sequence through which one achieves covert

self-verbalization. For this reason, it has been selected as the strategy to be used in teaching children to have greater self-control over the decisions they make regarding their use of free time.

Chapter II

REVIEW OF LITERATURE AND

PRESENTATION OF RESEARCH QUESTIONS

The review of the literature is divided into three sections:

1. An overview of curriculum intervention strategies which have been designed to teach children to be more critical consumers of television.

2. An examination of self-verbalization as a method of gaining greater self-control.

3. Observational learning and its relationship to self-instruction. Bandura's (1977) four sets of processes are discussed, with special attention given to two which are of particular relevance to this study.

Related Curriculum Intervention Strategies

Six strategies have been designed which have as their goal assisting children in becoming more critical consumers of television. Although the results from only two of them have been analyzed and reported, all are mentioned here to provide the reader with an understanding of the scope of recent and current activity in the field.

1) Doolittle (1977) designed a curriculum which had as its goal helping children cope with the effects of television. It was predicted that by "inoculating" children against the potentially

22

harmful effects of television: a) there would be a reduction of the probability of aggressive behavior following viewing of aggressive content, and b) there would be lower levels of arousal related to viewing such content. In a second study (1977), he examined the effectiveness of two types of immunization techniques: cognitive and behavioral. The results of the first study show no statistical significance, perhaps due to small sample size and lack of control group. The results of the second study also were inconclusive.

2) Roberts (1978) was interested in mediating the effects of television advertising - teaching children to recognize the persuasive techniques used in advertising. Children were exposed to an instructional film which was intended to help them analyze television with regard to believability of claims, quality of the product and honesty of the presentation. Children exposed to the film were found to be able to perform this analysis better than those in the control group.

In another study by Roberts (1978) the effects of two instructional films were studied. Both were found to be effective and each of them had greatest impact upon heavy television viewers.

3) The CASTLE strategy was designed by Rebecca Henry and the researcher. The general goals of this curriculum were that the students would learn to:

    a) recognize their reasons for watching the shows they select;

    b) decrease the number of violent shows they view;

c) decrease the total amount of television watched and
increase non-television watching activities which
the student finds important;

d) be less favorable in their impressions of television
violence. They would be aware of violence when they
see it, and be more critical of its purpose in
television.

Two modules were created to deal with these goals. Module I,
content analysis, was directed towards teaching children to be more
critical of televised violence. Two dependent variables were signifi-
cantly affected by Module I: 1) perceived disparity between real
world and televised violence, and 2) perceived real world violence.
Module II, decision-making, provided students with strategies for
making decisions regarding their viewing. One hypothesis received
empirical support - that following Module II, students would perceive
certain other leisure-time activities to be more important than
viewing television. This hypothesis received only partial support
(Buerkel-Rothfuss, 1978). It is this goal of Module II - decision-
making, which provided the impetus for the present study. The results
indicate that there was at least partial support for the hypothesis
that subjects would perceive other free time activities to be of more
importance than televiewing. The next logical step appears to be
assisting children in carrying out the attitude, in behaving in a
manner consistent with their thoughts.

4) Anderson and Ploghoft (1977) developed a curriculum inter-
vention for implementation at the elementary level. There were six
modules in the curriculum. Although this program has not been formally

evaluated, it has been integrated into school systems in different areas throughout the country. Feedback from teachers regarding the program has been favorable.

5) Singer and Singer (1978) were recently funded by ABC to design and test a method of teaching children to become more intelligent and discriminating consumers of television. Their method consists of an eight-lesson course for use by 3rd, 4th, and 5th grade teachers that will focus on "shifting the emphasis on children's use of the medium from a passive role towards one that is more active and adaptive." There are as yet no results reported since the course is still under development.

6) National Parent Teacher Association (NPTA). The goal of this curriculum, still under development, is to educate youth about the television industry and "problems and challenges faced by the industry" (1978).

In this section, the researcher has attempted to present the reader with an overview of curriculum intervention strategies which have been developed to date. Various methods have been utilized: "inoculating" children against the harmful effects, exposing children to persuasion strategies used in television advertising and shifting the viewer's role from passive to active. There is at least some empirical support that the schools may be an effective forum for teaching children television viewing skills.

The method to be used in the present study is an extension of Module II of CASTLE-the decision-making module; however, the approach to be used is novel in that it involves teaching children one method of gaining greater self-control over their lives. This method is

labeled self-verbalization and is the subject of the next section.

Teaching Self-Control Through Self-Verbalization

As defined earlier, self-verbalization is the ability to "think aloud" or "talk to oneself," which results in conscious decisions to behave in a certain manner.

The question of how one teaches verbal mediation to children has been the subject of various research efforts. Donald Meichenbaum, one of the primary researchers in the area of self-instruction, and J. Goodman have investigated how one might teach self-instruction to impulsive children - to alter their problem-solving styles, to get them to think before acting (1971). According to Meichenbaum, impulsive children may experience failure in analyzing their problems in three areas:

> "1. They may not comprehend the nature of the problem (a comprehension deficiency - Bem, 1971) and thus cannot discover what mediators to produce;
>
> 2. They may have the correct mediators within their repertoire but be unable to appropriately produce them (a production deficiency - Flavell, et al., 1966);
>
> 3. The mediators may not guide their ongoing behavior (a mediational deficiency - Reese, 1962)."
> (Meichenbaum, 1977, pp. 30-31)

The impulsive child may experience a "breakdown" at any one or all three stages. This breakdown results in behavior without premeditation. Impulsive children tend to act before thinking about the results of their actions.

Meichenbaum and Goodman (1971) undertook the task of teaching impulsive children to become more reflective about their actions. This required compensating for deficiencies in any one of the three

areas previously mentioned. In an attempt to compensate for these deficiencies, Meichenbaum and Goodman conducted a controlled study.

To examine the efficacy of a cognitive self-instructional training procedure, their study utilized an individual training procedure which required the child to talk to himself/herself, first overtly, then covertly, in an attempt to increase self-control. The training procedure consisted of four steps: 1) The experimenter (E) performed a task while the subject (S) observed (E acted as a model); 2) S performed the same task while E instructed S aloud; 3) S performed the task instructing himself covertly. The instructions included: 1) questions about the nature of the task to compensate for a possible comprehension deficiency; 2) answers to these questions in the form of cognitive rehearsal and planning in order to overcome any possible production deficiency; 3) self-instructions in the form of self-guidance while performing the task in order to overcome any possible mediation deficiency; and 4) self-reinforcement. An example of this verbalization follows (as self-verbalized by the E):

> "Okay, what is it I have to do? You want me to copy the picture with the different lines. I have to go slow and be careful. Ok, draw the line down some more and to the left. Good, I'm doing fine so far. Remember, go slow. Now back up again. No, I was supposed to go down. That's ok. Just erase the line carefully.... Good. Even if I make an error I can go on slowly and carefully. Ok, I have to go down now. Finished. I did it."

An error has been included, purposely, to demonstrate to the child how to react to a mistake in performance.

In summary, "the goals of the training procedure were to develop for the impulsive child a cognitive style in which the child could size up the demands of a task, cognitively rehearse, and then guide

his/her performance by means of self-instructions and, when appropriate, reinforce himself" (Meichenbaum & Goodman, 1971, p. 11). Improved performance in the self-instruction group was noted both immediately and in a one-month follow-up.

Camp, Blom, Herbert and Van Doorwick (1976) devised an approach to teach aggressive boys to self-verbalize while planning solutions to problems. They were to ask themselves: "What is my problem? What is my plan? Am I using my plan? How did I do?" A training manual called Think Aloud was used in 13 sessions with aggressive second grade boys. The program yielded significant differences in the subjects' ability to be more reflective about their behavior as tested by the Porteus Maze. The results also generalized to the classroom behavior - the subjects became more reflective in their dealings with classmates.

Meichenbaum and Cameron (in Mahoney & Thoresen, 1974), in their review of the literature on self-instruction, found that in the past there was great emphasis on self-control and environmental consequences of behavior. But little or no mention was found of how the subject perceives and evaluates these consequences. They report: "Our research on cognitive factors in behavior modification has highlighted the fact that it is not the environmental consequences that are of primary importance, but what the subject says to himself about these consequences."

More recently, researchers have sought to influence what children say to themselves about consequences. Spivack and Shure (1974) found that children with behavior problems do not usually think of the possible consequences for their behavior nor do they think of alternative options for behavior. Spivack and Shure provided training in two types of

social reasoning: 1) thinking of alternative solutions to simple conflict situations with peers; and 2) predicting likely consequences should the solution be put into effect. The training resulted in significant and enduring positive effects on social behavior.

In summary, the task of self-instructional training has been to achieve greater self-control over maladaptive behaviors. To accomplish this, maladaptive behaviors that are habitual must be "returned to a 'deautomized' condition; that is, the target behavior should be preceded by deliberate cognitions" (Meichenbaum, 1977, p. 35). Instruction in self-verbalization is designed to teach children to think about the problem and its consequences before acting in order to bring behavior under verbal control.

The following section of the literature review deals with observational learning and its role as an effective method of teaching self-instruction.

Observational Learning and its Relationship to Self-Instruction

Observational learning is a vicarious process in which the behavior of children (or adults) changes as a function of exposure to the actions and consequences of those actions to others.

Bandura (1977) states that there are four sets of processes involved in observational learning and performance. These processes are attention, retention, motivation, and motor reproduction. These are discussed below, with special elaboration upon the processes of retention and motivation as being particularly relevant to the interests of the present study.

1) Attention - the perception of significant features of the behavior to be learned - is basic to learning. People cannot learn much by observation unless they attend to and perceive accurately the significant features of the modeled behaviors. This process is affected by such variables as whom one associates with, the interpersonal attraction of those people, the value of the modeled behavior to the learner, and the nature of the modeled behaviors themselves - their salience and complexity.

2) Retention - the cognitive processes of coding and organization.

> "Observational learning relies mainly upon two representational systems - imaginal and verbal. (a) Some behavior is retained in imagery. Sensory stimulation activates sensations that give rise to perceptions of the external events. As a result of repeated exposure, modeling stimuli eventually produce enduring, retrievable images of modeled performances. On later occasions, images can be summoned up of events that are physically absent. Indeed, when things are highly correlated, as when a name is consistently associated with a given person, it is virtually impossible to hear the name without experiencing an image of that person.... Visual imagery plays an especially important role in observational learning during early periods of development when verbal skills are lacking, as well as in learning behavior patterns that do not lend themselves readily to verbal coding" (Bandura, 1977, pp. 25-26).

(b) The second representational system involves verbal coding. Most of the cognitive processes that regulate behavior are primarily verbal rather than visual (Bandura, 1977, p. 26). In addition to symbolic coding, rehearsal serves as an important memory aid.

Two elements that enhance cognitive coding or organization are labeling and rehearsal. Studies of both children and adults show that observers who code modeled activities with words or labels retain behavior better than those who do not.

For example, Bandura (1969) concludes that covert rehearsal or practice is often as effective as overt rehearsal and is more effective for highly symbolic tasks. Friedman (1972) in a study carried out to enhance assertive behavior found that covert rehearsal was as effective as overt rehearsal. He also notes that rehearsal aided retention of assertive behavior in a two-week follow-up, but adds that evidence about maintenance of behavior is sparse.

Within the area of self-instruction, studies have attempted to investigate the effect of rehearsal. Meichenbaum and Goodman (1971) performed the following study. In one group, S's (subjects) were exposed to an E (experimenter) self-verbalizing while performing a task. They were then allowed to rehearse those self-verbalizations, first overtly, then fading to covertly. In another group, S's did not self-verbalize, but were instructed only to imitate the task. In the third group, S's observed the E perform the task and then were given the opportunity to perform it themselves. The E's instructions in this group were directions such as go slow, be careful, look carefully, but the S's were not trained to self-instruct. The researchers found that overt and covert rehearsal of self-instruction skills improved the child's performance on the modeled task compared to no rehearsal.

Bandura, Menlove, and Grusec (1967), concurring with these results, found that 6 - 8 year-olds who were instructed to verbalize every action of a model as it was being performed, later imitated the model's behavior more accurately than those who watched the model without self-verbalization. Based upon the above findings, it seems safe to conclude that asking children to rehearse self-verbalization while

watching or after watching the model can be an effective method of enhancing the probability of imitation.

The evidence supporting the use of rehearsal would suggest including a coding element in teaching strategies which utilize observational learning. For this reason, it has been included within the instructional unit in the present study. Other elements which are also prevalent in observational learning are feedback and self-correction. These, too, are included in the proposed teaching strategy for the present study.

3) The third component is motor reproduction - converting symbolic representation into action. It is here that self-correction and feedback play an important part. Rarely on a first trial do people perfectly imitate a behavior they have seen modeled. It is through feedback and self-correction that people achieve a closer approximation of the behavior.

4) The fourth element is the motivational process. People do not enact everything they learn. Bandura has asserted that people are more likely to adopt modeled behavior if it results in outcomes they value than if it has unrewarding or punishing effects (Bandura, 1977, p. 28). It is this <u>vicarious reinforcement</u> which creates the desire to imitate behavior.

However, as stated earlier, if imitation of the modeled behavior does not result in the same outcomes as those experienced by the model, the observer may become frustrated and "give up." This has been termed the expectancy-frustration hypothesis.

Research investigating this hypothesis has sought to study the effects of manipulating the percentage of vicarious reinforcement

upon (1) imitation and (2) extinction of imitation of modeled behavior. Traditionally, these studies have compared two or more groups which view models being reinforced at varying percentages of reinforcement. One group will view a model reinforced 75% of the time, while the other group will view a model reinforced only 25% of the time. As stated above, the effect upon either imitation or extinction is the dependent variable.

Six of the studies reviewed (Chalmers, et al., 1963; Bisese, 1966; Marston & Kanfer, 1963; Mausner & Block, 1957; Rosenbaum, et al., 1962; Rosenbaum & Tucker, 1962) investigated the effect of vicarious partial reinforcement upon imitation. They manipulated the percentage of vicarious reward of the modeled behavior. All subjects received some vicarious reward. All studies reported increased imitation as a function of increased percentage of reward. This would indicate that observers who viewed a model being reinforced 75% of the time would thus exhibit a higher rate of imitation.

These studies which have investigated the effect of varying the percentage of vicarous reinforcement upon extinction have produced conflicting results. (Extinction has also been defined as persever- ance in performing a task in the absence of reinforcement.) Lewis and Duncan (1958) and Thelen and Soltz (1969), and Paulus and Seta (1975) found no difference in extinction as a function of percentage vicarious reward. Bisese (1966) and Rosenbaum and Bruning (1966) found that high percentage vicarious reward observers showed greater resistance to extinction than low percentage vicarious reward observers.

Three other studies, however, have demonstrated contrary results. Berg (1971), Berger and Johansson (1968) and M. L. Hamilton (1970)

found increased resistance to extinction as a function of <u>decreased</u> percentage of vicarious reward. The subjects in the relatively unsuccessful model condition generally completed more trials than those in the relatively successful model condition. These latter conclusions support the expectancy-frustration hypothesis.

Support for this hypothesis also may be found in the area of persuasion: research on the effects of one-sided versus two-sided messages. Hovland, Lumsdaine and Sheffield (1949) and Lumsdaine and Janis (in Hovland, Janis & Kelley, 1953) examined the effectiveness of presenting the two sides of a question as opposed to only one. Both sets of researchers found that the person who has been exposed to both the positive and negative sides of an argument, has, in effect, been "inoculated" against the negative arguments when they subsequently appear. She/he is less likely to be influenced by those arguments than someone who has only been exposed to the positive side of that argument. If a person has only heard one side, his/her opinions tend to be swayed back by the valid, negative arguments when they subsequently appear.

What are the implications of the results, regarding sidedness of arguments, applied to the vicarious partial reinforcement effect? If the modeled behavior involves attitude change as in the present study, this research seems particularly applicable. When an observer has viewed a model who is <u>partially</u> reinforced for displaying a behavior consistent with a certain attitude, as opposed to a model who is <u>consistently</u> reinforced, she/he may not be as inclined to discredit the "message" when and if she/he subsequently fails in attempts at imitation. In effect, she/he has been "inoculated" against failure and may be more

willing to persevere even though she/he has experienced negative con-
sequences. She/he is already familiar with the negative point of
view (failure) and has been previously led to a positive conclusion
in a context of presentation in which failure was in evidence.

To summarize these four sets of processes and relate them to
the present study, it would appear that an effective instructional
unit which utilizes observational learning should contain:

1) directions regarding the significant features of the
   modeled behavior;

2) a coding element in which observers are requested to
   overtly and covertly rehearse the modeled behavior;

3) self-correction and feedback;

4) a motivational element consisting of the modeled
   behavior resulting in at least some but not all
   positive outcomes.

In summary, the three bodies of literature reviewed here provide
the background for the present study. Related curriculum intervention
strategies were discussed to provide an understanding of what has
been done in the field. A number of studies have demonstrated that
self-instruction can be an effective method for learning new patterns
of behavior in attaining greater self-control over one's life. Further,
observational learning can be an effective means of learning self-
instruction. On the question of vicarious reinforcement, it may be
more probable that perseverance at a task can be maintained by pre-
senting an observer with a model who elicits both positive and negative
outcomes through his/her behavior, although the results regarding
these questions are divergent.

Research Questions

Based upon the preceding literature review, the following research questions are to be addressed in the present study:

1. Will varying the percentage of vicarious positive reinforcement have an effect upon the use, reasons for use, and content of self-verbalization in making decisions?

2. Will varying the percentage of vicarious reinforcement have an effect upon preference for participation in activities other than television viewing?

3. Will varying the percentage of vicarious reinforcement have an effect upon selection of activities to achieve goals?

4. Will varying the percentage of vicarious reinforcement have an effect upon advocacy and reasons for advocacy of another child's (a) use of self-verbalization and (b) selection of certain activities?

5. Will varying the percentage of vicarious reinforcement have an effect upon the number of hours spent in certain activities?

6. Will varying the percentage of vicarious reinforcement have an effect upon the frequency of use of "conscious" reasons for viewing or not viewing television?

7. Will varying the percentage of vicarious reinforcement have an effect upon recall of the self-verbalizations used by the model?

The specific hypotheses and statistical analyses conducted will be outlined in Chapter III.

Chapter III

METHODS AND PROCEDURES

Introduction

The chapter on methods and procedures consists of five sections:
population and sample, design, treatment, instrumentation, research
questions and analysis procedures. The first section describes the
population and sample and the selection procedure for this study.
The second section describes the design and addresses issues of inter-
nal and external validity. The third section describes the treatment
(the instructional unit and validation procedures) and its adminis-
tration. The fourth section includes instruments used to measures
the dependent variables as well as a discussion of reliability and
validity. The final section identifies research questions, hypotheses,
and analysis procedures.

Population and Sample

Population

The theoretical population for this study was third grade elemen-
tary school children. The students in the study were third graders,
residing in Haslett,Michigan, a small community near East Lansing. The
children in this school district represent variant economic and racial
backgrounds.

Sample and Selection Procedure

The sample consisted of 66 third grade pupils from three class-rooms within three Haslett schools. Figure 1 represents the schools, classrooms, and number of students used in the study.

Class 1 (Control Group)   Class 2 (T_1) Class 3 (T_2)

n_1 = 20 n_2 = 21 n_2 = 25

Ralya School   Murphy School   Wilkshire School

Figure 1. Classes, schools, and number of children per class.

Principals from Okemos (a small community near East Lansing) were contacted by telephone to request the use of their teachers and students for participation in the study. Three classrooms were requested for the study. When it was learned that Okemos had only two classrooms available, the researcher decided to use those classes for a pilot test and the three classes from Haslett for the experiment.

The principal selected the classrooms for the study. A planning meeting was then held among teachers, principal and the researcher to arrange the schedule.

At the time of data analysis, 10 subjects had been dropped from the sample because of absenteeism. The resulting sample size analyzed was 56, as follows:

Class 1 = 20   Class 2 = 18   Class 3 = 18

Design

The present study is essentially a quasi-experimental design with two treatment groups and one control group, as shown below:

Class 3	O_1	X	O_2	O_3
Class 2	O_1	X	O_2	O_3
Class 1	O_1		O_2	O_3

Intact classrooms were assigned to treatments. The X's represent exposure to the experimental variable (percentage of vicarious rein-forcement), O_1 is the pretest, O_2 is the immediate posttest (three days following the end of the instructional unit), and O_3 represents the delayed posttest (three weeks following the end of the instructional unit).

The variable matrices take the form of a two-way repeated measures design, having two factors:

a. The Design over Measures factor: the point in time of testing (pre-, post-, delayed posttest)

b. The Design over Subjects factor: the percentage of vicarious positive reinforcement (100%, 50%, and the control group, which received no treatment).

Two variable matrices (see Figures 2 and 3) were constructed to display the varying points in time of measurement depending upon the dependent variable being measured. Twelve dependent variables were measured at all three points in time. Figure 2 represents the variable matrix for those 12 variables.

(Design over Measures)
Point in Time of Measurement

	Pretest $V_2 \cdots V_{12}$	Posttest 1 $V_1 \cdots V_{12}$	Posttest 2 $V_1 \cdots V_{12}$
G_3*			
G_2**			
G_1***			

(Design over Subjects)
% of Vicarious Reinforcement

*50% positive consequences, 50% negative consequences
**100% positive consequences
***Control

Figure 2. Variable matrix for variables 1-12.

Number of Factors in Design over Measures - 1   Levels in Factor 1 - 3
Number of Factors in Design over Subjects - 1   Levels in Factor 1 - 3
Variables/Measure Point: $O_1 = 11$, $O_2 = 12$, $O_3 = 12$.

V_1 = recall of self-verbalization

V_2 = use of self-verbalization

V_3 = reasons for use or non-use of self-verbalization

V_4 = content of self-verbalization

V_5 = advocacy of self-verbalization

V_6 = advocacy of selection of TV or alternative activity

V_7 = reasons for advocacy of self-verbalization

V_8 = reasons for advocacy of selection of TV or selection of alternative activity

V_9 = preference of anti-social TV versus alternative activity

V_{10} = preference of pro-social TV versus anti-social TV

V_{11} = preference of TV versus alternative activity

V_{12} = selection of TV viewing or alternative activities as a means of achieving goals

Three other dependent variables, those related to actual time spent viewing television and reasons why viewing occurred, were measured only twice, at points O_1 and O_3. Figure 3 represents the variable matrix for those three variables.

The design was considered quasi-experimental because the subjects were not randomly assigned to the experimental and control groups.

Threats to Internal Validity

Six potential sources of internal invalidity are controlled for by this design: history, maturation, testing, instrumentation, selection and mortality (Campbell & Stanley, 1963). Only if there was an interaction between any of these variables and the selection differences that distinguish the experimental and control groups could one hypothesize that pretest - posttest gain might not be explained by the treatment effect. Campbell and Stanley (1963) stated that in general such interactions are unlikely. There are, however, situations in which interactions might occur. The experimenter must recognize that any distinguishing features which exist for the experimental groups may interact with these variables. An example of this might be if a group is selected for its extreme nature, i.e., for its extreme scores on the pretest or correlated measures. The difference, then, in the degree of change from pretest to posttest might be attributed to regression rather than the effect of the treatment.

In the present study, the researcher questioned the principal and teachers as to their perceptions of the equivalence of the groups. All stated that the classrooms had no apparent differences. The third

(Design over Measures)
Point in Time of Measurement

	Pretest V_{13} . . . . V_{15}	Posttest 1	Posttest 2 V_{13} . . . . V_{15}
G_3*			
G_2**		.	
G_1***			

(Design over Subjects)
% of Vicarious Reinforcement

*50% positive consequences, 50% negative consequences
**100% positive consequences
***Control

Figure 3. Variable matrix for variables 13-15.

