THE EFFECTS OF TYPE OF FEEDBACK UPON A LEARNER'S AFFECTIVE BEHAVIOR

by

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ABSTRACT

There is much evidence to show the various effects of punishment and reward on the different aspects of teaching, particularly those in the cognitive domain. The area which has received very little attention, is that of affect, more particularly, how punishment and reward affect a learner's feeling (affect) toward different subjects. The purpose of this study was to determine how different types of feedback relative to a learning task, affect a learner's affective behavior. It was hypothesized that a learner who received punishment, with no informational feedback, for every response he made on a given learning task would show a lower measure of affect, when rated on various behavioral measures, based on the major levels of Krathwohl's Affective Taxonomy than learners receiving other types of feedback combinations such as reward-only, reward and punishment, or punishment only.

The study employed a 1 X 3 factoral design with four levels of feedback, namely: Reward-Only (R-O), Reward and Punishment (R-P), Punishment-Only (P-O) and Punishment for All Responses (P-AR). A directional hypothesis, stating that the (R-O), (R-P) and (P-O) groups would have significantly higher affective scores than the (P-AR) group, was tested. A

total of 42 children in six grade four classes in the Greater Victoria School District were randomly assigned to four experimental groups.

All subjects read a three page lesson on the different rules for defining a three-attribute, conjunctive concept. The Ss were then required to complete a card-sorting task, after which their affective behavior toward the concept they had learned was assessed, using Krathwohl's Affective Taxonomy as the basis for the measure. On the card-sorting task the Ss were given various combinations of feedback according to the group they were in. A response board containing a panel of lights was used. The addition or subtraction of lights from the panel served as the basis for the manipulation of reward and punishment in the study. The lights represented points which could be exchanged at the end of the lesson for either candy or gum.

One-way ANOVAs were perfor ed on six dependant variables, representing affective-type behavior based on the first three of the five major levels of Krathwohl's Taxonomy, and the card-sort results. No significant results were apparent. However, on closer scrutiny of the data, it was noted that there appeared to be differences in the Ss scores on five of the variables when the Ss were grouped on the basis of those Ss scoring low and those Ss scoring high on the card-sort. It was posited that lack of understanding, resulting in poor scores was more punishing than the mild form of punishment used in the "punishment" conditions. Thus the data were

regrouped into the categories of low and high scores on the card-sort. Significant differences on three of the five variables ($P < .05$) were noted, providing some support for the initial hypothesis. Implications are that further studies need to be conducted, using punishment and reward, and Krathwohl's Affective Taxonomy as a means of assessment.

Examiners [redacted]

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CHAPTER 1
INTRODUCTION

INTRODUCTION

When we change our responses by reacting to a stimulus, or situation, we are said to have learned. Changing human behavior, or learning, broadly conceived, is a continuing process in which we all take part, whether knowingly or unwittingly. Learning, as defined by Hilgard and Bower (1966):

> ... is the process by which an activity originates or is changed through reacting to an encountered situation, provided that the characteristics of the change in activity cannot be explained on the basis of native response tendencies, maturation, or temporary states of the organism (e.g. fatigue, drugs, etc.)(p.2)

A shorter more concise definition is that of Guthrie who stated that learning takes place whenever a response follows a stimulus.

We may attempt to change the behavior of others by manipulating basic rules of reward and punishment. We call this teaching, or stated in a slightly different way, teaching is the active state of changing another's behavior.

Teaching, and the recipient's reaction, learning, fall into three broad domains; cognitive, affective, and psychomotor. The cognitive domain deals with what we term, intellectual tasks. The affective domain deals with the area of feeling, emotion, or the degree of acceptance or rejection

of given stimuli. The psychomotor domain is concerned with physical movement.

A taxonomy, presenting an ordered leveling of the cognitive domain, has been produced by a committee headed by B. S. Bloom. A companion taxonomy of educational objectives for the affective domain was produced under the guidance of D. R. Krathwohl. The third and most recent taxonomy of educational objectives is that of the psychomotor domain, written by Anita Harrow (1972). In this classification the objectives emphasize muscular or motor skills, manipulation of materials and objects, or acts of learning requiring neuromuscular co-ordination.

All three taxonomies specify levels of objectives which represent behaviors that can be learned by the student, and taught toward and assessed by the teacher. Since, as it is assumed, these behaviors can be learned, it should be possible to change the student's behavior from one level to the next by use of rules of reward and punishment (management techniques) for behavior change.