Number of Factors in Design over Measures - 1   Levels in Factor 1 - 2
Number of Factors in Design over Subjects - 1   Levels in Factor 1 - 3
Variables/Measure Point: $O_1 = 3$, $O_2 = 0$, $O_3 = 3$.

V_{13} = number of hours spent in alternative activity

V_{14} = total number of hours spent viewing TV

V_{15} = reasons for viewing TV

grade teachers and curriculum director assigned students to classrooms with the goal of having balanced classrooms with relation to sex, ability, and discipline problems.

Threats to External Validity

Campbell and Stanley (1963) list the three possible sources of external invalidity within this design as interaction of treatment with testing, interaction of treatment with selection, and reactive arrangements.

Interaction of treatment with testing may occur when the pretest has an effect upon the treatment by changing the subject's suscepti-bility to the treatment.

As Campbell and Stanley state:

> The effect of the pretest upon the treatment...is a function of the extent to which such repeated measure-ments are characteristic...of the universe to which one wants to generalize...in research on teaching, one is interested in generalizing to a setting in which testing is a regular phenomenon.

Since testing is incorporated into the routine activities of most, if not all, schools, this limitation may not be a severe threat to external validity.

The possible interaction of selection and treatment indicates that the effect of the treatment may be specific to the subjects in this experiment and not representative of a larger universe. This may occur if the subjects have different characteristics from the population at large. In this case, the teachers and administrators in Haslett have supported research efforts by volunteering time over the past two years to work with this project. For this reason, the

schools may not be representative of most schools; however, this differ-ence may be more with the administrators than with the students.

Limitations on generalizability due to reactive arrangements (knowledge of the experiment and artificiality of the setting) may occur. Changes from the subjects' routine activities were represented by pre- and posttests and the presence of a new classroom teacher. The students were not told the specific nature of the study and were not told of the expected effects to be measured.

Limitations

Besides threats to internal and external validity previously out-lined, other limitations of this study warrant discussion here.

1. The researcher served as the teacher in the classroom. Certain complications arose during the pilot test which prohibited the hired instructor to teach the unit. For this reason, it was necessary for the researcher to assume that role, which opened the study to the possibility of the researcher eliciting the desired results. The researcher consciously made the effort to avoid such contamination by attempting to be consistent in all classrooms.

2. The method of reporting data was through recall and self-report. The subjects were required to recall the programs viewed and report them the next day. Because subjects did report viewing on the morning immediately following, it was felt that the percentage of erroneous recall could be reduced.

3. Both treatment groups as well as the control group for the present study represent intact classrooms. Random assignment of sub-jects from a common population to groups was not used. Although this

may be considered a limitation, there is an advantage to this design. Because intact classrooms are used and subjects are allowed to remain in their own classrooms, there is not the "awareness of experiment, I'm a guinea-pig attitude" (Campbell & Stanley, p. 50) that may exist when random assignment forces subjects out of their familiar environment. In addition, pretest scores in most cases corroborated the assertions of the principal and teachers that groups were similar at the outset of the study.

Treatment

Instructional Unit

The instructional unit consisted of five (5) 45-50 minute lessons. The lessons were used on five (5) consecutive school days. The following is a brief outline of the lesson content. (For a more complete presentation of the instructional unit, see Appendix A.)

The unit included two basic components: a slide-tape presentation and guided discussion supported by student workbooks.

The model selected to appear in the slide-tape presentation was a female, 12 year old. Research in the area of modeling suggests that perceived similarity between the model and observers with relation to likes and dislikes is of importance in determining whether the model's actions will be imitated (Festinger, 1954). For this reason, it was emphasized to the subjects that the model was interested in the same types of activities as they were. (These activities were determined by a questionnaire.)

The medium of slide-tape was chosen because of considerations of cost and ease of editing. In addition, there was no indication that

the content of the lessons required motion picture media; therefore, slide-tape was selected. The model's voice was used for the tape.

The slide-tape presentation shown to students depicted the model engaged in decision-making regarding her own use of free time. In some instances she experienced negative consequences (not to be confused with negative reinforcement). "Negative consequences" refers to consequences which were not perceived as pleasant by the model. In one treatment design, the model experienced negative consequences upon selection of an activity other than viewing television. In other situations, the model experienced positive consequences. The subjects viewed the model receiving either all positive or half negative/half positive consequences depending upon the treatment group they were in.

Briefly, the situations and consequences are described below:

Situation 1: Model decides to ride bicycles with her

brother instead of watching TV.

Treatment 1: She and her brother enjoy the ride and
(Group 2)
she expresses the feeling that she had fun.

Treatment 2: She falls from her bike and expresses the
(Group 3)
feeling that she wishes she had not gone.

Situation 2: Model decides to bake cookies instead of

watching TV.

Treatments 1 and 2: Model is rewarded by family for

baking cookies.

Situation 3: Model decides to play a game with her brother

and friend instead of watching TV.

Treatment 1: She enjoys playing the game with her
(Group 2)
        brother and friend and expresses that

        feeling.

Treatment 2: She does not enjoy the game and expresses
(Group 3)
        her feeling.

Situation 4: Model decides to play with her puppies instead

        of watching TV. .

Treatments 1 and 2: She enjoys herself and expresses her

        feeling.

In all situations, the model selected the activity alternative
to television viewing with the specific intent of achieving a certain
goal. For example, in Situation 1, she selected bicycle riding with
the intent of having the opportunity to talk with her brother. In
Situation 2, baking cookies was selected over television viewing be-
cause the model expressed a goal of "doing something nice" for her
brother and friend. (For the actual dialog used in the slide-tape
presentation, see Appendix A.)

Briefly, the first day of the instructional unit involved setting
rules for discussion to be followed throughout the week. Topics dis-
cussed were goals, use of free time, and how to make decisions about
use of free time. No slide-tape exercise was done this day.

Lesson 2 involved a review of the first lesson and the first
slide-tape. Workbooks were used during the discussion of the slide-
tape situation. In addition, a game was played which allowed students
to practice selecting activities to achieve goals.

Lesson 3 consisted of a review of the previous lesson, a second slide-tape, and a discussion of pro- and anti-social television programming.

Lesson 4 followed the same format with a review of the previous lesson, the third slide-tape exercise, and a discussion of goals and activities. The last exercise dealt with deciding how to spend their own time in order to achieve their own goals.

The last day began with a review; this was followed by a discussion of the growing concern about children viewing too much TV, and the last slide-tape. The emphasis of the last exercise was on the theme of being active participants in society rather than passive viewers of television. A summary of what students had learned was then elicited from them. (For a more complete outline of lessons and sample worksheets, see Appendix A.)

Validation of the Instructional Unit

Several steps occurred in the validation of the instructional unit.

1. Prior to the experiment, the researcher requested from the pilot group subjects a list of activities in which they participated when not viewing television. From these activities, four were chosen which provided the basis for the slide-tape presentation of situations.

2. Using the pilot group, the researcher determined whether the planned consequences to the model were perceived by the subjects as being positive or negative. (See Appendix B for the form used.)

3. Goals, objectives, and measures were formulated.

4. Lessons were designed.

5. Lessons and measures were pretested on the pilot group.

6. Lessons and measures were revised where appropriate.

Assignment of Classes to Conditions

There were three conditions in this study: two treatments (instructional units) and one control. The two instructional units were identical except for the consequences experienced by the model in two out of the four situations. In T_1, the model received positive consequences for her decision in all four situations. In T_2, the model experienced positive consequences in two situations and negative consequences in two situations.

The classes were randomly assigned to the following conditions:

      Class 1 - Control

      Class 2 - 100% positive consequences

      Class 3 - 50% positive consequences
               50% negative consequences

Administration of the Treatment

The researcher began the treatment by introducing herself to the class and explaining that for the next five days the students would be participating in activities focused on how they made decisions regarding their use of free time. Each day there were activities, discussion, and summaries at the end of the day to describe main points during that day's lesson. Workbooks were given to the students (see Appendix C) which accompanied classroom discussion regarding long and short term goals, decisions about use of free time,

and types of programming. Each day students used the workbooks, viewed a slide-tape and discussed what was viewed.

The regular classroom teachers remained at their desks in the back of the room during the treatment. They did not participate during the experiment. In addition, they were instructed not to refer to the instructional unit at any other time. An observer was present during all activities to establish that objectives had been covered in order to determine if the unit was implemented as intended.

Prior to the formal investigation, the treatment and instruments were piloted in the the two Okemos third grade classes. Revisions were made as a result.

Instrumentation

Dependent Variables

The dependent variables in this study represent the objectives of the instructional unit. Seven broad areas of change were intended by the instructional unit.

1. Use of self-verbalization in making decisions.

2. Preference for participation in activities other than viewing television (as measured by attitudinal scales).

3. Recognition that certain types of programming and activities may be more functional than others in achieving goals.

4. Advocacy of (a) use of self-verbalization and (b) choice of non-television activities even though this may not always result in positive outcomes.

5. Reduction in the number of hours spent in total viewing, and an increase in the number of hours spent in alternative activities.

6. A higher frequency of use of "conscious" reasons for viewing or not viewing.

7. Recall of the self-verbalization used by the model.

The relationship of the specific dependent variables to these broad areas is outlined below:

I. <u>Use of self-verbalization</u>: This measure was designed to indicate whether the subjects were using self-verbalization before deciding whether to view television, their reasons for using it, and the content of the self-verbalization. It was of the following form:

```
┌─────────────────────────────────────────────────────────┐
│  a.  Do you ask yourself questions before deciding       │
│      whether to watch television:                        │
│              Yes _____          No _____             │
│  b.  Why or why not? _____   │
│      _____   │
│                                                          │
│  c.  What do you say to yourself? _____    │
│      _____   │
│                                                          │
└─────────────────────────────────────────────────────────┘
```

<u>Part a</u>: Use of self-verbalization: Subjects were asked to respond yes or no to question a. A score of 0 was assigned if the response was no; a score of 1 was assigned if the response was yes.

<u>Part b</u>: Reason for use of self-verbalization: Subjects were asked to respond to this question by writing an answer in the space provided. After reviewing all responses, the researcher created six categories of response for this question:

1. I ask myself questions because it's good to do it. I may think of something else I could do rather than watch TV.

2. I want to watch TV but I don't know what to watch. If I ask myself questions before watching, maybe I can decide better what I'm going to watch.

3. I don't have to ask myself questions before watching. I know what I'm going to watch.

4. No, I don't ask myself questions. It's crazy to ask myself questions.

5. I don't know why I ask myself questions (or why I don't ask myself questions).

6. (This category was reserved for responses which did not conform to the above responses and contributed no information regarding the effectiveness of the instructional unit.)

Part c: Content of self-verbalization: Subjects were asked to respond to this question by filling in an answer in the space provided. Again, after reviewing all responses, the researcher created six categories of response for this question:

1. "Is the program I want to watch helpful in reaching my goal? Should I watch it? Do I want to do something else?"

2. "Is something good on TV?"

3. "Should I watch X or Y?"

4. "I want to watch TV. I'll watch anything that's on."

5. "I don't know what I say to myself."

6. No response. (For those subjects who did not ask themselves questions.)

Subject responses were then categorized into those six categories.

II. **Preference for participation in activities other than television viewing**: Two measures were used to test for this preference.

A. Preference for participation in alternative activities versus preference for programming which contains a high frequency of violent acts (referred to as anti-social programming): This measure was designed to indicate whether the subjects felt it would be better to spend their time viewing anti-social programming or participating in alternative activities. This measure consisted of six dichotomous items of the following general form:

If you had one hour of free time, which do you think would be the best way to spend it?
Watching Wonder Woman   or   Reading a good adventure book

Students were asked to circle the response which indicated their preference. Only one could be circled in a pair. A score of 1 was given to the alternative activity and a score of 0 was given to the television selection. Item scores were added (giving a total maximum score per person of six or minimum of 0) and an average score was computed for each subject (possible average scores were 0-1).

B. Preference for participation in an alternative activity versus viewing television: This measure was designed to indicate if students preferred television viewing or non-television viewing activities as a means of spending their leisure time. The preference consisted of 14 dichotomous items of the following form:

> If you had one hour of free time, which do you think would be the best way to spend it?
>
> Watch an adventure TV show   or   Read an adventure story

Students were asked to circle the item they believed would be the best way to spend their free time. Only one item could be circled in each pair. A score of zero was assigned if the item circled was television viewing; a score of one was assigned if the item circled was the alternative activity. The possible range of scores for this item was from 0 to 14; an average score was computed for each subject (possible averages were 0-1).

III. __Recognition that certain types of programming and activities may__ __be more functional than others in achieving goals__: Two measures were designed to test this variable.

A. Recognition that certain types of programming may be a more desirable means of learning about pro-social methods of solving problems: This measure was designed to indicate whether subjects recognized that viewing "anti-social" programming was not a desirable means of learning to solve problems. A major goal of the instructional unit focused upon the ability to select leisure time activities as a means of achieving goals. This measure was designed to test whether students were able to select between types of programming to achieve the goal of learning pro-social methods of problem-solving. This measure consisted of six dichotomous items of the following form:

> If one of your goals is to learn how to solve problems,
> which show would you watch in order to learn about good
> ways of solving problems?
>
> Little House on the Prairie or Six Million Dollar Man

Students were asked to circle the item they believed would be the best

way for them to learn to solve problems. Only one item could be circled

in each pair. A score of zero was assigned to the program which por-

trays violent means of solving problems; a score of one was assigned

to the program which portrays pro-social means of solving problems

(discussing them in a rational manner without physical or verbal abuse).

The possible range of scores for this variable was 0 to 6. Averages

were computed, with a range from 0-1.

B. Recognition that certain activities may be more desirable

than others as a means of achieving long-term goals: This measure

was designed to indicate whether subjects recognized that participation

in certain types of activities would be a more appropriate means of

achieving long-term goals than others. This measure was of the follow-

ing form:

> Susan's goal is to be a doctor. From each pair below,
> we would like to know which activity you think is more
> important for her and how much more important you
> think it is. Circle your answer.
>
> a) Watching TV   or   Playing with friends
>
> How much more important? Put an X after your answer.
>
> Really a lot more _____
> A lot more _____
> Just a little more _____

There were two more pairs of choices for this item. In addition, there was a comparable item about a boy named John, whose goal was to be a basketball player.

The items were constructed for scoring into a Likert scale, with scores assigned in the following manner:

Watching TV			Playing with friends		
1	2	3	4	5	6
Really a lot more	A lot more	Just a little more	Just a little more	A lot more	Really a lot more

The two items (Susan:doctor; John:basketball player) with their three pairs of choices were combined together, giving a possible range of 0-36. Averages were computed, with a range of 0-6.

IV. <u>Advocacy of use of self-verbalization with selection of non-television activities</u>: There were four items which constituted this measure. These items were of the following form. Each portion of this question is discussed separately below. (Refer to the example on the following page for the following discussion.)

Part A. This measure was designed to indicate whether the subjects would advocate use of self-verbalization, even though its use in the example had not resulted in positive outcomes. The four items were combined, allowing for a possible range of scores from 0 to 4. Scores were averaged, yielding a range of averages of 0-1.

Yesterday Bob came home from school and he thought care-
fully to himself: "I've got some free time. I could
go play kickball or I could watch TV. If I play kick-
ball, I could get some exercise. If I watch TV, I could
just relax. If I want to get in shape, I should play
kickball."

Bob went out to play kickball. He accidentally tossed
the ball into someone's window. He knew that he would
have to pay for a new window. Bob felt that if he had
just stayed in and watched TV, none of this would have
happened. He wonders what he should do the next time?

IF YOU WERE BOB, WOULD YOU STILL THINK VERY CAREFULLY
BEFORE MAKING YOUR DECISION WHETHER TO WATCH TV OR TO
PLAY KICKBALL?

A. YES _____   NO _____

B. WHY? _____

   _____

C. IF YOU WERE BOB, WHAT WOULD YOU DO NEXT TIME?

   WATCH TV _____   or   PLAY KICKBALL _____

D. WHY WOULD YOU DO THAT? _____

   _____

Part B. This measure was designed to test whether reasons for

advocating self-verbalization would become more goal-related following

the curriculum intervention. All responses to this item were considered

and four categories were formed for the analysis of this item:

1. It's important to think over what you do, to make decisions

   based upon your goals.

2. (Category 2 was reserved for students who responded

   with the same answer that was given in Part D of

   this question. Subjects often appeared to misunder-

   stand the intent of question B.)

3. I don't know why I would think it over carefully.

4. (This category was reserved for responses which did not

conform to the above categories and contributed no

useful information for analysis.)

Part C. This measure was designed to indicate whether students
would advocate the selection of an alternative activity over tele-
vision viewing even though that selection had previously resulted
in a non-positive outcome. The four items were combined, with a
possible range of scores from 0 to 4. Scores were averaged with a
range of averages 0-1.

Part D. This measure was designed to indicate the reasons why
subjects would advocate a choice of television or the alternative
activity. Subjects were asked to fill in a response in the space
provided. After reviewing all responses, the researcher created eight
categories of response for this question:

1. I would select the alternative activity because

I might not experience negative consequences

the next time.

2. The alternative activity is important for my goals.

3. I like the alternative activity; it's fun.

4. I don't know.

5. I like TV.

6. TV is important for my goals.

7. I would select TV because you might experience

negative consequences the next time.

8. (This category was reserved for responses which did not conform to the above responses and contributed no useful information regarding this variable.)

V. <u>Reduction in the number of hours spent in (1) total viewing, and (2) increase in the number of hours spent in alternative activity</u>: This measure was designed to indicate the number of hours spent viewing television and in alternative activities. To obtain this measure, students were given a list of all television programs aired the previous day between the hours of 3:00 and 10:00 p.m. Each morning students were asked to check the programs they had watched the previous day; if no program was watched, they were told to check an item pertaining to that and to describe briefly what they were doing instead. If a student watched two programs during the same time slot, she/he was asked to check the show watched longer. Five days were sampled to construct this measure: Saturday, Monday, Tuesday, Wednesday and Thursday. Saturday viewing included the hours between 8:00 a.m. and 10:00 p.m. Television viewing hours score for this measure represents the sum of the number of hours watched per day for the five sample days. The range of possible viewing hours was 0 to 39 hours. The range of possible hours spent in alternative activities was 0 to 39.

VI. <u>Frequency of use of "conscious" decision-making skills in deciding whether to view television</u>: This measure was designed to indicate whether subjects were using "conscious" decision-making skills in selection of free time activities. The measure consisted of 20 items of the following form:

DID YOU WATCH <u>HAWAII FIVE - O</u>?

Yes _____   NO _____

__ I like it.   __ I don't like it.

__ I had nothing else to do.   __ It wasn't important for
                                            me to watch it.
__ I don't know why I
   watched it.   __ I don't know why I
                                            didn't watch it.
__ It was important for me
   to watch it.   __ Other

__ Other

Subjects were asked to indicate whether they had or had not viewed a

certain program and check the reason which most closely represented

their reason for that choice.

VII. <u>Recall of self-verbalization used by the model</u>: This measure

was designed to indicate whether subjects could recall the self-

verbalization used by the model in the class presentation. It was

of the following form:

What kinds of things did Jill say to herself before
deciding whether or not to watch television?

Subjects were asked to fill in the space provided with their response.

If the response matched any of the self-verbalizations used by the

model, the answer was scored one; if not, the response scored a zero.

This measure was only given to the two treatment groups.

VIII. <u>Realism of the treatment</u>: At the time of the posttest 1, the

researcher questioned the subjects as to their perception of the

realism of the treatment. The question was of the following form:

> Do you think that what happened to Jill could happen to you?
>
> For T_1: That things would always go well for you if you decided not to watch TV.   YES ___   NO ___
>
> For T_2: That things would sometimes go well for you if you decided not to watch TV and some-times they would not.   YES ___   NO ___

No hypotheses were formulated regarding this measure. Frequencies are reported in Chapter IV as well as a discussion of their inter-pretation.

Administration of the Instrument

The instrument was read aloud to the students in the classrooms. At the outset, the students were told that there were no right or wrong answers; that they should only respond carefully with their own opinions and feelings. Students were asked not to speak to each other or look at each other's answers during the testing procedure. All items were read to the class as a whole with sufficient pause for responses.

The measure of hours of viewing was given each morning. Students were asked to fill in the programs they had viewed the previous day and night. These were collected each day. This information was col-lected only at times of the pretest and posttest 2.

Validity

Content validity was examined for all measures. Mehrens and Lehman (1975) state that:

> Content validity is related to how adequately the
> content of, and responses to, the test samples
> the domain about which inferences are to be made.

There is no numerical expression for content validity; subjective comparisons were made through inspection of the items to judge whether the items represented the content of the instructional unit. A "detailed, systematic, critical" inspection of the test items has been been described as the single best way to determine content validity (Mehrens & Lehman, 1975). This was achieved in the present study by having one other person familiar with the study serve as judge of the content validity of the test. All objectives, activities, and lesson plans were discussed by the judge and the researcher. Then the test was reviewed and the determination was made that the items represented the content that the test was designed to measure.

Reliability

There are several different approaches to estimating the reliability of an instrument. Two different types of reliability estimates were computed for the variables in this study:

1) Estimates of internal consistency, and

2) Estimates of scorer reliability.

These will be discussed separately below.

Measures of internal consistency. An estimate of internal consistency represents the index of the homogeneity of the items in the test or the correlation of the item responses with the total test score. Estimates of internal consistency for the present study are reported as Cronbach's coefficient alpha. Cronbach developed

coefficient alpha to measure the reliability of items which are not scored dichotomously. Coefficient alpha represents the average correlation obtained from all possible split-half reliability estimates.

Table 2 presents alpha coefficients for those variables for which this estimate was computed, at the time of the pretest.

Table 2. Reliability coefficients for dependent measures.

Variable	Alpha Coefficient
I. Preference for anti-social TV vs. alternative activity	.65
II. Preference for pro-social TV vs. anti-social programming	.70
III. Preference for leisure time activity	.75
IV. Selection of activity as means of achieving goal	.60
V. Advocacy of self-verbalization	.75
VI. Advocacy of choice of activity	.75

Measures of scorer (judge) reliability. These measures were computed for five variables. Each of these five variables required the assignment of subjects' free responses to categories predetermined by the researcher.

Measures of scorer reliability were determined for these variables in the following manner. The researcher reviewed and listed all possible responses for the variables. Two judges were hired to assign subject responses to the categories. (The researcher independently assigned responses to categories.) Categories were reviewed with

the judges, and they were allowed to practice assignment. Judges

were then asked to independently read through questionnaires and assign

responses to the categories. At ten random points throughout the

sessions, judges were asked to read a subject's response and report

and discuss their assignment of a response to that category. The

percentage of agreement was then calculated and reported (see Table 3).

Table 3. Percentage of agreement of assignment of responses to categories.

	Variable	% of Agreement
I.	Recall of self-verbalization	100%
II.	Reasons for use or non-use of self-verbalization	90%
III.	Reasons for advocacy of self-verbalization	100%
IV.	Content of self-verbalization	90%
V.	Reasons for advocacy of selection of TV or alternative activity	90%

Research Questions, Hypotheses, and Analysis Procedures

The primary purpose of this study was to examine the effect of two

schedules of vicarious reinforcement upon:

   a. use of self-verbalization in making decisions;

   b. preference for participation in activities other

      than viewing television;

   c. selection of certain activities to achieve goals;

   d. the number of hours spent in certain types of

      activities;

    e.   advocacy of use of self-verbalization and advocacy of selection of non-viewing over viewing;

    f.   frequency of use of "conscious" reasons for viewing or not viewing;

    g.   recall of self-verbalization used by the model in the treatment.

The study employed a repeated measures design: pretest - treatment - posttest 1 - posttest 2 design.

The specific research questions addressed were:

1. Will varying the percentage of vicarious positive reinforcement have an effect upon the use, reasons for use, and content of self-verbalization in making decisions?

2. Will varying the percentage of vicarious reinforcement have an effect upon preference for participation in activities other than television viewing?

3. Will varying the percentage of vicarous reinforcement have an effect upon selection of activities to achieve goals?

4. Will varying the percentage of vicarious reinforcement have an effect upon advocacy and reasons for advocacy of another child's (a) use of self-verbalization and (b) selection of certain activities?

5. Will varying the percentage of vicarous reinforcement have an effect upon the number of hours spent in certain activities?

6. Will varying the percentage of vicarous reinforce-
   ment have an effect upon the frequency of use of
   "conscious" reasons for viewing or not viewing TV?

7. Will varying the percentage of vicarious reinforce-
   ment have an effect upon recall of the self-verbali-
   zations used by the model?

For each of the stated research questions, there is a correspond-
ing set of hypotheses and statistical procedures used in analysis.
These are outlined below.

Hypotheses

The hypotheses which guide this study may be divided into three
categories. These are outlined and discussed below:

A. Hypotheses which relate directly to the expectancy-frustration
hypothesis: a test of partial reinforcement effects.

The treatments are expected to have differential impact upon seven
dependent variables, as predicted by the expectancy-frustration hypo-
thesis: 1) actual use of self-verbalization, 2) preference for alter-
native activities over television viewing, 3) preference for alternative
activities over anti-social television viewing, 4) advocacy of use
of self-verbalization, 5) advocacy of selection of an alternative
activity, 6) reasons for advocacy of selection of an alternative
activity, and 7) number of hours spent in certain activities.

These variables relate directly to behaviors modeled in the instruc-
tional unit. The test of the differential effect of the instructional
units upon these variables is a direct test of the expectancy-frustration
hypothesis: Will greater or lesser vicarious positive reinforcement

have more impact upon these variables? Examination of these variables at posttest 1 and posttest 2 will yield information regarding imitation of the model's behaviors as well as persistence in imitating of the behavior.

B. Hypotheses which will facilitate further explanation of the effects upon category A variables.

Five variables are expected to provide further explanation for those variables outlined in category A. These are (1) reasons for use of self-verbalization, (2) reason for advocacy of self-verbalization, (3) reason for viewing television, and (4) accurate recall of self-verbalization and (5) content of self-verbalization.

Examination of these variables is expected to yield information as to why subjects use or do not use self-verbalization, why they would advocate (or not) self-verbalization, whether their reasons for viewing (or not) have changed as a result of this exposure to the treatments, whether they are able to recall the model's self-verbalizations, and what the subjects are saying to themselves when they self-verbalize. The question of interest here is whether the treatments will have a differential effect upon these variables.

C. Hypotheses which relate to a major objective of the curriculum: teaching children to consider goals in making decisions about use of free time.

A major objective of the instructional unit was to teach children to consider goals in making decisions about free time. Two dependent variables: (1) selection of non-TV activities to achieve certain long-term goals; and (2) selection of pro-social television over

anti-social television to achieve the goal of learning positive problem-solving behaviors are expected to change as a result of the treatment. These behaviors are not explicitly modeled within the instructional unit; they call for inferences to be made by the subjects. The question of interest here is whether these inferences can be made, and, further, whether varying the percentage of vicarious reinforcement will have differential impact upon these variables.

For certain variables, interaction effects are hypothesized. It is expected that, for these variables, the time of testing will have an effect upon the performance of the treatment groups: at posttest 1, one group will respond with greater frequency in the desired direction than the other; at posttest 2, this trend is expected to reverse itself. (See the rationale following the statement of each hypothesis for the explanation of this phenomenon.)

Before beginning a discussion of the hypotheses, the general statistical procedures used will be discussed here.

Two types of data were collected for analysis within the present study. One type is termed interval data; the other is categorical or nominal data. The two statistical procedures used to analyze these levels of measurement are discussed below.

Interval data. These data were collected to measure the effect of the treatment upon the following variables: preference for leisure time activities; frequency of selection of alternative activities to attain goals; selection of program type as a means of achieving goals; preference of anti-social programming versus alternative activity; advocacy of self-verbalization; advocacy of selection of

alternative activities; number of hours spent in viewing, or in other activities.

To categorize data as interval data, the assumption is made that the responses to the item may be ordered and that there are equal intervals between all responses. This is true of the variables listed above.

To analyze the interval data, a repeated measures analysis of variance was performed. This yielded information regarding significant main effects of treatment or time as well as significance of the interaction of these two independent variables.

Categorical data. The categorical or nominal level of measurement makes no assumption about values assigned to the data. Each category is distinct, and there are no assumptions regarding ordering or distances between categories. Because no assumption was made here regarding the order of the categories of responses to these measures, the data were treated as categorical data and analyzed appropriately. These data were collected from measures in which the researcher requested that the subjects respond freely to items. Upon examining the responses, the researcher then formulated categories to accommodate the responses.

The categorical variables in this study are "explanation" variables. They are measured by free response items (e.g., "What do you say to yourself before viewing?" or "Why or why don't you ask yourself questions?"). These may be termed "second-level" variables - not directly related as a means of explaining why the treatments may or may not have had an effect. For example, asking the subject not only if she/he uses self-verbalization but also why it is used or not may

yield useful information as to the reason for the relative effective-
ness of a treatment.

In formulating hypotheses regarding these variables, predictions
are made regarding the proportion of response per group to the cate-
groies. It is expected that the frequency of response to the categories
will differ among groups because of exposure to the treatment. For
certain of these variables, a trend is predicted in an increase or
decrease in frequency of response to specific categories. Although
not specifically hypothesized, these trends will be examined and dis-
cussed.

Each of these dependent categorical variables was cross-tabulated
with the treatment group, yielding tables which displayed the frequency
of response by each group to each category. (Tables are presented
in Chapter IV.) Upon examination of these tables, categories which
contained two or more empty cells were eliminated for the statistical
procedure.

A chi-square test of homogeneity of the patterns of responses
to the categories was then performed on each of these variables. This
test ascertains whether frequencies of response to specific categories
differ statistically among the groups. A discussion of these results
may be seen in Chapter IV.

The significance level for all tests was set at .01. Due to
the number of statistical tests performed, it was considered advisable
to select a conservative alpha level. All hypotheses are presented
in the alternative form. Rationale follow each hypothesis to offer
an explanation for the direction of change hypothesized.

H_1: There will be a difference among groups in the percentage of students using self-verbalization at each posttest:
a)   At posttest 1, a greater proportion of Group 2 subjects will use self-verbalization than Group 3, which will be greater than Group 1;
b)   At posttest 2, a greater proportion of Group 3 subjects will use self-verbalization than Group 2, which will be greater than Group 1.

This hypothesis calls for a test of the use of self-verbalization in making decisions about television use. It is predicted that as observers are given an opportunity to "test out" the effect of self-verbalization at home, they will compare their results with those experienced by the model.

At posttest 1, it is predicted that there will be a greater proportion of subjects using self-verbalization in Group 2 (100% vicarious positive reinforcement) than in Group 3 (50% vicarious positive reinforcement). This is based upon reinforcement theory: the response (in this case, the use of self-verbalization) is strengthened by reinforcement. Observation of another person's reinforcing outcomes may affect the degree of imitation of the modeled behavior: the more frequent or strong the reinforcer, the greater the probability the behavior will be imitated (Bandura, 1971).

As time passes, however, if observers fail to obtain positive results in their own attempts at the behavior, they may become frustrated and not attempt to use self-verbalization again. Those who have observed a model always obtain positive results (those in the 100% vicarious reinforcement group) may become frustrated and not persevere in their own attempts. For this reason, it is expected that the percentage of subjects using self-verbalization in Group 2 will drop at posttest 2.

<u>Dependent variable</u>. Use of self-verbalization.

<u>Measure</u>.

Do you ask yourself questions before deciding whether to watch television?
Yes _____   No _____

<u>Statistical procedure</u>. Chi-square test of homogeneity of patterns of response to categories across groups.

H_2: There will be a difference among groups in the proportion of responses to categories of reasons for use (or non-use) of self-verbalization.

It is predicted that the frequency of statement of certain reasons for self-verbalization will differ among groups at testing points in the following ways: it is predicted that varying the percentage of vicarious reinforcement will have an effect upon the frequency of response to the category of reason for use or non-use of self-verbalization. It is expected that Group 2 will more frequently express that they ask themselves questions before deciding whether to view TV because it is good to consider goals in making decisions about use of free time (category two) at both posttest periods. Group 3 will not as frequently select category two as a reason for asking themselves questions.

This is predicted because Group 2 will have viewed the model more frequently reinforced for use of goal-related self-verbalization than Group 3. At posttest 2, however, it is predicted that Group 2's percentage of response to category one will decrease.

<u>Dependent variable</u>. Reasons for use or non-use of self-verbalization.

<u>Measure</u>.

Why or why not? (Relates to above question? Do you ask yourself questions before deciding whether to watch TV?)

(free response)

<u>Statistical procedure</u>. Chi-square test of homogeneity of patterns of response to categories across groups.

H_3: There will be a difference among groups in the proportion of response to categories of content of self-verbalization.
a) At posttest 1, Group 2 will more frequently practice goal-related self-verbalization;
b) At posttest 2, Group 2's proportion of response to goal-related content will decrease.

It is predicted that varying the percentage of vicarious reinforcement will have an effect upon the content of self-verbalization. It is expected that the self-verbalizations of Group 2 will be more goal-related (i.e., "Should I watch TV or do something else? Which would help me reach my goal?") than Group 3 at posttest 1. It is hypothesized that observers who view a model more frequently reinforced for using goal-related self-verbalization will be more likely to question whether viewing television would help them in achieving their own goals.

At posttest 2, this trend may reverse itself. If Group 2 subjects practice goal-related self-verbalization and are not reinforced for it, they may become discouraged after comparing these results to those

of the model. The frequency of use of goal-related self-verbalization would then drop for Group 2.

Specific predictions regarding the other categories will be made and discussed in Chapter IV.

Dependent variable. Content of self-verbalization.

Measure.

| What do you say to yourself? |
| (free response) |

Statistical procedure. Chi-square test of homogeneity of patterns of response to categories across groups.

H_4: There will be an interaction effect with regard to preference for viewing television versus participation in an alternative activity.

  a) At posttest 1, Group 2 will show greater preference for the alternative activity than Group 3, which, in turn, will show greater preference for the alternative activity than Group 1.

  b) At posttest 2, Group 3 will show greater preference for the alternative activity than Group 2, which, in turn, will show greater preference than Group 1.

This hypothesis calls for a test of the position of the observers towards "viewing television" as compared to alternative activities. It is predicted that Group 2 subjects, those who have seen a model reinforced 100% of the time for selecting alternative activities, will show a stronger preference for alternative activities at the time of the posttest 1.

It is predicted that this effect will diminish as time intervenes and the subjects have an opportunity to test out "preference for activities." Group 2 subjects will be more likely to decrease their

expression of that preference by the time of the posttest 2 measure.

It is predicted that Group 3 subjects will be more likely to persist

in expressing preference for alternative activities, having seen a

model alternately succeed and fail in obtaining positive results for

expressing that preference. Thus, they would not expect continuous

positive reinforcement for their own efforts.

Dependent variable. Preference for leisure time activities.

Measure. Fourteen dichotomous items of the following form:

> If you had an hour or two of free time, what do
> you think would be the best way for you to spend
> it? Circle your answer.
>
> Watch an adventure show   or   Read an adventure.

Statistical procedure. Repeated measures analysis of variance.

H_5: There will be an interaction effect of time and group
upon selection of activities for attainment of goals:
  a) At posttest 1, Group 2 (100% vicarious reinforcement)
     will more frequently select non-television viewing
     activities for attainment of goals than Group 3
     which, in turn, will more frequently select non-
     television activities than Group 1.
  b) At posttest 2, Group 3 (50% vicarious reinforcement)
     will more frequently select non-television viewing
     activities for attainment of goals than Group 2,
     which, in turn, will more frequently select non-
     television activities than Group 1.

It is predicted that Group 2 subjects will be more likely to

select goal-related activities at posttest 1. This, again, is based

upon reinforcement theory: observation of another person's reinforcing

outcomes may affect the degree of imitation of the modeled behavior.

Subjects in Group 2 will have seen the model select goal-related acti-

vities and be reinforced for that selection in all cases. It is pre-

dicted that the observers of that sequence will more frequently select

goal-related activities than observers who view a model select goal-related activities and be positively reinforced only 50% of the time.

As time intervenes, however, and Group 2 subjects may experience negative results after selection of goal-related activities, they may feel frustrated upon comparing their negative results with the model's always positive ones. For this reason, it is predicted that the frequency of selection of goal-related activities will decrease for Group 2. The frequency for Group 3 would either remain constant or increase with time. For this reason an interaction effect is hypothesized.

Dependent variable. Frequency of selection of alternative activities to attain goals.

Measure. Two items of the following form:

Susan's goal is to be a doctor. From each pair below, we would like to know which activity you think is more important for her and how much more important you think it is. Circle your answer.

Watching TV   or   Playing with friends

How much more important? Put an X after your answer.

Really a lot more _____
A lot more _____
Just a little more _____

(There are three pairs of choices for each item.)

Statistical procedure. Repeated measures analysis of variance.

H_6: Group 2 will more frequently select pro-social programming as a means of learning positive problem-solving behavior than Group 3, which, in turn, will more frequently select pro-social programming than Group 1 at posttest 1 and at posttest 2.

Group 2 observers will have seen the model reinforced in all situations for selecting goal-related activities. Again, as in other cases throughout this study, it is expected that observation of 100% positive reinforcement will be a stronger impetus for imitation of the behavior than observation of 50% positive reinforcement.

In this particular case, no interaction effect is hypothesized. One of the goals of the curriculum was to differentiate between pro- and anti-social programming and the way in which they each portray problem-solving behavior. This measure calls for subjects to distinguish between these types of programs and make a judgment as to which type would be a better means of learning problem-solving behavior. It is not expected that the ability to make this judgment will be affected by passage of time.

Dependent variable. Selection of program type as a means of achieving goals.

Measure. Six dichotomous items of the following form:

If one of your goals is to learn how to solve problems, which show would you watch in order to learn about good ways to solve problems? Circle your answer.		
Little House on the Prairie	or	Six Million Dollar Man

Statistical procedure. Repeated measures analysis of variance.

H_7: There will be an interaction effect of time and group upon preference for anti-social programming versus alternative activities:
  a) At posttest 1, Group 2 will show more frequent preference for the alternative activity than Group 3, which, in turn, will show more frequent preference for the alternative activity than Group 1;

b) At posttest 2, Group 3 will show more frequent pre-
ference for the alternative activity than Group 2,
which, in turn, will show more frequent preference
for the alternative activity than Group 1.

This hypothesis calls for a test of the subjects' choice between viewing "anti-social" television and participating in an alternative activity. It is predicted that subjects in the 100% vicarious rein-forcement condition will be more likely to show preference for the alternative activity at posttest 1. As in other areas throughout this study, however, it is predicted that this effect will reverse itself, given time to test out the behavior. Thus, those subjects who have viewed a model experience positive reinforcement each time she decides not to view television, will be more likely to become discouraged if their own efforts do not result in positive reinforce-ment, while preference expressed by Group 3 will either remain constant or increase. Therefore, at posttest 2, this preference will diminish. For this reason, an interaction effect is hypothesized.

Dependent variable. Preference of anti-social programming versus alternative activity.

Measure. Six dichotomous items of the following form:

If you had one hour of free time, which do you think would be the best way for you to spend it? Watch Wonder Woman   or   Read a good adventure book

Statistical procedure. Repeated measures analysis of variance.

The rationale for the following two hypotheses follows Hypo-thesis 9.)

H_8: Group 3 will display greater advocacy of use of self-verbalization than Group 2, which, in turn, will display greater advocacy than Group 1 at posttest 1 and at posttest 2.

Dependent variable. Advocacy of self-verbalization.

Measure. Four items of the following form:

Last night Susan had one hour of free time. She sat down and thought to herself: "What should I do? If I do my homework, I'll be ready if the teacher calls on me tomorrow. If I watch TV, I'll be able to talk to my friends about the program." Susan decided to do her homework.

The next day in class the teacher didn't even call on her. Susan felt bad. She wonders what she should do the next time.

IF YOU WERE SUSAN, WOULD YOU STILL THINK VERY CAREFULLY BEFORE MAKING YOUR DECISION WHETHER TO WATCH TV OR DO HOMEWORK?

Yes _____   No _____

Statistical procedure. Repeated measures analysis of variance.

H_9: Group 3 will display greater advocacy of selection of an alternative activity than Group 2, which, in turn, will display greater advocacy than Group 1, at posttest 1 and at posttest 2.

These two hypotheses call for a test of the expectancy-frustration hypothesis. It is predicted, based upon this hypothesis, that subjects in the 50% positive reinforcement condition will be more likely to advocate the use of self-verbalization and the selection of an alternative activity even if it has previously not resulted in positive outcomes. This is because they have viewed a model experience both positive and negative outcomes and would not expect consistent, positive outcomes. They would be more likely to advocate persistence

in the behavior than subjects who had viewed a model experience continuous (100%) positive outcomes.

Dependent variable. Advocacy of selection of alternative activity.

Measure. Four items of the following form:

(Preceded by vignette displayed under H_8.)   If you were Susan, what would you do next time?   Watch TV _____   Do homework _____

Statistical procedure. Repeated measures analysis of variance.

H_{10}: There will be a difference among groups in the proportion of responses to categories of reasons for advocacy of self-verbalization at posttest 1 and at posttest 2.

Again, this calls for a test of the expectancy-frustration hypothesis. It is predicted that Group 3 will more frequently advocate the practice of carefully thinking over decisions even though that careful thought does not always result in positive outcomes. They will have had the experience of seeing that even though failure may occur, it may be succeeded by positive outcomes the next time. For this reason, it is expected that Group 3 subjects will be more likely to advocate the use of careful decision-making even though it has previously resulted in non-positive outcomes.

Dependent variable. Reason for advocacy of use of self-verbalization.

Measure.

(Preceded by vignette and question outlined under H_8.)

Why (would you think it over carefully or not)?

___(free response)_____

Statistical procedure. Chi-square test of homogeneity of patterns of response across groups.

H_{11}: There will be a difference among groups in the proportion of response to categories of reasons for advocacy of choice of activity at posttest 1 and at posttest 2.

    a) Group 3 will more frequently express category 1* reasons for selection of an activity than Group 2.

    b) Group 2 will more frequently express category 4* reasons for selection of an activity than Group 3.

This hypothesis calls for a test of the <u>expectancy-frustration</u> <u>hypothesis</u>. It is predicted that those subjects who have viewed a model consistently reinforced after selection of an alternative activity over television (100% vicarious reinforcement condition) would more frequently state that they would advocate selection of television, after a <u>negative</u> experience. It is expected that the reason for this choice for those subjects would be so that they would not experience negative consequences again.

---

*Category 1: I would select (<u>the alternative activity</u>) because next time I might not experience negative consequences.
Category 4: I would select TV so I wouldn't experience negative consequences the next time.

It is also predicted that subjects in Group 3 (50% vicarious reinforcement) will be more likely to advocate selection of the alternative activity, even though that selection had previously resulted in negative outcomes.

These hypotheses are based upon the following argument: subjects will compare the results of selection of the alternative activity by the child in the written vignette to the results experienced by the model in the instructional unit. Group 2 subjects will be more likely to expect continuous positive results for the selection of an alternative activity. Upon comparing the negative results experienced by the child in the vignette to the positive results experienced by the model, they will recommend that the child in the vignette not select the alternative activity again, so as not to experience negative results. Those subjects in Group 3 will be more likely to advocate a repeated selection of the alternative activity, not expecting positive results in every case.

Dependent variable. Reason for selection of activity.

Measure. Four items of the following form:

> (Preceded by vignette presented in H_8.)
> Why (would you select TV or the other activity)?
>   (free response)
>
> _____

Statistical procedure. Chi-square test of homogeneity of patterns of response to categories across groups.

H_{12}: Group 3 will experience a greater reduction in total number of hours of viewing, and an increase in total number of hours spent in alternative activities, than Group 2, which will experience a greater reduction in viewing and an increase in alternative activities than Group 1.

Again, the <u>expectancy-frustration hypothesis</u> would support this prediction. If the observers are given an opportunity to "test out" the decision-making strategies at home, they will compare their results to those accrued by the model. If they fail to obtain positive results and have never seen the model "fail," they may become frustrated and not attempt any more trials. Those who have observed a model "fail" may not become as frustrated and may persevere in their attempts.

<u>Dependent variable</u>. Number of hours of television viewing

<u>Measure</u>. See Appendix D.

<u>Statistical procedure</u>. Repeated measures analysis of variance.

H_{13}: There will be a difference among groups in the proportion of use of "conscious decision" at posttest 1 and at posttest 2.

This hypothesis is again based upon the <u>expectancy-frustration hypothesis</u>. (See rationale for H_{12}.) Those who may experience negative outcomes for use of "conscious" decision-making strategies and have only viewed a model experience positive reinforcement (Group 2) will be more likely to cease the behavior, after comparing their own negative outcomes with those of the model.

<u>Dependent variable</u>. Reasons for viewing television.

<u>Measure</u>. Twenty items of the following form:

```
┌─────────────────────────────────────────────────────────┐
│  4.  Did you watch ____NOVA____ ?                         │
│                                                           │
│      Yes _____          No _____                  │
│                                                           │
│      __I like it.           __I don't like it.            │
│                                                           │
│      __I had nothing else   __It wasn't important         │
│        to do.                 for me to watch it.         │
│                                                           │
│      __I don't know why I   __I don't know why I          │
│        watched it.            didn't watch it.            │
│                                                           │
│      __It was important for __Other _____            │
│        me to watch it.                                    │
│                                                           │
│      __Other _____                                │
└─────────────────────────────────────────────────────────┘
```

Statistical procedure. Chi-square test of homogeneity of patterns of response to categories across groups.

H_{14}: There will be a difference among groups in the proportion of subject recall of self-verbalization used by the model at posttest 1 and at posttest 2.

This hypothesis calls for a test of recall of the self-verbalization used in the instructional unit. It is expected that Group 2 will be more likely to recall self-verbalization used by the model than Group 3. This is based upon reinforcement theory: the response (in this case, the actual content of self-verbalization) is strengthened by reinforcement. Observation of the model's reinforcing outcomes for self-verbalizing may strengthen the likelihood of the observer's recall of the behavior. The more frequent the reinforcement (100% vicarious positive reinforcement versus 50% vicarious positive reinforcement) the greater the likelihood of learning the content of the self-verbalization used by the model.

Dependent variable. Recall of self-verbalization.

<u>Measure</u>.

What kinds of things did Jill say to herself before deciding whether or not to watch TV? <u> (free response)   </u>

<u>Statistical procedure</u>. Chi-square test of homogeneity of patterns of response to categories across groups.

Chapter IV

PRESENTATION AND ANALYSIS OF THE DATA

Results in this chapter are presented in the order of the stated
hypotheses in Chapter III.

The criterion for statistical significance was set at .01, as stated
earlier. Given the considerable number of statistical tests performed
and the accompanying threat of finding a significant difference by
chance, it was considered advisable to select a conservative alpha
level. Tables will be displayed for all data.

H_1: There will be a difference among groups in the percentage
of students using self-verbalization at each posttest:
 a) At posttest 1, a greater proportion of Group 2
 subjects will use self-verbalization than Group 3,
 which will be greater than Group 1;
 b) At posttest 2, a greater proportion of Group 3
 subjects will use self-verbalization than Group 2,
 which will be greater than Group 1.