Use of Reward and Punishment to Change Behavior

Countless studies have been done which demonstrate that reinforcement of a response will strengthen the occurrence of that response and if the response is not in the subject's repertoire, shaping, by successive approximation, may be used to acquire it.

The general effect of punishment on behavior is that punishment suppresses behavior and aids the subject in

discriminating appropriate from inappropriate responses. However, it has been noted that punishment may lead to escape and avoidance behavior. By association the punisher may also be avoided.

Whenever punishment is discussed it often arouses a variety of responses among those participating in the discussion. Punishment can be shown to be an effective management technique when used with understanding and discrimination. However, the effect of punishment is sometimes not understood and as a result, its administration is often mishandled.

Punishment, and its counterpart, reward, have most often been applied in changing cognitive behavior. However, Bloom (1956), Krathwohl (1965) and others recognize a close interaction between cognitive and affective behavior. A stimulus which effects change in one domain may also effect change in the other. (White and McConnell 1974)

Many studies have been undertaken to show how reward and punishment can strengthen cognitive behaviors, (Brackenbill and O'Hara (1958), Meyer and Offenbach (1962) etc.). There are other studies which show how these two management techniques can be employed to help students attend and respond to their studies. (Heitzman (1974), Luthans and Kneitner (1973), Madsen and Forsythe (1973). Attending, or Receiving and Responding are at the lower levels of Krathwohl's Taxonomy of Educational Objectives: Affective Domain. (1965) However, very little research has

been done that shows the effects of punishment and reward on behaviors classified in the middle and upper levels of Krathwohl's Taxonomy.

It seems reasonable to assume that either reward alone, punishment alone, or their combination would be sufficient to cause subjects to attend to and respond to instruction. However, it does not follow that punishment alone would cause behavior, manifest of the higher levels of Krathwohl's taxonomy, to occur, e.g. valuing - type behaviors.

The present study was undertaken to investigate whether a subject's affective behavior can be changed from that described by the lower levels of Krathwohl's taxonomy to those of the higher levels, through the use of various combinations of reward and punishment.

DEFINITIONS

Behavior - Any activity of an organism.

Learning - The process by which a behavior originates or is changed through reacting to an encountered situation, provided that the characteristics of the change in behavior cannot be explained on the basis of native response tendencies, maturation, or temporary states of the organism (e.g. fatigue, drugs, etc.). (Hilgard and Bower 1966 p.2)

Response - An instance of an identifiable and measurable part of behavior, or a class of such instances.

Reinforcer - Any stimulus or stimulus event which, when used in a reinforcement paradigm, is found to produce

the phenomena of conditioning.

Positive Reinforcement - the occurrence of a positively reinforcing event following the emission of an operant response. The two events may occur as a function of a program, or be accidental. Probability of the operant response occurring again will be increased.

Negative Reinforcement - The removal or termination of an aversive stimulus following the emission of an operant response. Such removal or termination may be contingent or accidental and enhance the probability of the operant response occurring again.

Punishment - is a reduction of the future probability of a specific response as a result of the immediate delivery of a stimulus for that response.

The stimulus is designated the "punishing stimulus".

The entire process is designated "punishment". (Azrin and Holz 1966)

Time Out (T.O.) - Removing the organism from a situation where reinforcement or punishment is available, or noticeably withholding or suspending the reinforcement or punishment contingencies for a short period of time.

Avoidance Behavior - Behavior which postpones an aversive event and thus provides temporary escape from conditional aversive stimuli.

Suppression - Any reduction in rate of responding which is temporary in nature. Usually associated with a

temporary (and usually aversive) change in the environment.

Operant Conditioning - Is a process in which presentation or removal of a reinforcing stimulus or stimulus-event, subsequent to the emission of a response, results in a response being strengthened or weakened.

Shaping - Reinforcing that class of responses in an organism's present repertoire which most resembles a specified target behavior not presently in the repertoire; and the continuance of reinforcement, with each successive reinforcement made contingent upon a behavior which more closely approximates the target than the previously reinforced behavior.

Respondent Conditioning - Is a process in which pairing an unconditioned eliciting stimulus (U.C.S.) with a neutral or conditioned stimulus results in both stimuli eliciting the same or nearly the same response.

Cognition - A broad term subsuming all the intellectual activities.