It was expected that the treatments would have a differential
effect upon the subjects at each posttest time. In analyzing data
for this hypothesis the dependent variable, use of self-verbalization,
was cross tabulated with treatment group, yielding Tables 4 - 6. These
tables display the reported frequency of use of self-verbalization
and the proportion (or percentage) of subjects per group who used
self-verbalization. The figure representing the proportion provides
the data for the tests of statistical significance.

Table 4. Use of self-verbalization: pretest.

		No	Yes
Group 1*	Frequency	12	8
	Percent	60	40
Group 2	Frequency	9	9
	Percent	50	50
Group 3	Frequency	5	13
	Percent	27.8	72.2

x^2 = 4.09; df = 2; significance = .13

Table 5. Use of self-verbalization: posttest 1.

		No	Yes
Group 1*	Frequency	9	11
	Percent	45	55
Group 2	Frequency	5	13
	Percent	27.8	72.2
Group 3	Frequency	4	14
	Percent	22.2	77.8

x^2 = 2.49; df = 2; significance = .29

Table 6. Use of self-verbalization: posttest 2.

		No	Yes
Group 1*	Frequency	9	11
	Percent	45	55
Group 2	Frequency	7	11
	Percent	38.9	61.1
Group 3	Frequency	4	14
	Percent	22.2	77.8

x^2 = 2.26; df = 2; significance = .32

*Group 1 = control; Group 3 = 50% positive, 50% negative consequences;
 Group 2 = 100% positive consequences.

A χ^2 test of statistical significance of the homogeneity of the patterns of response to the categories was then performed. This test examines the proportion of subjects per group responding to the categories and tests to see if the patterns of responses differ statistically. If the pattern of response for any one group differed in a statistical sense, the χ^2 coefficient will be at a level which is statistically significant.

As can be seen from Tables 4 - 6, none of the tests was statistically significant. The test which most closely approached significance was that done for the pretest. As can be seen from Table 4, Group 1 more frequently expressed non-use of self-verbalization, as opposed to Group 3 which more frequently expressed use of self-verbalization. Group 2 was evenly divided. It is unknown why the groups were so disparate at this stage.

By examining the figures across time, it would appear that the treatments had little effect upon the use of self-verbalization by the subjects. Group 3 remained relatively stable across all three testing points; Group 2 increased at posttest 2, then decreased; Group 1 also increased and remained the same at posttest 2.

It is concluded from these results that the patterns of response for each group at each posttest did not differ statistically. Thus, no support is found for the research hypothesis one.

H_2: There will be a difference among groups in the proportion of responses to categories of reasons for use (or non-use) of self-verbalization.

It was expected that the treatments would have an effect upon reasons for use of self-verbalization. At posttest 1, it was predicted

that the highest proportion of subjects expressing category 1 reasons would be by Group 2. It was also predicted that this would remain constant on posttest 2.

Categories one through four in Tables 7 - 9 represent the following reasons:

Category 1: It is good to ask myself questions before deciding whether to view television. By doing this, I can decide whether doing something else would better help me to achieve a goal.

Category 2: I know I'm going to watch TV. I just ask myself what I'm going to watch.

Category 3: I don't know why I do or don't.

Category 4: I don't have to ask myself questions. I know what I'm going to watch.

As can be seen from the tables, only the posttests yielded significant χ^2 coefficients. It should be noted here that the pretest frequencies do appear to differ, although not significantly when compared to the criterion set for this study. Examination of Table 7 indicates that the greatest difference lies between Group 1 when opposed to each of the other groups. Category 3, "Don't know" would account for this, with the majority of responses of subjects in Group 1 in that category. It is unknown why Group 1 subjects more frequently responded "Don't know" at the pretest.

Further examination of Table 8 reveals that the patterns in the posttests do differ. The greatest proportion of subjects responding to category 1 was from Group 3. At the pretest, Group 3's greatest percentage of response was in the "Don't know" category, followed

Table 7. Pretest: frequencies and percentages of responses to reasons for use or non-use of self-verbalization.

		Reasons			
		1	2	3	4
Group 1*	Frequency	2	0	16	1
	Percent	10.5	0	84.2	5.3
Group 2	Frequency	2	4	7	3
	Percent	12.5	25	43.8	18.8
Group 3	Frequency	3	4	6	5
	Percent	16.7	22.2	33.3	27.8

$x^2 = 12.46$; df = 6; significance = .05

Table 8. Posttest 1: frequencies and percentages of responses to reasons for use or non-use of self-verbalization.

		Reasons			
		1	2	3	4
Group 1	Frequency	2	0	17	1
	Percent	10	0	85	5
Group 2	Frequency	6	2	5	4
	Percent	35.3	11.8	29.4	23.5
Group 3	Frequency	11	2	3	2
	Percent	53.3	13.3	20	13.3

$x^2 = 19.63$; df = 6; significance = .003

Table 9. Posttest 2: frequencies and percentages of responses to reasons for use or non-use of self-verbalization.

		Reasons			
		1	2	3	4
Group 1	Frequency	0	1	18	1
	Percent	0	5	90	5
Group 2	Frequency	7	2	3	6
	Percent	38.9	11.1	16.7	33.3
Group 3	Frequency	7	0	8	3
	Percent	38.9	0	44.4	16.7

$x^2 = 24.25$; df = 6; significance = .0005
*1 = control; 3 = 50% positive, 50% negative consequences; 2 = 100% positive consequences.

by "I don't have to ask myself questions". The treatment appears to have had an effect in shifting the reasons for self-verbalization by Group 3 in the desired direction.

Group 2 percentages were more equal across categories: the greatest percent of response was to category 1; however, categories 3 and 4 received only slightly fewer responses.

For Group 3 clearly the highest percentage was in the "Don't know" category. Percentages for Group 1 remained fairly constant across time.

Table 9 displayed data for posttest 2: Groups 2 and 3 provided the same percentage of respondents to cateogry 1. It appears from the tables that the difference lies at categories 3 and 4, with the percentages reversing themselves: Group 3 more frequently responded with category 3 reasons while Group 2 more frequently responded with category 4 reasons.

The category of greatest interest to the researcher is category 1. It would appear that 50% vicarious reinforcement (Group 3) had the greatest immediate effect in producing category 1 responses, but when time intervened, this response dropped slightly. It would appear that 100% vicarious reinforcement (Group 2) had less immediate effect in increasing the percentage or category 1 respondents, but, over time, the percentage increased slightly.

Although the χ^2 coefficients for posttest 1 and posttest 2 are significant, indicating significant differences, the data do not support the predicted change of direction in category response.

H_3: There will be a difference among groups in the proportion of response to categories of content of self-verbalization.
   a) At posttest 1, Group 2 will more frequently practice goal-related self-verbalization;
   b) At posttest 2, Group 2's proportion of response to goal-related content will decrease.

The questions examined here were: Did varying the percentage of vicarious reinforcement have an effect upon the content of self-verbalization? Did self-verbalization change as a result of exposure to the treatment?

The dependent variable, content of self-verbalization, was cross-tabulated with treatment group, yielding Tables 10 - 12.

The categories 1, 2, 3, and 4 represent the following categories of content of self-verbalization:

   1 - I don't say anything (I don't ask myself questions).

   2 - Is the program helpful in reaching my goals?

   3 - I don't know what I say to myself.

   4 - I know I'm going to watch TV. Should I watch program X or Y?

The tables display both the frequency of response to the category and the proportion per group of respondents.

As can be seen from the tables, the χ^2 values were significant beyond the .01 level for both the posttests. At the pretest, the patterns of response appeared to be similar.

At posttest 1, the greatest percentage of Group 2 reported that they considered their goals in asking themselves questions about whether to view TV. Group 2 also made a gain of 57% from the pretest to posttest 1 in responding to category 2. Groups 2 and 3 responded with similar percentages to category 2, above Group 1. Group 1 most

Table 10. Pretest: content of self-verbalization.

| | | Reasons | | | |
		1	2	3	4
Group 1*	Frequency	12	2	1	5
	Percent	60	10	5	25
Group 2	Frequency	8	1	0	5
	Percent	57.1	7.1	0	35.7
Group 3	Frequency	5	6	1	4
	Percent	31.3	37.5	6.3	25

$x^2 = 7.90$; df = 6; significance = .25

Table 11. Posttest 1: content of self-verbalization.

| | | Reasons | | | |
		1	2	3	4
Group 1	Frequency	8	2	9	1
	Percent	40	10	45	5
Group 2	Frequency	5	11	0	1
	Percent	29.4	64.7	0	5.9
Group 3	Frequency	4	9	3	1
	Percent	23.5	52.9	17.6	5.9

$x^2 = 17.11$; df = 6; significance = .009

Table 12. Posttest 2: content of self-verbalization.

| | | Reasons | | | |
		1	2	3	4
Group 1	Frequency	9	2	6	3
	Percent	45	10	30	15
Group 2	Frequency	7	8	1	0
	Percent	43.8	50	6.3	0
Group 3	Frequency	4	11	2	0
	Percent	23.5	64.7	11.8	0

$x^2 = 17.21$; df = 6; significance = .009

*1 = control; 3 = 50% positive, 50% negative consequences; 2 = 100% positive consequences.

frequently responded either that they did not know what they said to themselves or that they did not ask themselves questions.

At posttest 2, Group 3 most frequently responded that they considered their goals in asking themselves questions about whether or not to view television. This represented an increase from posttest 1, while Group 2 dropped in this category. Group 2 also increased in the percentage of subjects who did not ask themselves questions.

The data indicate support of the hypothesis. It was predicted that Group 2 subjects would more frequently practice goal-related self-verbalization at posttest 1, decreasing at posttest 2. This, in fact, did occur. The proportion of response to category 2 reversed itself for both Groups 2 and 3. Both Groups 2 and 3 decreased to 0 the amount of asking themselves whether they should watch one program or another. A decrease in category 4 and an increase in category 2 indicates that the subjects began considering alternative activities as well as viewing television. Thus, support is found for the research hypothesis 3.

H_4: There will be an interaction effect with regard to preference for viewing television versus participation in an alternative activity.

    a) At posttest 1, Group 2 will show greater preference for the alternative activity than Group 3, which, in turn, will show greater preference for the alternative activity than Group 1.

    b) At posttest 2, Group 3 will show greater preference for the alternative activity than Group 2, which, in turn, will show greater preference than Group 1.

Table 13 presents the mean scores for all groups at all three measurement points for preference for leisure-time activities. Table 14 presents the results of the analysis of variance conducted to test Hypothesis 4.

Table 13. Pre and post treatment mean scores for preference for leisure time activity.

	$\bar{X}_{pretest}$	$\bar{X}_{posttest\ 1}$	$\bar{X}_{posttest\ 2}$	N
Group 1*	.59	.59	.53	20
Group 2	.59	.77	.78	18
Group 3	.72	.73	.74	18

*1 = control; 3 = 50% positive, 50% negative consequences; 2 = 100% positive consequences.

Table 14. Repeated measures analysis of variance for preference for leisure time activities.

Source of Variation	Sums of Squares	df	Mean Squares	F	P
Groups	.94	2	.47	2.86	> .01
Subjects within groups	8.74	53	.16		
Repeated measures	.12	2	.06	3.67	> .01
Repeated measures by group interaction	.36	4	.09	5.42	< .01
Repeated measures by subjects within groups interaction	1.75	106	.02		
Total	11.91	167			

In Table 14 the analysis of variance table reflects the influence of the treatments upon preference for leisure time activities. The main effects for groups (treatments) and repeated measures are non-significant at the level specified. The interaction effect is significant, which warrants further examination of the data.

As can be seen in Table 13, the greatest increase in preference for alternative activities from pretest to posttest 1 is displayed by Group 2. This is as predicted by the hypothesis. At posttest 2, Groups 2 and 3 show equal increases. Group 1, the control group, shows a decrease in preference for alternative activities.

It was predicted by the hypothesis that the Group 2 mean would decrease at posttest 2, while the Group 3 mean would continue to increase. As can be seen by Figure 4, this was not the case. The increase for Groups 2 and 3 was equal from posttest 1 to posttest 2.

Although the interaction effect is significant, the interaction does not occur as hypothesized. As can be seen from the graph, at posttest 1, Group 2 displays a greater preference for alternative leisure time activities. Both groups continue to increase preference for alternative activities. It was predicted that Group 2 mean would decrease, while Group 3 would remain constant or increase. The conclusion which may be drawn is that the 100% vicarious reinforcement condition creates a greater initial display of preference for activities alternative to television. This preference does not increase at the same rate and by posttest 2 the increase is equal to Group 3's posttest 1 - posttest 2 increase. Although a significant interaction effect was found, the data do not provide support for research hypothesis 4.
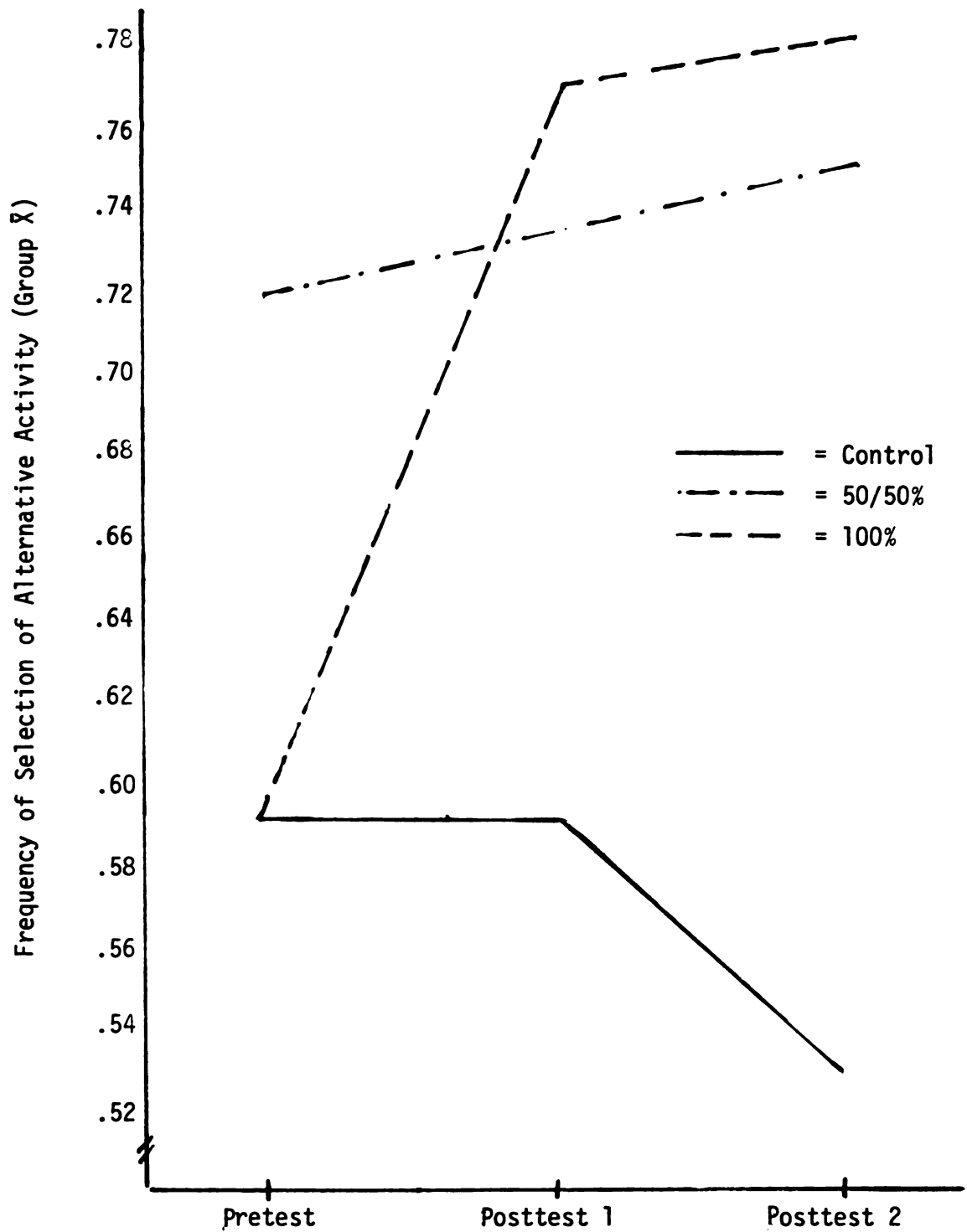
Figure 4. Television viewing versus alternative activity.

H_5: There will be an interaction effect of time and group upon selection of activities for attainment of goals:
  a) At posttest 1, Group 2 (100% vicarious reinforcement) will more frequently select non-television viewing activities for attainment of goals than Group 3 which, in turn, will more frequently select non-television activities than Group 1.
  b) At posttest 2, Group 3 (50% vicarious reinforcement) will more frequently select non-television viewing activities for attainment of goals than Group 2, which, in turn, will more frequently select non-television activities than Group 1.

Table 15 presents the mean scores for all three groups at all three measurement points for selection of goal-related activities. Table 16 presents the results of the repeated measures analysis of variance conducted to test Hypothesis 5. As can be noted in the table, the analysis of variance test for groups was significant at .01. Scheffé post hoc contrasts between pairs yielded non-significant tests (Table 17). No support is found for the research hypothesis 5.

H_6: Group 2 will more frequently select pro-social programming as a means of learning positive problem-solving behavior than Group 3, which, in turn, will more frequently select pro-social programming than Group 1 at posttest 1 and at posttest 2.

Table 18 presents the means for all three groups for all three measurement points. In Table 19 the analysis of variance table reflects the influence of the treatments upon preference for pro or anti-social programming as a means of learning positive problem-solving behavior.

As can be noted in the table, both the analysis of variance tests for groups and measures were significant.

Scheffé post hoc analyses were then performed on contrasts of interest to determine where the significant differences were. The Scheffé post hoc analyses that were performed yielded significant differences between the following contrasts: a) posttest 1 versus

Table 15. Pre and post treatment mean scores for selection of activities for goal attainment.

	$\bar{X}_{pretest}$	$\bar{X}_{posttest\ 1}$	$\bar{X}_{posttest\ 2}$	N
Group 1*	4.19	4.23	3.99	20
Group 2	4.50	4.59	4.56	18
Group 3	4.60	4.90	5.19	18

*1 = control; 3 = 50% positive, 50% negative consequences; 2 = 100% positive consequences.

Table 16. Repeated measures analysis of variance for selection of activities for goal attainment.

Source of Variation	Sums of Squares	df	Mean Squares	F	P
Groups	16.56	2	8.28	6.65	< .01
Subjects within groups	66.02	53	1.25		
Repeated measures	.73	2	.36	1.13	> .01
Repeated measures by group interaction	3.13	4	.78	2.43	> .01
Repeated measures by subjects wtihin groups interaction	34.13	106	.32		
Total	120.56	167			

Table 17. Scheffé post hoc contrasts for main effect group for selection of activities for goal attainment, S = 3.17.

	$\hat{\psi}$	$\sqrt{Var\ \hat{\psi}}$	Interval		Significance
ψ_1 (Group 2 vs. Group 1)	.14	.37	-1.04	1.31	> .01
ψ_2 (Group 3 vs. Group 1)	.14	.37	-0.77	1.57	> .01
ψ_3 (Group 3 vs. Group 2)	.002	.39	-1.23	1.24	> .01

Table 18. Pre and post treatment mean scores for selection of pro versus anti-social programming as a means of solving problems.

	$\bar{X}_{pretest}$	$\bar{X}_{posttest\ 1}$	$\bar{X}_{posttest\ 2}$	N
Group 1	.47	.48	.57	20
Group 2	.51	.86	.85	18
Group 3	.57	.89	.87	18

Table 19. Repeated measures analysis of variance for preference of pro versus anti-social programming as a means of solving problems.

Source of Variation	Sums of Squares	df	Mean Squares	F	P
Groups	2.54	2	1.27	8.05	< .01
Subjects within groups	8.35	53	.16		
Repeated measures	2.03	2	1.01	27.93	< .01
Repeated measures by group interaction	.73	4	.18	5.06	> .01
Repeated measures by subjects within groups interaction	3.85	106	.04		
Total	17.50	167			

pretest and b) posttest 2 versus pretest. This would indicate that both treatments had both an immediate and enduring effect upon this variable, but that there was no significant gain between the two post-tests. The non-significant post hoc contrasts for the main effect of groups indicate that comparisons of interest did not differ significantly from each other. This finding indicates that there was no differential effect among groups. (See Tables 20 and 21.) Thus, no support was found for the research hypothesis 6.

H_7: There will be an interaction effect of time and group upon preference for anti-social programming versus alternative activities:
a) At posttest 1, Group 2 will show more frequent preference for the alternative activity than Group 3, which, in turn, will show more frequent preference for the alternative activity than Group 1;
b) At posttest 2, Group 3 will show more frequent preference for the alternative activity than Group 2, which, in turn, will show more frequent preference for the alternative activity than Group 1.

The questions addressed by this hypothesis were: Did the treatments have a differential effect upon the subjects' selection of free time activities and was this affected by passage of time?

Table 22 presents the means for all three groups at all three measurement points. In Table 23 the analysis of variance table reflects the influence of the treatments upon the dependent variable.

As can be seen from the ANOVA table, the test for the main effect of repeated measures was significant. Scheffé post hoc analyses were then performed on contrasts of interest to determine where the significant differences were.

As can be noted in Table 24, all three contrasts for repeated measures were significant. This would indicate that the combined

Table 20. Scheffé post hoc contrasts for main effect group for selection of pro versus anti-social programming, S = 3.17.

	$\hat{\psi}$	$\sqrt{Var\ \hat{\psi}}$	Interval		Significance
ψ_1 (Group 2 vs. Group 1)*	.24	.13	-.17	.65	> .01
ψ_2 (Group 3 vs. Group 1)	.27	.13	-.14	.68	> .01
ψ_3 (Group 3 vs. Group 2)	.03	.14	-.40	.47	> .01

*1 = control; 3 = 50% positive, 50% negative consequences; 2 = 100% positive consequences.

Table 21. Scheffé post hoc contrasts for main effect repeated measures, S = 3.17.

	$\hat{\psi}$	$\sqrt{Var\ \hat{\psi}}$	Interval		Significance
ψ_1 (Posttest 1 vs. Pretest)	.22	.04	.11	.33	< .01
ψ_2 (Posttest 2 vs. Pretest)	.24	.04	.11	.34	< .01
ψ_3 (Posttest 2 vs. Posttest 1)	.02	.04	-.09	.14	> .01

Table 22. Pre and post treatment mean scores for preference for alternative activities versus anti-social programming.

	$\bar{X}_{pretest}$	$\bar{X}_{posttest\ 1}$	$\bar{X}_{posttest\ 2}$	N
Group 1*	.44	.44	.38	20
Group 2	.43	.68	.55	18
Group 3	.45	.66	.69	18

Table 23. Repeated measures analysis of variance for preference of anti-social programming versus alternative activities.

Source of Variation	Sums of Squares	df	Mean Squares	F	P
Groups	1.00	2	.50	2.05	> .01
Subjects within groups	12.88	53	.24		
Repeated measures	.59	2	.29	8.23	< .01
Repeated measures by group interaction	.59	4	.15	4.16	> .01
Repeated measures by subjects within groups interaction	3.78	106	.04		
Total	18.83	167			

Table 24. Scheffé post hoc contrasts for main effect repeated measures for alternative activities versus anti-social programming, S = 3.17.

	$\hat{\psi}$	$\sqrt{Var\ \hat{\psi}}$	Interval		Significance
ψ_1 (Posttest 1 vs. Pretest)	.14	.04	.11	.18	< .01
ψ_2 (Posttest 2 vs. Pretest)	.09	.04	.06	.13	< .01
ψ_3 (Posttest 1 vs. Posttest 2)	.05	.04	.02	.09	< .01

*1 = control; 3 = 50% positive, 50% negative consequences; 2 = 100% positive consequences.

mean for posttest 1 was significantly different from the pretest mean. In examining the data, it may be interpreted that the increase in the means for Groups 2 and 3 are causing this significance. Thus, because the main effect for groups was not significant, it may be said that the treatments had an immediate effect upon preference for alternative activities as opposed to anti-social television, but that there was not a differential effect between groups.

The contrast between posttest 2 and the pretest was also significant. Even though the mean for Group 1, the control group, decreased, the combined mean for the three groups was still significantly greater than the pretest mean. Again, although the main effect of groups was not significant, it may be seen from the trends in the data that the significant difference was more likely because of the increase in the means of Groups 2 and 3.

The contrast between the two posttests was also significant, indicating that the combined posttest 2 mean significantly decreased from posttest 1. Both groups 1 and 2 decreased their preference for alternative activities; Group 3 continued to increase. The main effect of groups was not significant; however, the overall mean for posttest 2 did significantly decrease from posttest 1. No support was found for the research hypothesis 7.

H_8: Group 3 will display greater advocacy of use of self-verbalization than Group 2, which, in turn, will display greater advocacy than Group 1 at posttest 1 and at posttest 2.

Table 25 presents the means for each group at each measurement point. Table 26 presents the analysis of variance test for this dependent variable.

Table 25. Pre and post treatment mean scores for advocacy of self-verbalization

	$\bar{X}_{pretest}$	$\bar{X}_{posttest\ 1}$	$\bar{X}_{posttest\ 2}$	N
Group 1	.75	.75	.74	20
Group 2	.83	.85	.81	18
Group 3	.94	.99	.96	18

Table 26. Repeated measures analysis of variance for advocacy of self-verbalization.

Source of Variation	Sums of Squares	df	Mean Squares	F	P
Groups	1.35	2	.68	3.85	> .01
Subjects within groups	9.30	53	.18		
Repeated measures	.02	2	.01	.26	> .01
Repeated measures by group interaction	.01	4	.003	.08	> .01
Repeated measures by subjects within groups interaction	3.92	106	.04		
Total	14.60	167			

As can be seen from the table, none of the ANOVA tests was significant. This would indicate that the treatment was not strong enough to effect a statistically significant difference among groups. No support was found for the research hypothesis 8.

H_9: Group 3 will display greater advocacy of selection of an alternative activity than Group 2, which, in turn, will display greater advocacy than Group 1, at posttest 1 and at posttest 2.

Table 27 presents the means for all groups at all three points in time. Table 28 represents the analysis of variance for this dependent variable.

As can be seen from the ANOVA table, none of the tests was significant. The data do not support the research hypothesis 9, although the trends are in the predicted direction at posttest 1. These trends reversed at posttest 2.

H_{10}: There will be a difference among groups in the proportion of responses to categories of reasons for advocacy of self-verbalization at posttest 1 and at posttest 2.

Upon examination of subject responses to this item, it appeared to the researcher that the subjects did not understand the intent of the item. Their responses to this item, rather than explaining why they would or would not advocate self-verbalization, more closely responded to the next item on the questionnaire: "Why would you view TV or participate in an alternative activity?"

Thus, the data for this item are considered invalid and will not be discussed.

Table 27. Pre and post treatment mean scores for advocacy of selection of activity.

	$\bar{X}_{pretest}$	$\bar{X}_{posttest\ 1}$	$\bar{X}_{posttest\ 2}$	N
Group 1	.56	.49	.59	20
Group 2	.60	.51	.54	18
Group 3	.61	.74	.58	18

Table 28. Repeated measures analysis of variance for advocacy of selection of activity.

Source of Variation	Sums of Squares	df	Mean Squares	F	P
Groups	.34	2	.17	.55	> .01
Subjects within groups	16.21	53	.31		
Repeated measures	.01	2	.01	.14	> .01
Repeated measures by group interaction	.40	4	.10	2.64	> .01
Repeated measures by subjects within groups interaction	4.04	106	.04		
Total	21.00	167			

H_{11}: There will be a difference among groups in the proportion of response to categories of reasons for advocacy of choice of activity at posttest 1 and at posttest 2.

  a) Group 3 will more frequently express category 1* reasons for selection of an activity than Group 2.

  b) Group 2 will more frequently express category 4* reasons for selection of an activity than Group 3.

There were four questionnaire items providing data for this hypothesis. For each of these items, the dependent variable, reason for advocacy of selection of activity, was cross-tabulated with treatment group.

There were four final categories of response to this item. These are defined below:

Item a: 1. I would do my homework because the teacher might call on me next time.

    2. I would do my homework because it's important for my goals.

    3. I don't know.

    4. I would watch TV because the teacher didn't call on me last time.

Item b: 1. I would play kickball because you might not hit the window again.

    2. I would play kickball because it's important for my goals.

    3. I don't know.

    4. I would watch TV so I wouldn't break the window again.

Item c: 1. I would make breakfast because I might not get in trouble again.

    2. I would make breakfast because it's important for me to do something nice for my parents (important for my goals).

---

*Category 1: I would select (the alternative activity) because next time I might not experience negative consequences.
Category 4: I would select (TV) so I wouldn't experience negative consequences the next time.

3. I don't know.

4. I would watch TV so I wouldn't get in trouble again.

Item d: 1. I would go shopping because I might not fall again.

2. I would go shopping because it's important for my goals.

3. I don't know.

4. I would watch TV because if I go shopping I might fall again.

Each of these items will be discussed separately.

<u>Item a</u>: As can be seen from Tables 29 - 31, the χ^2 coefficients for posttest 1 and posttest 2 were statistically significant, which indicates that the percentages of response to the categories were statistically different from each other.

At posttest 1, response category 2 (I'd do homework - it's important for my goals) received the greatest response from Group 2; category 1 (I'd do homework - the teacher might call on me next time) received the greatest response from Group 3. Group 1 responded with equal frequency to categories 1 and 3.

The second highest response category also differed for the groups: for Group 2, categories 1 and 3 represented the second highest frequencies; for Group 3, categories 2 and 4 each received one response, which was the second highest.

At posttest 2, the order of the percentages for Groups 1 and 3 remained constant; Group 2, however, increased the frequency of response to category 1, equalizing with category 2. The data for item a do support the research hypothesis 11 at posttest 1. This support was not found at posttest 2.

Table 29. Pretest: Item A - reasons for selection of activity.

		Reasons			
		1	2	3	4
Group 1*	Frequency	11	3	5	1
	Percent	55	15	25	5
Group 2	Frequency	8	4	4	0
	Percent	50	25	25	0
Group 3	Frequency	11	5	0	2
	Percent	61.1	27.8	0	11.1

x^2 = 7.37; df = 6; significance = .29

Table 30. Posttest 1: Item A - reasons for selection of activity.

		Reasons			
		1	2	3	4
Group 1	Frequency	8	1	8	2
	Percent	42.1	5.3	42.1	10.5
Group 2	Frequency	3	6	3	2
	Percent	21.4	42.9	21.4	14.3
Group 3	Frequency	13	1	0	1
	Percent	86.7	6.7	0	6.7

x^2 = 21.61; df = 6; significance = .001

Table 31. Posttest 2: Item A - reasons for selection of activity.

		Reasons			
		1	2	3	4
Group 1	Frequency	9	0	10	0
	Percent	47.4	0	52.6	0
Group 2	Frequency	5	5	2	1
	Percent	38.5	38.5	15.4	7.7
Group 3	Frequency	11	1	0	2
	Percent	78.6	7.1	0	14.3

x^2 = 23.50; df = 6; significance = .0006

*1 = control; 3 = 50% positive, 50% negative consequences; 2 = 100% positive consequences.

Item b: The χ^2 coefficients for posttest 1 and posttest 2 were statistically significant, as can be seen in Tables 32 - 34.

The greatest percentages of response at posttest 1 were in different categories for each group: for Group 1, the greatest percentage of response was for category 3 (I don't know); for Group 2, the greatest percentage of response was for category 4 (I'd watch TV so I would not break the window again); for Group 3, it was in category 1 (I'd play kickball, because I might not hit the window again).

At posttest 2, however, these percentages changed: Groups 2 and 3 both displayed the greatest percentage of response to category 1; Group 1's greatest response remained in category 3. This indicated a change for Group 2 from category 4 to category 1. The data from item b do support the research hypothesis 11 at posttest 1. This support was not found at posttest 2.

Item c: Data for item c are presented in Tables 35-37. The χ^2 coefficient for posttest 2 was statistically significant but not for posttest 1. The greatest percentage of response for Group 1 was in the "I don't know" category; for Group 2, it was "I'd watch TV so I wouldn't get in trouble again"; for Group 3, it was equally split between category 1, "I'd make breakfast - I might not get in trouble again" and 4, "I'd watch TV so I wouldn't get in trouble again." The data for item c do not support the research hypothesis 11.

Item d: As seen in Tables 38 - 40, the χ^2 coefficients for all three tests were statistically significant. For this reason, it would be inappropriate to state the treatments caused the heterogeneity in the patterns of response at the posttest. It may be more appropriate to examine the shift in response across time. Group 1 experienced

Table 32. Pretest: Item B - reason for advocacy of selection of activity.

		Reason			
		1	2	3	4
Group 1*	Frequency	3	0	6	7
	Percent	18.8	0	37.5	43.8
Group 2	Frequency	3	2	2	8
	Percent	18.8	12.5	12.5	50.0
Group 3	Frequency	4	3	1	7
	Percent	25.0	18.8	6.3	43.8

x^2 = 8.76; df = 8; significance = .36

Table 33. Posttest 1: Item B - reason for advocacy of selection of activity.

		Reason			
		1	2	3	4
Group 1	Frequency	3	0	12	4
	Percent	15.8	0	63.2	21.1
Group 2	Frequency	3	2	2	9
	Percent	18.8	12.5	12.5	56.3
Group 3	Frequency	9	3	0	4
	Percent	56.3	18.8	0	25.0

x^2 = 27.26; df = 6; significance = .0001

Table 34. Posttest 2: Item B - reason for advocacy of selection of activity.

		Reason			
		1	2	3	4
Group 1	Frequency	4	0	14	0
	Percent	22.2	0	77.8	0
Group 2	Frequency	7	1	2	3
	Percent	53.8	7.7	15.4	23.1
Group 3	Frequency	7	3	2	4
	Percent	43.8	18.3	12.5	25.0

x^2 = 21.92; df = 6; significance = .001

*1 = control; 3 = 50% positive, 50% negative consequences; 2 = 100% positive consequences.

Table 35. Pretest: Item C - reason for advocacy of selection of activity (TV or make breakfast).

		Reason			
		1	2	3	4
Group 1*	Frequency	1	1	12	3
	Percent	5.9	5.9	70.6	17.6
Group 2	Frequency	3	3	4	5
	Percent	20.0	20.0	26.7	33.3
Group 3	Frequency	5	2	1	6
	Percent	35.7	14.3	7.1	42.9

x^2 = 15.40; df = 6; significance = .02

Table 36. Posttest 1: Item C - reason for advocacy of selection of activity.

		Reason			
		1	2	3	4
Group 1	Frequency	3	2	11	3
	Percent	15.8	10.5	57.9	15.8
Group 2	Frequency	4	2	3	7
	Percent	25.0	12.5	18.8	43.8
Group 3	Frequency	6	1	2	4
	Percent	46.2	7.7	15.4	30.8

x^2 = 10.89; df = 6; significance = .09

Table 37. Posttest 2: Item C - reason for advocacy of selection of activity.

		Reason			
		1	2	3	4
Group 1	Frequency	3	0	14	1
	Percent	16.7	0	77.8	5.6
Group 2	Frequency	6	0	2	7
	Percent	40.0	0	13.3	46.7
Group 3	Frequency	5	3	2	5
	Percent	33.3	20.0	13.2	33.3

x^2 = 26.14; df = 6; significance = .0002

*1 = control; 3 = 50% positive, 50% negative consequences; 2 = 100% positive consequences.

Table 38. Pretest: Item D - reason for advocacy of selection of activity (TV or go shopping).

		Reason			
		1	2	3	4
Group 1*	Frequency	1	1	14	3
	Percent	5.3	5.3	73.7	15.8
Group 2	Frequency	6	1	3	4
	Percent	42.9	7.1	21.4	28.6
Group 3	Frequency	3	3	1	7
	Percent	21.4	21.4	7.1	50.0

x^2 = 21.54; df = 6; significance = .002

Table 39. Posttest 1: Item D - reason for advocacy of selection of activity.

		Reason			
		1	2	3	4
Group 1	Frequency	2	1	14	2
	Percent	10.5	5.3	73.7	10.5
Group 2	Frequency	5	0	2	5
	Percent	41.7	0	16.7	41.7
Group 3	Frequency	8	1	2	3
	Percent	57.1	7.1	14.3	21.4

x^2 = 18.94; df = 6; significance = .004

Table 40. Posttest 2: Item D - reason for advocacy of selection of activity.

		Reason			
		1	2	3	4
Group 1	Frequency	2	1	15	1
	Percent	10.5	5.3	78.9	5.3
Group 2	Frequency	6	1	2	4
	Percent	46.2	7.7	15.4	30.8
Group 3	Frequency	5	2	3	3
	Percent	38.5	15.4	23.1	23.1

x^2 = 16.90; df = 6; significance = .001

*1 = control; 3 = 50% positive, 50% negative consequences; 2 = 100% positive consequences.

very slight shifts across time, as did Group 2. Group 3, however, increased response to category 1 (I'd go shopping - I might not fall again) from the pretest to posttest 1 by a frequency of 5. This increase was predicted.

H_{12}: Group 3 will experience a greater reduction in total number of hours of viewing, and an increase in total number of hours spent in alternative activities, than Group 2, which will experience a greater reduction in viewing and an increase in alternative activities than Group 1.

As can be seen in Tables 42 and 44, the main effect of repeated measures was significant in both tests. This indicates that, regardless of group, there was a significant decrease in the number of hours spent viewing and a significant increase in the number of hours spent on alternative activities. Because the control group also displayed shifts in the desired direction, alternative explanations for this significant main effect must be explored. These are discussed in Chapter V. The data do not support the research hypothesis 12.

H_{13}: There will be a difference among groups in the proportion of use of "conscious decisions" at posttest 1 and at posttest 2.

The question which this hypothesis addresses is: Did the treatment have a differential effect upon the use of conscious decision-making strategies? After exposure to the treatments, did the subjects use reasons for television viewing such as "I watched program X because it was important for me to watch it" as opposed to "I watched program X because I had nothing else to do"; or, conversely, "I didn't watch

Table 41. Pre and post treatment mean scores for hours of television viewing.

	$\bar{X}_{pretest}$	$\bar{X}_{posttest\ 2}$	N
Group 1	18.36	14.96	20
Group 2	19.72	14.96	18
Group 3	18.36	13.60	18

Table 42. Repeated measures analysis of variance for hours of television viewing.

Source of Variation	Sums of Squares	df	Mean Squares	F	P
Groups	.01	2	.004	.15	> .01
Subjects within groups	1.49	53			
Repeated measures	.10	1	.10	27.96	< .01
Repeated measures by group interaction	.003	2	.002	.45	> .01
Repeated measures by subject within groups interaction	.19	53	.004		
Total	1.80	111			

Table 43. Pre and post treatment mean scores for hours spent in alternative activities.

	$\bar{X}_{pretest}$	$\bar{X}_{posttest\ 2}$	N
Group 1	12.24	19.04	20
Group 2	14.28	19.04	18
Group 3	15.64	20.40	18

Table 44. Repeated measures analyses of variance for hours spent in alternative activities.

Source of variation	Sums of Squares	df	Mean Squares	F	P
Groups	.02	2	.01	.43	> .01
Subjects within groups	1.34	53	.03		
Repeated measures	.17	1	.17	34.18	< .01
Repeated measures by group interaction	.01	2	.003	.49	> .01
Repeated measures by subjects within groups interaction	.27	53	.01		
Total	1.80	111			

program X because it wasn't important for me" as opposed to "I don't know why I didn't watch it."

A χ^2 test of homogeneity of pattern of response was performed. The results indicate that there were no significant differences in pattern of response at either the pretest or the posttest.

Because of the number of tests performed (40) and the equal number of resulting tables, these tables are not presented. It is concluded, however, that the treatment had no effect upon reported use of these reasons for television viewing. The data do not support the research hypothesis 13.

H_{14}: There will be a difference among groups in the pro-
portion of subject recall of self-verbalization used
by the model at posttest 1 and at posttest 2.

As can be seen from Table 45, the χ^2 coefficient is not statistically significant. In addition, at posttest 1 both the frequencies and percentages of response were equal for both groups. At posttest 2, Group 2 decreased slightly in the frequency of accurate response to this item. However, there is no statistical difference between the two groups' ability to recall self-verbalization used by the model. Posttest frequencies and percentages remained fairly stable at posttest 2, as seen in Table 46. The data do not support the research hypothesis 14.

As the experiment progressed, in the 100% vicarious reinforcement classroom, the following questions emerged: "Doesn't anything bad ever happen to Jill when she decides not to watch TV?" The response to this question was "In all of these situations, Jill experiences positive consequences." This response was not a direct answer to the

Table 45. Posttest 1: Report of accurate recall of model self-verbalization.

		Accuracy of Recall	
		Accurate	Inaccurate
Group 2	Frequency	17	1
	Percent	94.4	5.6
Group 3	Frequency	17	1
	Percent	94.4	5.6

x^2 = .53, df = 1, significance = .47.

Table 46. Posttest 2: Report of accurate recall of model self-verbalization.

		Accuracy of Recall	
		Accurate	Inaccurate
Group 2	Frequency	16	2
	Percent	88.9	11.1
Group 3	Frequency	17	1
	Percent	94.4	5.6

student's question but any other response would have contaminated the experiment. It did prompt the researcher, at the end of the experiment, to ask the subjects in each group the following questions:

A. For Group 2 (100% vicarious reinforcement): "Do you think that what happened to Jill could happen to you - that things would always go well for you if you decided not to watch TV?"

Yes _____ No _____

B. For Group 3 (50% vicarious reinforcement): "...that things would sometimes go well for you if you decided not to watch TV and sometimes they would not?" Yes _____ No _____

No hypotheses were formulated regarding this measure. Table 47 displays the data. Interpretation of this data will be discussed in Chapter V.

Table 47. Realism of the treatment: Would this happen to you?

	Yes	No
Group 2	5	13
Group 3	17	1

Summary

A summary table of results (Table 48) is found on the following pages.

Table 48. Summary table of results.

Variable	Hypothesis	Findings
1. Use of self-verbali- zation	There will be a difference among groups in the percen- tage of students using self-verbalization at each posttest: a) At posttest 1, a greater proportion of Group 2 subjects will use self-verbalization than Group 3, which will be greater than Group 1; b) at posttest 2, a greater proportion of Group 3 subjects will use self-verbalization than Group 2, which will be greater than Group 1.	H_0 was not rejected.
2. Reasons for use of self-verbalization	There will be a difference among groups in the pro- portion of responses to categories of reasons for use (or non-use) of self-verbalization.	H_0 was rejected.
3. Content of self- verbalization	There will be a difference among groups in the pro- portion of response to categories of content of self-verbalization. a) At posttest 1, Group 2 will more frequently practice goal-related self-verbali- zation; b) at posttest 2, Group 2's proportion of response to goal-related content will decrease.	H_0 was rejected.
4. Preference for lei- sure time activity (TV vs. alternative activity)	There will be an interaction effect with regard to preference for viewing television versus participa- tion in an alternative activity. a) At posttest 1, Group 2 will show greater preference for the alter- native activity than Group 3, which, in turn, will show greater preference for the alternative activity than Group 1; b) at posttest 2, Group 3 will show greater preference for the alternative activity than Group 2, which, in turn, will show greater preference than Group 1.	H_0 was not rejected.

Table 48. (Continued) Summary tables of results.

Variable	Hypothesis	Findings
5. Selection of acti- vity for goal attainment	There will be an interaction effect of time and group upon selection of activities for attainment of goals: a) at posttest 1, Group 2 (100% vicarious reinforce- ment) will more frequently select non-teleivsion viewing activities for attainment of goals than Group 3 which, in turn, will more frequently select non- television activities than Group 1; b) at posttest 2 Group 3 (50% vicarious reinforcement) will more fre- quently select non-television viewing activities for attainment of goals than Group 2, which, in turn, will more frequently select non-television activities than Group 1	H_o was not rejected.
6. Selection of program- ming to learn posi- tive problem-solving behavior	Group 2 will more frequently select pro-social pro- gramming as a means of learning positive problem- solving behavior than Group 3, which, in turn, will more frequently select pro-social programming than Group 1 at posttest 1 and at posttest 2.	H_o was not rejected.
7. Preference for lei- sure time activity (anti-social TV vs. alternative activity)	There will be an interaction effect of time and group upon preference for anti-social programming versus alternative activities: a) at posttest 1, Group 2 will show more frequent preference for the alternative activity than Group 3, which, in turn, will show more frequent preference for the alternative activity than Group 1; b) at posttest 2, Group 3 will show more frequent preference for the alternative activity than Group 2, which, in turn, will show more frequent preference for the alternative activity than Group 1.	H_o was not rejected.

Table 48. (Continued) Summary tables of results.

Variable	Hypothesis	Findings
8. Advocacy of use of self-verbalization	Group 3 will display greater advocacy of use of self-verbalization than Group 2, which, in turn, will display greater advocacy than Group 1 at posttest 1 and at posttest 2.	H_o was not rejected.
9. Advocacy of selection of activity	Group 3 will display greater advocacy of selection of an alternative activity than Group 2, which, in turn, will display greater advocacy than Group 1, at posttest 1 and at posttest 2.	H_o was not rejected.
10. Categories of reasons for advocacy of use of self-verbalization	There will be a difference among groups in the proportion of responses to categories of reasons for advocacy of self-verbalization at posttest 1 and at posttest 2.	Invalid data.
11. Categories of reasons for advocacy of selection of activities	There will be a difference among groups in the proportion of response to categories of reasons for advocacy of choice of activity at posttest 1 and at posttest 2: a) Group 3 will more frequently express category 1 reasons for selection of an activity than Group 2; b) Group 2 will more frequently express category 4 reasons for selection of an activity than Group 3.	Item a: H_o rejected at posttest 1, but not at posttest 2. Item b: H_o rejected at posttest 1, but not at posttest 2. Item c: H_o not rejected. Item d: H_o not rejected.
12. Hours viewing and hours spent in the alternative activity	Group 3 will experience a greater reduction in total number of hours of viewing, and an increase in total number of hours spent in alternative activities, than Group 2, which will experience a greater reduction in viewing and an increase in alternative activities than Group 1.	H_o was not rejected.

Table 48. (Continued) Summary tables of results.

Variables	Hypothesis	Findings
13. Use of "conscious" reasons for viewing or nonviewing	There will be a difference among groups in the proportion of use of "conscious decision" at posttest 1 and at posttest 2.	H_0 was not rejected.
14. Recall of self-varbalization	There will be a difference among groups in the proportion of subject recall of self-verbalization used by the model at posttest 1 and at posttest 2.	H_0 was not rejected.

Group Main Effects

Significant group main effects which resulted from the repeated measures analysis of variance were noted for the following variables:

1. Selection of activity for goal attainment: although the main effect of group was significant (indicating that groups did differ statistically), none of the Scheffé post hoc tests of interest resulted in significant differences.

2. Selection of pro versus anti-social television to learn positive problem-solving behavior: Scheffé post hoc contrasts between groups yielded no tests which were significant.

Repeated Measures Main Effects

Significant repeated measures main effects were found for the following variables:

1. Preference for leisure time activity: Scheffé post hoc contrasts were performed to test for significant difference between all measurement points. All tests were significant. This would indicate that although the groups did not differ significantly from each other, the overall mean preference for the alternative activity at each measurement point was significantly different from each other.

2. Selection of pro versus anti-social programming to learn positive problem-solving behavior: Scheffé post hoc contrasts yielded significant contrast between each posttest and the pretest. The overall mean at each posttest was significantly different from the pretest. Preference for pro-social programming increased substantively from the pretest to posttest 1 by both Groups 2 and 3.

Significant interaction effects were found for the following variable: preference for leisure time activity. Group 2 increased substantively preference for the alternative activity at posttest 1. Group 3 increased slightly from the pretest.

Examination of Predicted Trends in Data

Upon examination of data, it was found that the following variables resulted in trends which changed in the predicted directions, although not statistically significant.

1. Frequency of use of the following self-verbalization: "Is this program helpful to me in reaching my goals? Would doing something else better help me to achieve my goals?"

2. Frequency of selection of the alternative activity as opposed to anti-social television. Although the main effect of groups was non-significant (indicating no significant differences between groups), the trend did occur in the hypothesized direction.

3. Frequency of selection of pro-social programming to learn problem-solving techniques as opposed to anit-social programming: again, no differentially significant main effect occurred. Trends did occur in the hypothesized directions.

4. Advocacy of selection of the alternative activity as opposed to television viewing: as in the preceding cases, there was not a significant differential main effect by groups, but trends did occur as predicted.

5. Reasons for advocacy of selection of activity: at posttest 1, most trends did occur as predicted.

Conclusions and implications will be discussed in Chapter V.

Chapter V

SUMMARY, CONCLUSIONS, AND IMPLICATIONS

Summary

Background

Results of previous studies have demonstrated that children who view televised violence may be more prone to behave aggressively than children who do not view such violence. In addition, the perceptions of reality of heavy television viewers may be more distorted than for light viewers - for them, the world appears to be a fearful place. They believe that the frequency of violence on television is a reflection of that which occurs in real life. The question then emerges as to whether children can be taught to view more critically and to make conscious decisions about what to view and whether to view it.

The present study attempted to respond to this issue: Can the number of hours children spend viewing be reduced so that they spend more time engaging in goal-related activities as active members of society? Two instructional units were designed with the goal of making television viewing a deautomized act, by bringing to a conscious level the decision of whether or not to view television.

Previous research indicates that self-verbalization may be an effective method of pausing to think about actions, to consider behaviors and their consequences. Modeling has been demonstrated to

127

be an effective means of teaching self-verbalization. The instructional units designed for this study attempted to teach children to make more conscious decisions about viewing through the use of self-verbalization. The units involved a component of modeling demonstrated through the use of a slide-tape medium.

The general area of investigation in the present study was the question of the effects of vicarious reinforcement upon imitation of desired behaviors. In reviewing the literature, it was suggested that by modeling both successful and unsuccessful behavior in attempting a new task, one might facilitate perseverence in a learner's attempt at that new task. The expectancy-frustration hypothesis, which appears in the literature on self-control, has been offered in support of this prediction. As stated in Chapter I, (page 19), one would predict that when observers are attempting an unfamiliar task, they will compare their own performance with that of the model. If they have failed in their own attempts and have seen a model consistently succeed, they may become frustrated and cease further attempts at the task. Studies which have investigated the effect of varying the percentage of vicarious reinforcement upon imitation reported that increased imitation is a function of increased vicarious positive reinforcement. Studies which examined the effect of varying the percentage of vicarious reinforcement upon extinction have produced conflicting results.

Research Questions

The major research questions which this study attempted to address were:

1. Will varying the percentage of vicarious positive

reinforcement have an effect upon use of self-verbalization?

2. Will varying the percentage of vicarious positive reinforce-
   ment have an effect upon preference for non-television
   viewing activities?

3. Will varying the percentage of vicarious positive reinforce-
   ment have an effect upon the number of hours spent viewing?

4. Will varying the percentage of vicarious reinforcement have
   an effect upon the frequency of stated preference for pro-
   social programming?

5. Will varying the effect of vicarious reinforcement have an
   effect upon advocacy of selection of alternative activities?

Treatment

Two one-week, 45 minute per day, instructional units were designed
by the researcher. They were equivalent, except for the variation
in the percentage of vicarious reinforcement. Each unit consisted
of: 1) a slide-tape presentation of a model self-verbalizing before
engaging in a leisure time activity other than television viewing;
2) activities and games which required the observers to self-verbalize;
3) workbooks which required the observers to write personal goals
and select activities which would assist them in reaching those goals.

There were two treatment groups and one control group in the
study. Subjects in the first treatment were exposed to a model who
experienced positive consequences in four situations in which she
decided to forego television viewing in favor of an alternative acti-
vity. Subjects in the second treatment group viewed the same model
experience positive consequences in two situations and negative

consequences in two other situations. The control group received only pre and posttests.

Major Findings

Major findings of the present study were:

1. Actual use of self-verbalization did not increase significantly across time for either treatment or control groups.

2. There was a significant group by measures interaction effect with regard to stated preference for non-television viewing activities. One hundred percent (100%) vicarious positive reinforcement created a greater initial increase in stated preference for non-television viewing activities. Fifty percent (50%) vicarious positive reinforcement increased only slightly in a preference for non-television activities at both posttest periods.

3. There was a significant treatment effect in stated selection of non-television activities for goal attainment. Subsequent Scheffé Post Hoc tests yielded non-significant differences between pairs of interest.

4. The number of hours spent viewing decreased for all groups (including the control group). There was no significant difference as a result of varying the percentage of vicarious positive reinforcement.

5. There was a significant groups effect as well as a significant repeated measures main effect for selection of pro versus anti-social programming as a means of learning problem solving. Subsequent Scheffé Post Hoc tests for the groups main effect yielded non-significant differences between pairs of interest. Scheffé Post Hoc tests for the repeated measures main effect yielded

significant differences between posttest 1 versus pretest, and posttest 2 versus pretest.

6. There was no significant difference among the groups as a result of varying the percentage of vicarious positive reinforcement in advocacy of selection of alternative activities. Results did occur in the predicted direction, however.

Additional Findings Regarding Self-Verbalization

The following results do not directly respond to the previously stated research questions, but will be addressed in the conclusions section:

1. Reasons for use of self-verbalization became more goal related for the treatment groups but not the control group.

2. Content of self-verbalization became more goal related for the treatment groups but not the control group.

Major Conclusions

Conclusions drawn from this study must be considered with the following limitations in mind:

a) Data were collected on the basis of self-report. Subjects were asked to report their attitudes towards variables of interest. The danger of self-report in research is the increased probability of error based on the subjects' willingness to state attitudes which they feel conform to those desired by the researcher. There is particular danger in a study such as the present one, in which the focus is upon attitudes which may or may not be socially acceptable. For

this reason, the researcher attempted to corroborate attitudinal data with behavioral data.

b) The accuracy of the behavioral data is based upon the subjects' ability to recall programs viewed. In order to decrease the amount of error in remembering, subjects were required to report programming viewed the following day during the first hour of classes.

Conclusions with regard to the findings are presented here.

1. Use of self-verbalization: Regarding the use of self-verbalization, there was no significant difference: the treatments had no significant effect nor was there any differential effect by group. These results are not consistent with reinforcement theory, which would have predicted an increase in imitation of use of self-verbalization, at least for the 100% vicarious reinforcement group.

A possible explanation for the treatments' failure to impact upon use of self-verbalization may have been because the subjects did not perceive the reinforcement to be directly related to use of self-verbalization. The subjects viewed the model self-verbalize, select an alternative activity, and be reinforced for that selection. They may have perceived the reinforcement to be for the actual selection of the alternative activity, not for the process of thinking carefully about that selection. One suggestion in redesigning the instructional unit would be to emphasize the relationship between reinforcement and the process of self-verbalization.

2. Preference for non-television viewing activities: Given the substantial increase evidenced by the group viewing 100% positive

consequences, it may be concluded that 100% positive consequences may be more effective in eliciting both immediate and enduring preference for the alternative activity. The 50% positive consequences/50% negative consequences group mean regarding preference for alternative activities was substantially above average before the treatment even began. This would indicate that the subjects were already above average in preference for alternative activities. The control group remained stable at posttest 1 and even slightly decreased preference at posttest 2. It must be recalled, however, that these data were not corroborated with behavioral increases in participation in alternative activities. Given the inconsistency between stated preference and the behavioral data, the conclusions regarding preference for alternative activities are tentative and require further study.

3. Number of hours spent viewing television: Although the treatment groups did decrease the number of hours spent in viewing television, the control group also evidenced a decrease. One possible explanation is that with the advent of spring weather at about the time of posttest 2, all subjects began to spend more time outside in alternative activities. It is suggested that those planning future research on this topic consider seasonal changes and their effect upon the dependent variables.

4. Frequency of stated preference for pro-social programming: Regarding selection of pro versus anti-social programming television for achieving the short-term goal of learning positive problem-solving behaviors, there was a significant repeated measures

main effect, as well as a significant group main effect. Although pairs of interest did not differ statistically from each other (as reported by subsequent post hoc tests), an increase from a mean of .5 (on the pretest) to a mean of .9 (on posttest 1) for Group 2 and an increase from .6 (on the pretest) to a mean of .9 (on the posttest 1) for Group 3 indicates that out of six items, subjects in both groups were selecting the pro-social option on an average of five cases. This remained constant at posttest 2. It would appear, then, that the instructional unit was effective at a cognitive level in teaching children to consider goals as well as the merits of pro-social programming.

Conclusions from the additional findings are summarized here.

1. Reason for use of self-verbalization and content of self-verbalization: The treatments did have an effect upon reasons for use of self-verbalization. Both treatment groups displayed increases in goal-related reasons for use of self-verbalization: "I ask myself questions before deciding whether to view television, because in that way I can decide whether something else can help me to achieve my goal." This occurred at posttest 1, but not at posttest 2. One conclusions drawn is that while the treatments appear to have an immediate effect in encouraging goal-related reasons for self-verbalization, the delayed effects were neither clear nor favorable as reflected by the 50% positive consequences/ 50% negative consequences group's more frequent statement that they did not know why they self-verbalized.

Both instructional units increased imitation of use of goal-related decisions. Although the data regarding the use of goal-related reasons indicates that children did begin to consider their goals in selection of activities, actual use of self-verbalization did not increase. This may lead to the conclusion that subjects were actually responding to a more socially acceptable manner without true adherence to the belief.

2. Regarding content of self-verbalization, it would appear that the treatments had a differential effect over time. At posttest 1, the group experiencing 100% positive vicarious consequences more frequently imitated the goals related to self-verbalization of the model in the instructional unit; at posttest 2, the group experiencing 50% positive vicarious consequences/50% negative vicarious consequences displayed more frequent imitation.

Although these findings regarding content were in the predicted direction, it must be remembered that actual use of self-verbalization did not increase. A possible explanation for the shifts in the predicted direction is that subjects became sensitized to the desired response. They learned the reasons for use of self-verbalization, and what they should say when self-verbalizing, but their own behavior did not reflect that knowledge acquisition.

Summary of Conclusions

In summary, the expectancy-frustration hypothesis was generally not supported by the data from this study. Only one measure out of the four designed to test this hypothesis resulted in data which

exhibited changes in the predicted direction and these differences were non-significant.

As reported in Chapter II, the expectancy-frustration hypothesis predicts that subjects, after viewing a model experience 100% positive reinforcement, will become frustrated if their own attempts do not result in the same high percentage of positive results. The studies cited in the research reported in Chapter II involved simple modeled tasks such as dropping a marble in a hole and then assessing the observer's persistence in imitating the observed behavior. Results from these studies were conflicting with each other regarding the effect of vicarious positive reinforcement upon imitation and extinction.

The present study attempted to evaluate the effect of vicarious partial reinforcement upon a behavior considerably more complex than dropping marbles - the process of decision-making. Not only was the behavior more complex, but the occurrence of the subjects' imitation of that behavior in their homes could not be assured.

The measure in the present study which was most similar to that of previous studies in measuring persistence at the behavior was "advocacy of participation in an alternative activity versus television viewing." This tested the subjects' persistence in advocating selection of the alternative activity in the face of non-positive consequences. The results of the present study showed no significant differences for either treatment group although the trends of the data did follow predicted directions.

Although the use of self-verbalization did not result in significant differences, both the reason for use and content of

self-verbalization did display shifts in the predicted direction. Because of these results, it is concluded that recall from the unit did occur. Subjects were able to reproduce with accuracy the content of self-verbalization exhibited by the model. The predicted behavior change which would have displayed increased use of self-verbalization did not occur.

Stated preference for leisure time activity can be altered by an instructional unit; 100% vicarious reinforcement is a more effective strategy in achieving immediate and enduring stated preference for alternative activities. However, this stated preference was not carried out behaviorally. Although treatment groups did increase participation in alternative activities, there was no significant group main effect.

A major conclusion to be drawn from this study is that while it is possible to effect desired changes in stated preferences, these changes were not borne out behaviorally.

Implications

For Future Research

1. As stated earlier, it is suggested that to increase the probability of greater use of self-verbalization, the instructional unit clearly should relate the reinforcing outcomes to self-verbalization. To test the effect of vicarious partial reinforcement upon self-verbalization, the model might say (following participation in the alternative activity): "I'm really glad I took the time to consider a number of activities. It is good to ask myself questions before deciding what to do. Because I took the time to ask myself questions before

deciding what to do, I had a good experience." Attention would then be focused more directly on the process of self-verbalization and not on the resulting decision.

Future research might also attempt to isolate the effect of vicarious partial reinforcement upon self-verbalization. For this, a treatment group would be required in which the model was rewarded for self-verbalizing without the intermediate step of participating in the alternative activity.

2. A major contribution of this study was the test of the expectancy-frustration hypothesis away from the controlled laboratory environment. The difficulty encountered in doing so (i.e., uncertainty that the subjects would attempt the behavior in their own homes) might be a deterrent for future research in this area, given lack of favorable results in this study.

With greater control over the imitation process, the results may have been more favorable. This control, of course, would limit generalizability. Future field studies may examine ways of perfecting the methodology used in the present study. Perhaps a medium could be found which would allow for the greater control of laboratory experimentation but not sacrifice generalizability. This might involve a simulation of the home environment in which subjects are asked to make decisions regarding television use.

3. The present study resulted in the identification of categories of response for: reasons for use of self-verbalization, content of self-verbalization, and reasons for advocacy of selection of alternative activities versus television viewing. Future research may utilize

these categories, eliminating the need to identify them, and allowing investigators to develop hypotheses regarding shifts from one category to another.

4. A fourth implication of this study for future research is that it demonstrates the need to corroborate expressed attitudinal changes with behavioral data. As was noted, subjects' expressed preference for alternative activities changed in the desired direction while behaviorally there was no significant difference among groups. It would _appear_ that the treatments were effective in promoting the desired stated attitudinal change. This shift may have occurred more as a result of a desire on the subjects' part to express attitudes which were in accordnace with the objectives of the instructional unit than as an accurate reflection of a true attitudinal change.

It is recommended that research in this area test for three levels of effect: recall, stated attitudinal change, and actual behavioral change. Desired effects in one area do not necessarily imply effects in another.

5. It is recommended that future studies focus more narrowly upon one or another area of interest explored in this study: 1) use of self-verbalization, or 2) reduction of viewing hours. Once results are obtained concerning an effective method of creating greater use of self-verbalization, that method may be studied in relation to its effectiveness in reducing number of viewing hours.

6. It is also recommended that the greater percentage of vicarious reinforcement unit be reduced from 100%. As stated earlier, the subjects in this group began to doubt and discredit this highly consistent rate of positive reinforcement.

For Practitioners

Given that teachers and schools are involved in teaching children about decision-making as well as the pros and cons of television viewing, the following recommendations are made:

1. For practitioners, the implications are unclear. Depending upon the behavior change which is desired, and whether persistence in imitation is desired, the two instructional units differ. It would appear from the data, however, that 100% vicarious reinforcement is more effective in encouraging imitation and enduring imitation of increased stated preference for alternative activities; however, it must be recalled that the 100% vicarious reinforcement began to be suspect in the subjects' mind. If the desired change is advocacy of alternative activities in the face of possible negative consequences is desired, 50% vicarious reinforcement may be more effective.

2. A major contribution of both instructional units was the introduction of the advisability of considering goals in making decisions. It was clear to the researcher from student comments, that not only had the children not been considering goals in making decisions, most of them did not know what a goal was. The unit introduced to them the concept of short and long term goals. In addition, it was effective in generating discussion of pro and anti-social methods of solving problems. Further study is recommended, however, to discover methods of teaching children to incorporate that knowledge into their own behavior.

3. Teaching children to make decisions regarding what and when to view television is becoming part of many school curricula. The instructional unit designed for this study was well-received by the

teachers and administrators and the children who participated in the study. Testimonials from the teachers and students were evidence of this. The stronger points of the unit were the consideration of goals in decision-making, and the discussion of pro and anti-social television. Although the results regarding this study were generally non-supportive of the theories posited, the instructional unit was useful in introducing these ideas to the children.

Viewing of television has not declined; childrens' perception of reality is distorted by the types of programming they are viewing (Gerbner, et al., p. 1). With this in mind, teaching children how to make decisions about what and when to view warrants further study and should be studied in the school environment.

APPENDIX A

DIALOG AND OUTLINE OF THE INSTRUCTIONAL UNIT

APPENDICES

APPENDIX A

DIALOG AND OUTLINE OF THE INSTRUCTIONAL UNIT

Dialog of Slide-Tape Portion of the Instructional Unit

(Group 2: 100% positive reinforcement)

Situation #1

1. Jill walks in door:

   "Boy, what a day! I'm glad I'm home!"

2. Goes to the TV guide:

   "What should I do now? I could watch my favorite program.
   It's on now. But it seems like such a nice day outside.
   Maybe I should go outside instead. First I'll check out
   the TV."

3. Stands in front of the TV:

   "Well, even though I really like Star Trek, I think I'll
   go bike riding. It's good exercise and if Scott comes
   with me, maybe we could have fun. Maybe we could get
   to talk a little bit. Yes, I think I'll ask Scott to
   go for a ride."

4. Riding outside:

   "Boy, this is fun."

5. Standing with bikes, back at home:

   "I'm glad we went bike riding instead of watching TV.

142

We got some good exercise and we really had fun. Now, let's go get something to eat."

Situation #2

1. Jill comes home from school.

    "I wonder if I should bake those cookies for Scott and Mark or watch TV?"

2. Goes to the television.

    "Maybe I'll watch with Scott. But I really wanted to bake those cookies. We had fun the last time and they really like the cookies. Besides, they did something nice for me and I'd like to repay them."

3. Jill cooking.

    "Let's see. What do I need?"

4. Scott and Mark come in the kitchen.

    "Great! Are you going to help? This is really fun!"

5. Eating cookies.

    "Hey, that was really fun - even though a couple of cookies did burn. I didn't mind missing television at all."

Situation #3

1. Jill hangs up coat.

    "I think I'll check and see what's on TV today. There's a good program I want to see."

2. Jill in front of the TV.

    "There it is. . . but should I watch it. If I watch it, I can talk to John about it later on. I told him I'd watch it. Also, I've really been wanting to see it. But

I could play a game with Mark and Scott instead. They're downstairs and it's a really good game. I could learn something from it. Anyway, maybe it's better to play with people than to just sit in front of the TV. I guess I'll go play the game with them."

3. Jill, Scott, Mark playing game.

"Hey, this is fun. I'm winning and learning something, too."

4. Jill - others at the game.

"I'm really glad I came down to play."

Situation #4

1. Jill, with TV guide.

"Boy - great. Saturday morning. I think maybe I'll check and see what's on this morning.

2. Jill checks to see what Scott is watching.

"Hey, Scott, what's on? Maybe I'll watch, too. Or maybe we should go out and feed the puppies. Let me think a second. If I watch TV, I may have fun now. But since I want to be a veterinarian some day, maybe I'll learn something if I go up to be with the puppies. Hey, Scott, let's go."

3. With puppies.

"Hey, Scott, which one have you got there?"

4. Jill, with puppies.

"I'm really glad I came out here instead of watching TV. We really had fun."

Dialog of Slide-Tape Portion of the Instructional Unit

(Group 3: 50% positive reinforcement)

<u>Situation #1</u>

1. Jill walks in door:

   "Boy, what a day! I'm glad I'm home!"

2. Goes to the TV guide:

   "What should I do now? I could watch my favorite program. It's on now. But it seems like such a nice day outside. Maybe I should go outside instead. First I'll check out the TV."

3. Stands in front of the TV:

   "Well, even though I really like Star Trek, I think I'll go bike riding. It's good exercise and if Scott comes with me, maybe we could have fun. Maybe we could get to talk a little bit. Yes, I think I'll ask Scott to go for a ride."

4. Riding outside:

   "Boy, this is fun."

5. Standing with bikes, Jill's bike is broken:

   "Oh nuts. My bike broke. This wasn't such a great idea. I really wish I had just watched TV instead. Then my bike wouldn't be broken and I could talk to my friends about Star Trek tomorrow."

<u>Situation #2</u>

1. Jill comes home from school.

   "I wonder if I should bake those cookies for Scott and

Mark or watch TV?"

2. Goes to the television.

> "Maybe I'll watch with Scott. But I really wanted to bake those cookies. We had fun the last time and they really liked the cookies. Besides, they did something nice for me and I'd like to repay them."

3. Jill cooking.

> "Let's see. What do I need?"

4. Scott, Mark come in the kitchen.

> "Great! Are you going to help? This is really fun!"

5. Eating cookies.

> "Hey, that was really fun - even though a couple of cookies did burn. I didn't mind missing television at all."

Situation #3

1. Jill hangs up coat.

> "I think I'll check and see what's on TV today. There's a good program I want to see."

2. Jill in front of the TV.

> "There it is. . .but should I watch it. If I watch it, I can talk to John about it later on. I told him I'd watch it. Also, I've really been wanting to see it. But I could play a game with Mark and Scott instead. They're downstairs and it's a really good game. I could learn something from it. Anyway, maybe it's better to play with people than to just sit in front of the TV. I guess I'll go play the game with them."

3. Jill, Scott, Mark playing game.

   "Gee, Scott. You don't have to get mad because I'm winning.
   All right, I'll leave."

4. Jill, pensive.

   "Nuts. Now I missed my favorite program. If I had just
   watched TV, none of this would have happened."

Situation #4

1. Jill, with TV guide.

   "Boy - great. Saturday morning. I think maybe I'll check
   and see what's on this morning."

2. Jill checks to see what Scott is watching.

   "Hey, Scott, what's on? Maybe I'll watch, too. Or maybe
   we should go out and feed the puppies. Let me think a
   second. If I watch TV, I may have fun now. But since
   I want to be a veterinarian some day, Maybe I'll learn
   something if I go up to be with the puppies. Hey, Scott,
   let's go."

3. With puppies.

   "Hey, Scott, which one have you got there?"

4. Jill, with puppies.

   "I'm really glad I came out here instead of watching TV.
   We really had fun."

Outline of Lessons

Lesson I:

A. Rules for discussion.

Many of the week's activities depend upon the ability to successfully discuss television's role within the students' lives. Therefore, the students begin the first day's activity by deciding upon "rules for discussion" to provide them with appropriate guidelines for behavior.

B. Setting goals.

1. Define goal.

2. Give an example of short and long term goals.

3. Students write one short term and one long term goal in activity book.

C. Free time.

1. Define free time.

2. Discuss whether students have free time.

3. Write free time activities in activity book.

D. Decisions

1. Define decision.

2. Define habit.

3. Discuss how decisions are made.

4. Read examples of decisions and habits - have students guess what they are.

E. What did we learn today?

Ask students to state one thing they learned from today's lesson.

Lesson II:

    A. Review of lesson I.

        Restate definitions of goal, free time and decision.

    B. Instruction of model on slide-tape: Jill.

        This week we'll be watching Jill make some decisions about what to do with her free time. As we watch the slides, I want you to watch and listen for:

        1. What does Jill say to herself?

        2. What does she decide?

        3. How does it turn out for her?

    C. Slide-tape is shown.

    D. Activity books.

        Students write responses to above questions in activity books.

    E. Game about goals and activities is played.

        Students must decide, from a number of activities, which of them is productive in reaching a goal. After the game one student from each of the teams comes to the front of the room and tells which activities were selected and why.

    F. What did we learn today?

        Tie lessons I and II together: decisions should be made by thinking carefully (aloud) about one's goals.

Lesson III:

A. Review lesson II.

   1. Decisions should be made based upon one's goals.

   2. People may select very different activities in their free time because their goals may be very different from each other's.

B. Slide-tape.

C. Write responses to questions in activity books. (See previous lesson for sample page.)

D. Discussion of pro and anti-social programming.

   Jill doesn't always decide not to watch television. We've been saying that it's better not to watch TV. Now we say sometimes it's OK to watch. When is it all right? (When we want to learn about goals.)

   Jill has a goal of wanting to learn about some "good" ways to solve problems. Some shows demonstrate more good ways than bad ways.

E. Activity sheet.

   Discuss activity sheet.

F. What did you learn today?

   It's OK to watch TV if it assists you in reaching a goal.

WATCHING TV TO ACHIEVE CERTAIN GOALS

Jill and her friend Sue have been having some problems lately getting along with each other. She wants to learn about some good ways to solve problems.

1. What are the ways of solving problems most often shown on TV?

2. What are some good ways of solving problems?

WHICH OF THE SHOWS BELOW MAY SHOW YOU SOME GOOD WAYS TO SOLVE PROBLEMS? WHICH SHOW WOULD YOU TELL JILL TO WATCH IF SHE WANTS TO LEARN ABOUT GOOD WAYS TO SOLVE PROBLEMS?

BARNABY JONES	ROAD RUNNER
MARY TYLER MOORE	MY THREE SONS
FAT ALBERT AND THE COSBY KIDS	MASH
SESAME STREET	LITTLE HOUSE ON THE PRAIRIE
THE GUIDING LIGHT	KILLER BEES
THE NEWS	QUINCY
MORK AND MINDY	SIX MILLION DOLLAR MAN

Lesson IV:

    A. Review of Lesson III:

    It's all right to view when you do it to achieve a goal.

    B. Slide-tape.

    C. Writing responses to questions in activity books. (See Lesson II for sample page.)

    D. Students' goals.

    Select two students. Each of them comes up to the board and states one goal.

    Students in the class are asked to write down as many activities as they can think of that their classmate could do to achieve his/her goal.

    E. Free time pie.

    Students are asked to fill in the "pie" with activities that they could do to achieve either their long or short term goal.

    F. What did we learn today?

    Think of goals when deciding on activities.

Lesson V:

A. Review of Lesson IV.

B. Discuss whether students have made any decisions about what to do with their free time. Were those decisions based on goals?

C. Discussion.

    1. Why is there so much concern about kids watching too much television?

        a. Violence

        b. There's a concern that children are spending too much time watching other people do things.

    2. It is better to be active in relating to other people that passive television viewers.

D. Slide-tape.

E. Asnwer questions about Jill in the activity book.

F. "Doers, NOT VIEWERS"

(See next page.) Fill in sheet with free time activities, keeping goals in mind.

G. What have we learned this week?

    1. It's best to make decisions based upon goals.

    2. Definition of goals, decisions, habits.

    3. It helps to think aloud about your decisions.

    4. Different people may select different free time activities based upon goals.

    5. Some programs teach better ways of solving problems than others.

    6. Watching TV is all right if it helps to achieve a goal.

APPENDIX B

"HOW WOULD YOU FEEL?"

APPENDIX B

"HOW WOULD YOU FEEL?"

1. How would you feel if you went for a ride on your bike and your bike broke?

GOOD _____ BAD _____

2. How would you feel if you went for a ride on your bike and you had a good time?

GOOD _____ BAD _____

3. How would you feel if you played a game with your sister or brother and you got into an argument with him or her and you lost the game?

GOOD _____ BAD _____

4. How would you feel if you played a game with your brother or sister and you won the game?

GOOD _____ BAD _____

5. How would you feel if you played with your pet and you had a good time?

GOOD _____ BAD _____

6. How would you feel if you baked some cookies for someone, and that person really liked them?

GOOD _____ BAD _____

APPENDIX C

WORKBOOK USED IN THE INSTRUCTIONAL UNIT

WORKBOOK USED IN THE INSTRUCTIONAL UNIT

M A K I N G   D E C I S I O N S

A B O U T
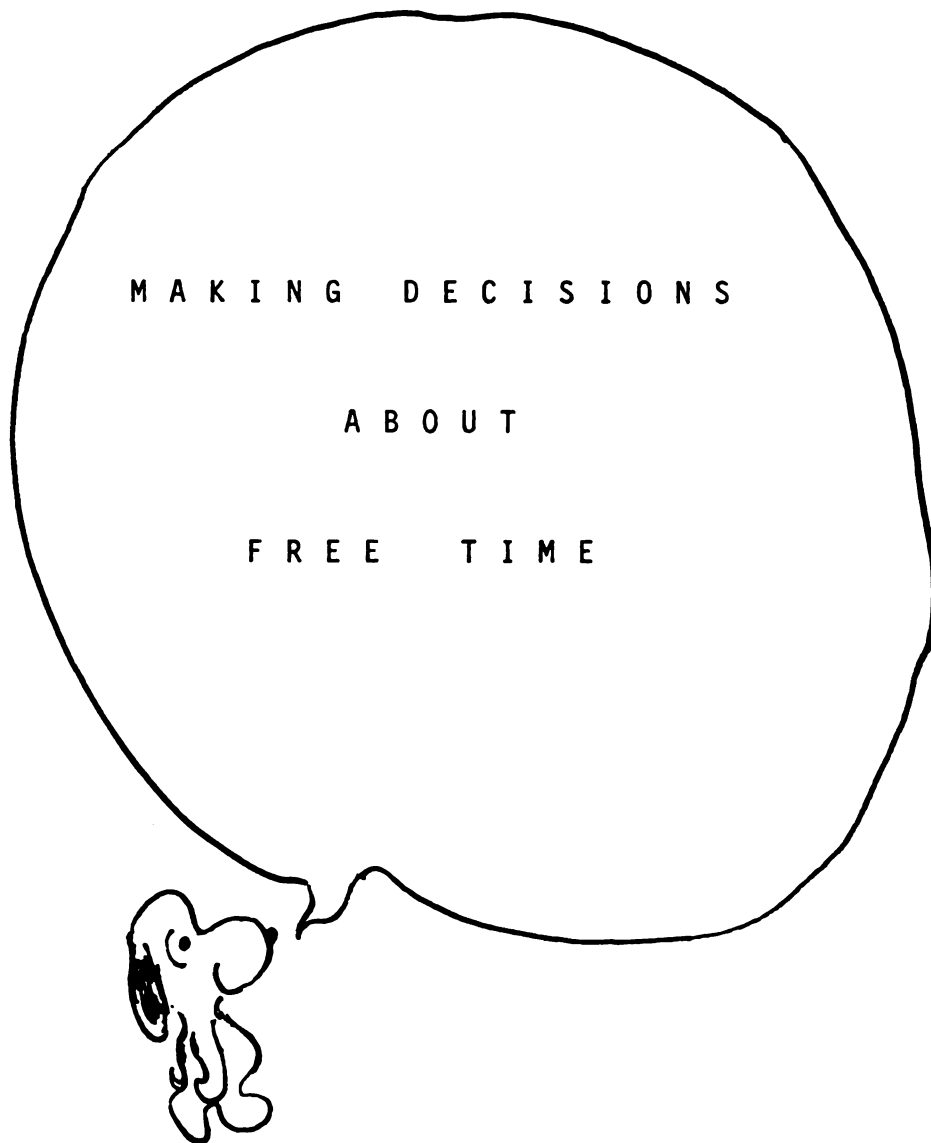
F R E E   T I M E

Name _____
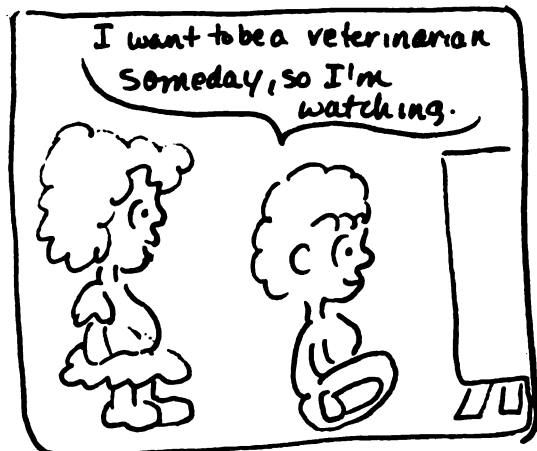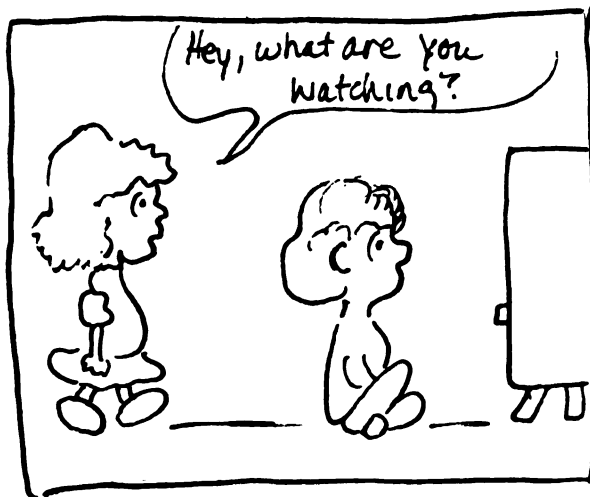
WHAT ARE YOUR GOALS?

Long Term _____

Short Term _____

What is Jill's goal?

What does Jill say to herself?

What does she decide to do?

How does it turn out?

Was she happy with her decision?

Panel 1: Sally, what do you like to do in your free time?

Panel 2: I like to play with my friends, because I learn from them.
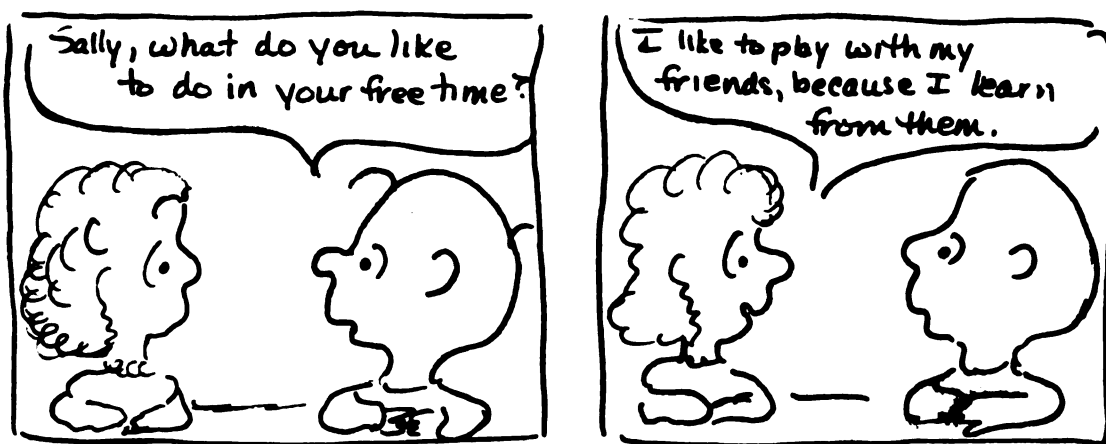
FREE TIME PIE - How Do <u>You</u> Spend Your Free Time?

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____
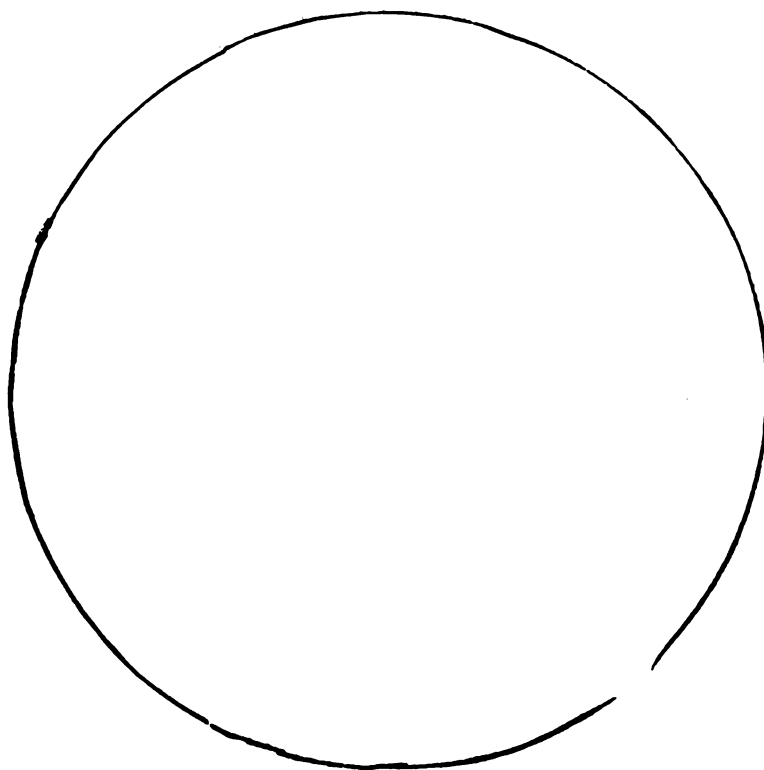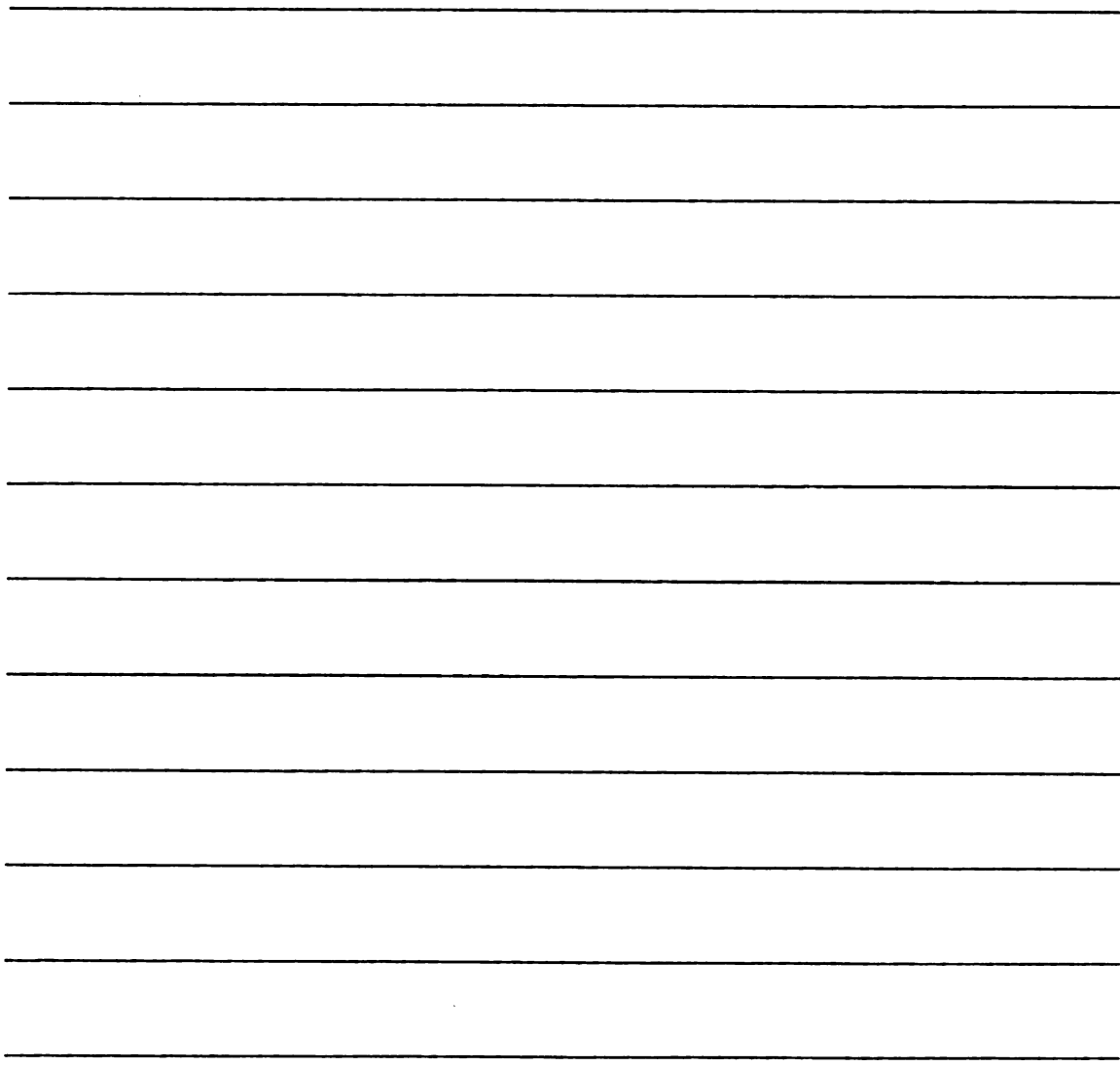
When do **you** have free time?

before school	_____	Saturday	_____
after school	_____	Sunday	_____
after dinner	_____	Other	_____

What do you like to do?

_____

_____

_____

_____

_____
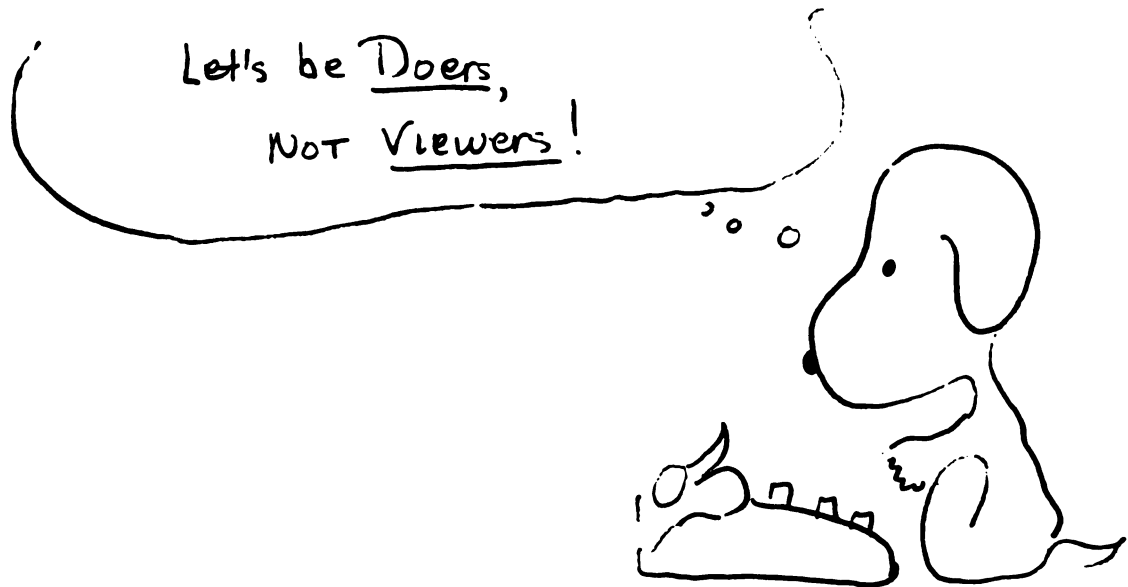
Have you changed your mind about how to spend your free time?

Would you spend less time watching TV?

What would you do?

_____

_____

_____

_____

_____

APPENDIX D

COLLECTION OF "HOURS" DATA

COLLECTION OF "HOURS" DATA

Please X the show you watched on Saturday for each time period. If

you did not watch TV, then put an X where it says you did not watch

TV and tell us in one word what you did.

Only check one TV show in each time period.

8:00am ___Popeye
        ___Alvin & the Chipmunks
        ___Scooby's Allstars
        ___Sesame Street
        ___Did not watch TV, I ____

8:30 ___Fantastic Four
        ___Sesame Street
        ___Popeye
        ___Scooby's Allstars
        ___Did not watch TV, I ____

9:00 ___Bugs Bunny/Road Runner
        ___Godzilla
        ___Mister Rogers
        ___Scooby's Allstars
        ___Did not watch TV, I ____

9:30 ___Superfriends
        ___Villa Alegre
        ___Bugs Bunny/Road Runner
        ___Godzilla
        ___Did not watch TV, I ____

10:00 ___Infinity Factory
        ___Superfriends
        ___Godzilla
        ___Bugs Bunny/Road Runner
        ___Did not watch TV, I ____

10:30 ___Tarzan Super 7
        ___Daffy Duck
        ___Superfriends
        ___Once Upon a Classic
        ___Did not watch TV,
          I _____

11:00 ___Fred & Barney
        ___Fangface
        ___Food for Life (Dieting)
        ___Tarzan Super 7
        ___Did not watch TV,
          I _____

11:30 ___Jetsons
        ___Pink Panther
        ___Hocking Valley Blue-
          grass
        ___Tarzan Super 7
        ___Did not watch TV,
          I _____

12:00 ___Fat Albert/Cosby Kids
        ___Fabulous Funnies
        ___Impressions
        ___Ascent of Man
        ___Did not watch TV,
          I _____

SATURDAY (Continued)

12:30 ___Buford
___Archies
___Escape of 1 Ton Pet
___Ascent of Man
___Did not watch TV,
___ I _____

1:00 ___Ark II
___Kids World
___Open Door
___Ascent of Man
___Did not watch TV,
___ I _____

1:30 ___30 Minutes
___This Week in Baseball
___Bill Dance Outdoors
___Management
___Did not watch TV,
___ I _____

6:00 ___News
___Chapter Six
___TV Auction
___"Killer Bees"
___Did not watch TV,
___ I _____

6:30 ___News
___TV Auction
___Killer Bees

___Did not watch TV,
___ I _____

7:00 ___Hee Haw
___Public Interest
___TV Auction
___Killer Bees
___Did not watch TV,
___ I _____

7:30 ___Muppets
___TV Auction
___Hee Haw
___Killer Bees
___Did not watch TV,
___ I _____

8:00 ___Bad News Bears
___Chips
___What's Happening
___TV Auction
___Did not watch TV,
___ I _____

8:30 ___Billy
___Delta House
___TV Auction
___Chips
___Did not watch TV,
___ I _____

9:00 ___Movie: I Know Why the
___ Bird Sings"
___BJ and the Bear
___Love Boat
___TV Auction
___Did not watch TV,
___ I _____

10:00 ___Supertrain
___Fantasy Island
___I Know Why the Bird
___ Sings
___TV Auction
___Did not watch TV,
___ I _____

MONDAY PROGRAMS

3:00   ___General Hospital
        ___Turnabout
        ___Guiding Light
        ___Another World
        ___Did not watch TV,
            I _____

3:30   ___MASH
        ___Villa Alegre
        ___General Hospital
        ___Another World
        ___Did not watch TV,
            I _____

4:00   ___Archies
        ___Emergency One
        ___Bonanza
        ___Sesame Street
        ___Did not watch TV,
            I _____

4:30   ___Emergency One
        ___Bonanza
        ___My Three Sons
        ___Sesame Street
        ___Did not watch TV,
            I _____

5:00   ___Mary Tyler Moore
        ___Sesame Street
        ___Gunsmoke
        ___Did not watch TV,
            I _____

5:30   ___News
        ___Bob Newhart
        ___Electric Company
        ___Gunsmoke
        ___Did not watch TV,
            I _____

7:00   ___Newly Wed Game
        ___Bowling for Dollars
        ___Six Million Dollar Man
        ___Spartan Sport Light
        ___Did not watch TV,
            I _____

7:30   ___Joker's Wild
        ___Odd Couple
        ___MacNeil/Lehrer Report
        ___Six Million Dollar Man
        ___Did not watch TV,
            I _____

8:00   ___White Shadow
        ___Little House on the
            Prairie
        ___Movie: Beach Patrol
        ___Dialog: Divorce
        ___Did not watch TV,
            I _____

8:30   ___Miss USA Beauty Pagent
        ___Global Paper
        ___Beach Patrol
        ___Little House on the
            Prairie
        ___Did not watch TV,
            I _____

9:00   ___Movie: Macon County Line
        ___Movie: Samurai
        ___Miss USA Pagent
        ___Global Paper
        ___Did not watch TV,
            I _____

10:00   ___Austin City Limits
          (Music)
        ___Samurai
        ___Miss USA Pagent
        ___Macon County Line
        ___Did not watch TV,
            I _____

TUESDAY PROGRAMS

3:00 ___General Hospital
___Another World
___Guiding Light
___Over Easy
___Did not watch TV,
___I _____

3:30 ___MASH
___Villa Allegre
___General Hospital
___Another World
___Did not watch TV,
___I _____

4:00 ___Razzmatazz
___Emergency One
___Bonanza
___Sesame Street
___Did not watch TV,
___I _____

4:30 ___My Three Sons
___Emergency One
___Seasame Street
___Bonanza
___Did not watch TV,
___I _____

5:00 ___Gunsmoke
___Mary Tyler Moore
___Mister Rogers
___Did not watch TV,
___I _____

7:00 ___Newly Wed Game
___Bowling for Dollars
___Six Million Dollar Man
___High School Quiz Bowl
___Did not watch TV,
___I _____

7:30 ___Joker's Wild
___Six Million Dollar Man
___Odd Couple
___MacNeil/Lehrer Report
___Did not watch TV,
___I _____

8:00 ___Report: Nuclear Accident
___Cliff Hangars
___Happy Days
___More Alike Than Differ-
ent
___Did not watch TV,
___I _____

8:30 ___Laverne and Shirley
___Conversation with MSU
Professors
___Report: Nuclear Accident
___Cliff Hangars
___Did not watch TV,
___I _____

9:00 ___Movie: Fraternity Row
___Movie: Stay Hungary
___Three's Company
___Roots, Rock, Reggae
___Did not watch TV,
___I _____

9:30 ___Taxi
___Fraternity Row
___Stay Hungary
___Roots, Rocks, Reggae
___Did not watch TV,
___I _____

10:00 ___Starsky and Hutch
___Fraternity Row
___Stay Hungary
___Global Paper Forum
___Did not watch TV,
___I _____

WEDNESDAY PROGRAMS

3:00 ___General Hospital
    ___Footsteps (Day Care
       Centers)
    ___Another World
    ___Guiding Light
    ___Did not watch TV,
       I _____

3:30 ___MASH
    ___Villa Alegre
    ___General Hopsital
    ___Another World
    ___Did not watch TV,
       I _____

4:00 ___Archies
    ___Emergency One
    ___Bonanza
    ___Sesame Street
    ___Did not watch TV,
       I _____

4:30 ___My Three Sons
    ___Emergency One
    ___Bonanza
    ___Sesame Street
    ___Did not watch TV,
       I _____

5:00 ___Gunsmoke
    ___Mary Tyler Moore
    ___Mister Rogers
    ___Did not watch TV,
       I _____

5:30 ___News
    ___Bob Newhart
    ___Gunsmoke
    ___Electric Company
    ___Did not watch TV,
       I _____

7:00 ___Newly Wed Game
    ___Bowling for Dollars
    ___Six Million Dollar Man
    ___TeleRevista
    ___Did not watch TV,
       I _____

7:30 ___Joker's Wild
    ___Odd Couple
    ___MacNeil/Lehrer Report
    ___Six Million Dollar Man
    ___Did not watch TV,
       I _____

8:00 ___Carol Burnett & Friends
    ___Eight in Enough
    ___American Lifestyles
       (Helen Keller)
    ___Sleeping Beauty Ballet
    ___Did not watch TV,
       I _____

8:30 ___Tiger Baseball
    ___Wild Kingdom
    ___Eight is Enough
    ___Sleeping Beauty Ballet
    ___Did not watch TV,
       I _____

9:00 ___Movie: Torn Between Two
       Lovers
    ___Charlies Angels
    ___Tiger Baseball
    ___Sleeping Beauty Ballet
    ___Did not watch TV,
       I _____

10:00 ___Vegas
     ___Tiger Baseball
     ___Torn Between Two Lovers
     ___Sleeping Beauty Ballet
     ___Did not watch TV,
        I _____

THURSDAY PROGRAMS

3:00   ___General Hospital
  ___Guiding Light
  ___Another World
  ___Over Easy
  ___Did not watch TV,
      I _____

3:30   ___MASH
  ___Villa Alegre
  ___General Hospital
  ___Another World
  ___Did not watch TV,
      I _____

4:00   ___Archies
  ___Emergency One
  ___Bonanza
  ___Sesame Street
  ___Did not watch TV,
      I _____

4:30   ___Emergency One
  ___Bonanza
  ___My Three Sones
  ___Sesame Street
  ___Did not watch TV,
      I _____

5:00   ___Gunsmoke
  ___Mary Tyler Moore
  ___Mister Rogers
  ___Did not watch TV,
      I _____

5:30   ___News
  ___Bob Newhart
  ___Electric Company
  ___Gunsmoke
  ___Did not watch TV,
      I _____

7:00   ___Newly Wed Game
  ___Six Million Dollar Man
  ___Bowling for Dollars

  ___Did not watch TV,
      I _____

7:30   ___Six Million Dollar Man
  ___Joker's Wild
  ___Odd Couple
  ___MacNeil/Lehrer Report
  ___Did not watch TV,
      I _____

8:00   ___Time Express
  ___High Cliff Manor
  ___Mork and Mindy
  ___Nova
  ___Did not watch TV,
      I _____

8:30   ___Nova
  ___Time Express
  ___Gilligan's Island
  ___Mork and Mindy
  ___Did not watch TV,
      I _____

9:00   ___Hawaii-Five O
  ___IKE
  ___World Documentary
  ___Gilligan's Island
  ___Did not watch TV,
      I _____

10:00   ___Barnaby Jones
  ___Susan Anton (Music)
  ___Inflation
  ___IKE
  ___Did not watch TV,
      I _____

APPENDIX E

QUESTIONNAIRE

QUESTIONNAIRE

Name _____ Boy_____ Girl _____

1. What kinds of things did Jill say to herself before deciding whether or not to watch TV?

2. Do you ask yourself questions before deciding whether to watch television?

     Yes _____   No _____

   Why or why not? _____

   _____

   _____

   What do you say to yourself? _____

   _____

   _____

3. If you had one hour of free time, which do you think would be the best way for you to spend it? Circle your answer.

WATCH WONDER WOMAN	OR	READ A GOOD ADVENTURE BOOK
PLAY DETECTIVES WITH FRIENDS	OR	WATCH HAWAII FIVE O
PLAY COWBOYS OR COWGIRLS	OR	WATCH GUNSMOKE
WATCH CHARLIE'S ANGELS	OR	PLAY A DETECTIVE GAME

3. Continued

PLAY BIONIC PEOPLE	OR	WATCH SIX MILLION DOLLAR MAN
WATCH STARSKY AND HUTCH	OR	PLAY POLICEMEN OR POLICEWOMEN

4. If one of your goals is to learn how to solve problems, which show would you watch in order to learn about good ways of solving problems? Circle your answer.

LITTLE HOUSE ON THE PRAIRIE	OR	SIX MILLION DOLLAR MAN
CHARLIE'S ANGELS	OR	EIGHT IS ENOUGH
HAWAII FIVE O	OR	MY THREE SONS
ONCE UPON A CLASSIC	OR	STARSKY AND HUTCH
GUNSMOKE	OR	THE WALTONS
WONDER WOMAN	OR	MASH

5. If you had an hour or two of free time, what do you think would be the best way for you to spend it? Circle your answer.

1. Read a good comic	or	Watch a good TV show
2. Watch an adventure TV show	or	Read an adventure story
3. Play a sport with a friend	or	Watch a sport on TV
4. Watch a good TV show	or	Listen to some good music
5. Play a game with friends	or	Watch a game show
6. Watch a TV show	or	Make a dessert
7. Do some homework problems	or	Watch a TV show
8. Watch a good TV show	or	Complete a job around the house
9. Write to a friend who lives away	or	Watch a TV show
10. Watch a TV show	or	Go for a walk or run
11. Go for a bike ride	or	Watch a TV show
12. Play a good game	or	Watch a good TV show

5. Continued)

13. Watch a TV show   or   Have a friend over

14. Go on an errand with Mom   or   Watch a TV show
    or Dad

6. Susan's goal is to be a doctor. From each pair below, we would
   like to know which activity you think is more important for her
   and how much more important you think it is. Circle your answer.

   a. Watching TV   or   Playing with friends

       How much more important? Put an X after your answer.

       Really a lot more ____
       A lot more   ____
       Just a little more ___

   b. Reading for fun   or   Watching TV

       How much more important? Put an X.

       Really a lot more ____
       A lot more   ____
       Just a little more ___

   c. Watching TV   or   Doing her homework

       How much more important? Put an X.

       Really a lot more ____
       A lot more   ____
       Just a little more ___

7. John's goal is to be a basketball player. From each pair below,
   which one do you think is more important for him and how much
   more important is it? Circle your answer.

   a. Watching TV   or   Playing basketball

       How much more important? Put an X after your answer.

       Really a lot more ____
       A lot more   ____
       Just a little more ___

7. Continued

    b. Reading for fun   or   Watching TV

       How much more important? Put an X.

         Really a lot more ____
         A lot more   ____
         Just a little more ___

    c. Watching TV   or   Doing his homework

       How much more important? Put an X.

         Really a lot more ____
         A lot more   ____
         Just a little more ___

8. Last night Susan had one hour of free time. She sat down and thought to herself: "What should I do? If I do my homework, I'll be ready if the teacher calls on me tomorrow. If I watch TV, I'll be able to talk to my friends about the program." Susan decides to do her homework.

The next day in class the teacher didn't even call on her. Susan felt bad. She wonders what she should do the next time:

IF YOU WERE SUSAN, WOULD YOU STILL THINK VERY CAREFULLY BEFORE MAKING YOUR DECISION WHETHER TO WATCH TV OR DO HOMEWORK?

    Yes _____   No _____

WHY? _____

_____

IF YOU WERE SUSAN, WHAT WOULD YOU DO NEXT TIME?

    WATCH TV _____   DO YOUR HOMEWORK _____

WHY WOULD YOU DO THAT? _____

_____

_____

9. Yesterday Bob came home from school and he thought carefully to himself: "I've got some free time. I could go play kickball or I could watch TV. If I play kickball, I could get some exercise. If I watch TV, I could just relax. If I want to get in shape, I should play kickball."

Bob went out to play kickball. He accidentally tossed the ball into someone's window. He knew that he would have to pay for a new window. Bob felt that if he had just stayed in and watched TV, none of this would have happened. He wonders what he should do the next time?

IF YOU WERE BOB, WOULD YOU STILL THINK VERY CAREFULLY BEFORE MAKING YOUR DECISION WHETHER TO WATCH TV OR TO PLAY KICKBALL?

Yes _____   No _____

WHY? _____

_____

IF YOU WERE BOB, WHAT WOULD YOU DO NEXT TIME?

WATCH TV _____   PLAY KICKBALL _____

WHY WOULD YOU DO THAT? _____

_____

_____

10. Last weekend, John got up early. He thought to himself: "Should I watch TV? Or should I surprise my parents with breakfast? If I watch TV, I can just lie around, but if I make breakfast, I can repay my parents for nice things they've done for me."

John decided to make breakfast. Before he had a chance to clean up, his mother came into the kitchen. She became angry with him when she saw the mess. John was upset because things didn't work out the way he had planned. He wonders what he should do the next time.

IF YOU WERE JOHN, WOULD YOU STILL GIVE CAREFUL THOUGHT TO YOUR DECISION ABOUT WHETHER TO WATCH TV OR MAKE BREAKFAST?

Yes _____   No _____

10. Continued

WHY? _____

_____

WHAT WOULD YOU DO THE NEXT TIME?

    WATCH TV _____   MAKE BREAKFAST _____

WHY WOULD YOU DO THAT? _____

_____

_____

11. Yesterday, when Susan came home from school, her mother asked
    her if she would like to go shopping. Susan thought carefully,
    "If I stay home, I can watch that new program that I've been
    wanting to see. If I go shopping with my mom, I may be able to
    buy that new game I've been wanting. I think I'll go shopping."

    On the way into the shopping center, Susan fell on the pavement
    and they had to return home. Her leg really bothered her, and
    she had missed her program. Besides that, she didn't get the
    new game. Susan felt that if she had just stayed home and
    watched TV, none of this would have happened.

    IF YOU WERE SUSAN, WOULD YOU STILL GIVE CAREFUL THOUGHT TO YOUR
    DECISION ABOUT WHETHER TO WATCH TV OR GO SHOPPING?

        Yes _____   No _____

WHY? _____

_____

WHAT WOULD YOU DO THE NEXT TIME?

    WATCH TV _____   GO SHOPPING _____

WHY? _____

_____

_____

APPENDIX F


GLOSSARY

APPENDIX F

GLOSSARY

Anti-social television - television programming which includes a higher proportion of violent methods (verbal and physical abuse) of solving problems than other programming.

Extinction - perseverence in performing a task in the absence of reinforcement.

Negative consequences (non-reinforcing outcomes) - following the performance of a behavior, an experience which is not pleasing to the performer, does not increase the probability that the behavior will occur again.

Positive reinforcement (positive consequences) - a particular stimulus which increases the probability that a certain behavior will recur.

Pro-social television - television programming which includes a higher proportion of non-violent methods (discussion as poosed to physical or verbal abuse) of problem solving.

Punishment - that which decreases the likelihood of the recurrence of a particular behavior.

Self-verbalization (self-instruction, verbal mediation) - talking to oneself when confronted with a new task: a problem to be solved, something to be learned, or a concept to be attained.

Vicarious partial reinforcement - the occurrence of a reinforcing stimulus to a model in only a certain percentage of cases; outcome is reinforcing to the observer as well.

Vicarious reinforcement - the occurrence of a stimulus to a model which increases the likelihood that the modeled behavior will be imitated; the outcome is reinforcing to the observer as well.

LIST OF REFERENCES

LIST OF REFERENCES

Anderson, J. A., & Ploghoft, M. M.   Television receivership skills:
    The new social literacy. Paper presented at the International
    Communication Association Conference, West Berlin, Germany,
    June 1977.

Atkin, C. K., Murray, J. P., & Nayman, O. B.   Television and social
    behavior: An annotated bibliography of research focusing on
    television's impact on children. Washington, D.C.: Government
    Printing Office, 1971.

Bandura, A.   Principles of behavior modification. New York: Holt,
    Rinehart & Winston, 1969.

Bandura, A.   Social learning theory. New Jersey: Prentice Hall, 1977.

Bandura, A.   Vicarious and self-reinforcement processes. In (Glaser,
    R., The Nature of Reinforcement.) New York: Academic Press,
    1971, 228-279.

Bandura, A., Grusec, & Menlove.   Some social determinants of self-
    monitoring reinforcement systems. Journal of Personality and
    Social Psychology, 1967, 5 4, 449-455.

Bem, S.   The role of comprehension in children's problem-solving.
    Developmental Psychology, 1970, 2, 351-358.

Berger, S. M.   Observer perseverance as related to a model's success:
    A social comparison analysis. Journal of Personality and Social
    Psychology, 1971, 19, 341-350.

Berger, S. M., & Johansson, S. L.   Effect of a model's expressed
    emotions on an observer's resistance to extinction. Journal of
    Personality and Social Psychology, 1968, 10, 53-58.

Bisese, V. S.   Imitation behavior as a function of direct and vicarious
    reinforcement. Dissertation Abstracts, 1966, 26, 6155. (Abstract)

Buerkel-Rothfuss, N.   Mediating the effects of violent television on
    children: A proposed intervention strategy. Unpublished disser-
    tation, Michigan State University, 1979.

Camp, B., Blom, G., Herbert, F., & Van Doorwick, W. "Think aloud": A program for developing self-control in young aggressive boys. Unpublished manuscript, University of Colorado School of Medicine, 1976.

Campbell, D. T. & Stanley, J. C. Experimental and Quasi-experimental Designs for Research. Chicago: Rand McNally & Co., 1963.

CASTLE Curriculum Intervention. Developed by Henry, R. C., & Korzenny, S.S. In Buerkel-Rothfuss, N. Mediating the effects of violet television on children: A proposed intervention strategy. Unpublished Dissertation, Michigan State University, 1979.

Chalmers, D. K., Horne, W. C., & Rosenbaum, M. E. Social agreement and the learning of matching behavior. Journal of Abnormal and Social Psychology, 1963, 66, 556-561.

Doolittle, J. A proposed school intervention curriculum designed to help children cope with the effects of television. Paper presented at the International Communication Association Convention, Berlin, West Germany, June 1977.

Festinger, L. A theory of social comparison processes. Human Relations, 1954, 7, 117-140.

Flanders, J. P. A review of research on imitative behavior. Psychological Bulletin, 1968, 69, 316-337.

Gerbner, G., Gross, L., Signorielli, N., Morgan, M. & Jackson-Breck, M. Highlights of violence profile no. 10. Trends in network television drama and viewer conceptions of social reality. Annenberg School of Communications, University of Pennsylvania, Philadelphia, 1979.

Glass, C. Response acquisition and cognitive self-statement modification approaches to dating behavior training. Unpublished doctoral dissertation, Indiana University, 1974.

Hamilton, M. L. Vicarious reinforcement effects on extinction. Journal of Experimental Child Psychology, 1970, 9, 108-114.

Hill, W. F. Learning theory and the acquisition of values. Psychological Review, 1960, 67, 5, 317-331.

Hovland, C. I., Lumsdaine, A. A., & Sheffield, F. D. Experiments on mass communication. New Jersey: Princeton University Press, 1949.

Jensen, A. Verbal mediation and educational potential. Psychology in the Schools, 1966, 3, 99-109.

Karnes, M., Teska, J., & Hodgins, A. The effects of four programs of classroom intervention on the intellectual and language development of 4-year-old disadvantaged children. American Journal of Orthopsychiatry, 1970, 40, 48-76.

Lewis, D. J., & Duncan, C. P. Vicarious experience and partial reinforcement. Journal of Abnormal and Social Psychology, 1958, 57, 321-326.

Lumsdaine, A. A., & Janis, I. L. Resistance to "counter propaganda" produced by a one-sided versus a 2-sided "propaganda" presentation. In C. I. Hovalnd, I. L. Janis, and H. H. Kelly (Eds.), Communication and Reassurance. Mass: Yale University Press, 1953.

Luria, A. The directive function of speech in development. Word, 1959, 18, 341-352.

Lyle, J., & Hoffman, H. R. Children's use of television and other media. In (E. A. Rubinstein, G. A. Comstock and J. P. Murray, Eds.) Television and social behavior: Vol. 4. Television in day-to-day life: Patterns of use. Washington, D.C.: U.S. Government Printing Office, 1972, pp. 129-256.

Mahoney, M. J., & Thoresen, C. D. Self-control: Power to the person. California: Brooks/Cole Publishing Company, 1974.

Marston, A. R., & Kanfer, F. H. Group size and number of vicarious reinforcements in verbal learning. Journal of Experimental Psychology, 1963, 65, 593-596.

Mausner, B., & Block, B. L. A study of the additivity of variables affecting social interaction. Journal of Abnormal and Social Psychology, 1957, 54, 250-256.

Meichenbaum, D. Cognitive behavior modification: An integrative approach. New York: Olenum Press, 1977.

Meichenbaum, D., & Cameron, R. The clinical potential of modifying what clients say to themselves. In (M. J. Mahoney and C. E. Thoresen, Eds.), Self-control, power to the person. California: Brooks/Cole Publishing Company, 1974, pp. 263-291.

Meichenbaum, D., & Goodman, J. Training impulsive children to talk to themselves: A means for developing self-control. Journal of Abnormal Psychology, 1971, 77, 115-126.

National Parent-Teacher Assoication. United Press International Release, recorded in the Detroit Free Press (March 29); also Strange Bedfellows - article in Broadcasting, March 6, 1978.

Nielsen Company. The television audience: 1975. Chicago: A. C. Nielsen Company, 1975.

Nielsen Company. The television audience: 1976. Chicago: A. C. Nielsen Company, 1976.

Palkes, H., Stewart, M., & Freedman, J. Improvement in maze performance of hyperactive boys as a function of verbal-training procedures. Journal of Special Education, 1972, 5, 337-342.

Paulus, J. B., & Seta, J. J. The vicarious partial reinforcement effect: An empirical and theoretical analysis. Journal of Personality and Social Psychology, 1975, 34, 5, 930-936.

Roberts, D. F. United Press International release, recorded in The Lansing State Journal (June 5, 1978).

Rosenbaum, M. E., & Bruning, J. L. Direct and vicarious experience of variations in percentage of reinforcement. Child Development, 1966, 37, 959-966.

Rosenbaum, M. E., Chalmers, D. K., & Horne, W. C. Effects of success and failure and the competence of the model on the acquisition and reversal of a matching behaior. Journal of Psychology, 1962, 54, 251-258.

Rosenbaum, M. E., & Tucker, I. F. The competence of the model and the learning of imitation and nonimitation. Journal of Experimental Psychology, 1962, 63, 183-190.

Sarason, I. An information processing approach to stress and anxiety. Paper presented at NATO Advanced Study Institute, Urbino, Italy, 1976.

Schramm, W., Lyle, L., & Parker, E. B. Television in the lives of our children. California: Stanford University Press, 1961.

Shmurak, S. Design and evaluation of three dating behavior training programs utilizing response acquisition and cognitive self-statement modification techniques. Unpublished doctoral dissertation, Indiana University, 1974.

Singer, D., & Singer, J. Press release reported in the New Haven Register (May 1, 1978).

Spivack, G., & Shure, M. Social adjustment of young children: A cognitive approach to solving real-life problems. San Francisco: Jossey-Bass, 1974.

Surgeon-General's Scientific Advisory Committee on Television and Social Behavior. Television and growing up: The impact of televised violence. In (E. A. Rubenstein), Television and the young viewer. American Scientist, 1972, 66, 685-693.

Thelen, M. H., & Soltz, W. The effect of vicarious reinforcement on imitation in two social-racial groups. Child Development, 1969, 40, 879-887.

Thoresen, C. E., & Mahoney, M. J. Behavioral self-control. New York: Holt, Rinehart & Winston, 1974.

Vygotsky, L. Thought and language. New York: Wiley, 1962.