Affect - A broad term subsuming emotion, feeling, mood and (usually) temperamental characteristics.

Psychomotor - A broad term subsuming observable voluntary human movement from involuntary reflex movement.

STATEMENT OF THE PROBLEM

The major problem in this study can be stated as a question: Using punishment or reward, or combinations of these in management techniques, what kinds of behavioral change, along the continuum of the Taxonomy of Educational Objectives: Affective Domain, can be effected in students?

Correlation of the Cognitive and Affective Domains

Implicit in the statement of the problem are the close ties which link the cognitive and affective domains. This is particularly the case when we view this from a school learning situation. Affect has an important place in the teaching-learning milieu in class. If the teacher wishes to attain the cognitive goals which are set, he or she must ensure that there is adequate affective behavior on the part of the students, e.g. attention to the task and responses made. We know, for example, that if a child is having success in a subject, the chances are good that he will have a positive attitude toward that particular subject. Hence, mastery in the cognitive domain, seems to be positively associated with behavior in the affective domain. Attainment of affective goals facilitates learning in the cognitive domain. The two are so closely related that we tend to seek them both at the same time.

THE AFFECTIVE DOMAIN

The Affective Taxonomy: Description and Use

Krathwohl and his associates devoted a great deal of

care and thought in producing the Affective Taxonomy. In order to help the educator understand the need for an affective taxonomy they described in detail the development and philosophy of the taxonomy.

The outline, in chart form, Figure 1 will help the reader focus on the continuum of objectives, and at the same time grasp the individual philosophy of each item. The chart is an attempt to portray, graphically, the developmental sequence of affective behavior from the simple to the complex levels. Parallel aspects of the simple to complex development are those listed under "Internalization"; namely, concrete to abstract and extrinsically to intrinsically reinforcing behaviors. The levels are numbered and have a brief description beside the classification name. Within each level, the chart should be read horizontally as it shows how sample objectives are created through the use of descriptions, examples of infinitives, and examples of nouns. Finally, in the column at the far right of the chart, are sample questions corresponding to various levels of objectives. For a more detailed description of how to write affective objectives, refer to the Taxonomy of Educational Objectives by Krathwohl, Bloom and Masia. (1965)

MANAGEMENT TECHNIQUES

There is reason to believe that affective and cognitive behavior are closely associated. All teachers have cognitive objectives, whether or not they state them, and there is also

a certain implicit intent to change a student's behavior from one level to another along the continuum of the Taxonomy of the Affective Domain. This intent, cognitive as well as affective, is usually manifested through one or more of four types of behavior management techniques.

There are several management techniques used in schools to change behavior and create a learning situation. By management techniques is meant various combinations of reward and punishment used to modify or "manage" the cognitive and affective behavior of students in the classroom. Since a change in affective behavior may lead to a change in cognitive behavior, or vice versa, the use of various management techniques to generate or strengthen higher levels of affective, or cognitive behavior would seem desirable.

Because we commonly perceive affective behavior in positive terms, (developing rather than diminishing a behavior) and, as typically stated by teachers, behavioral objectives in the affective domain are usually of a positive nature, the major technique in changing affective behavior would appear to be that which involves a great deal of positive reinforcement, (Reward). However, other methods could possibly be used, and frequently are, for example, a combination of punishment and reward, or punishment without any reward.

The four types of management techniques to be examined for their effects on affective behavior of students in this

study will be:

- Reward only,
- Reward and punishment,
- Punishment with corrective feedback,
- Punishment only, no corrective feedback.

When applied to this study, the reward only technique will involve reinforcement for correct responses only. Thus, there is reinforcement and informational feedback to the S for every response.

The punishment and reward technique will mean that correct responses will be reinforced, whereas incorrect responses will be punished. This technique also gives the S informational feedback for every response.

When the punishment with corrective feedback technique is used, the S will be punished for all incorrect responses, whereas correct responses will receive no reinforcement. In essence, however, this will allow the S informational feedback on all responses since he will know that if the response he makes is not punished, then it must be correct.

The last technique, punishment only, with no corrective feedback, is one that is often unwittingly used in the classroom. For example, the teacher might assign a set of new math problems for homework. The student may not know how to complete them but attempts them anyway since they are required for next day. On the following day, when the incorrectly answered problems are submitted by the student, the teacher, possibly due to lack of time, might handle the

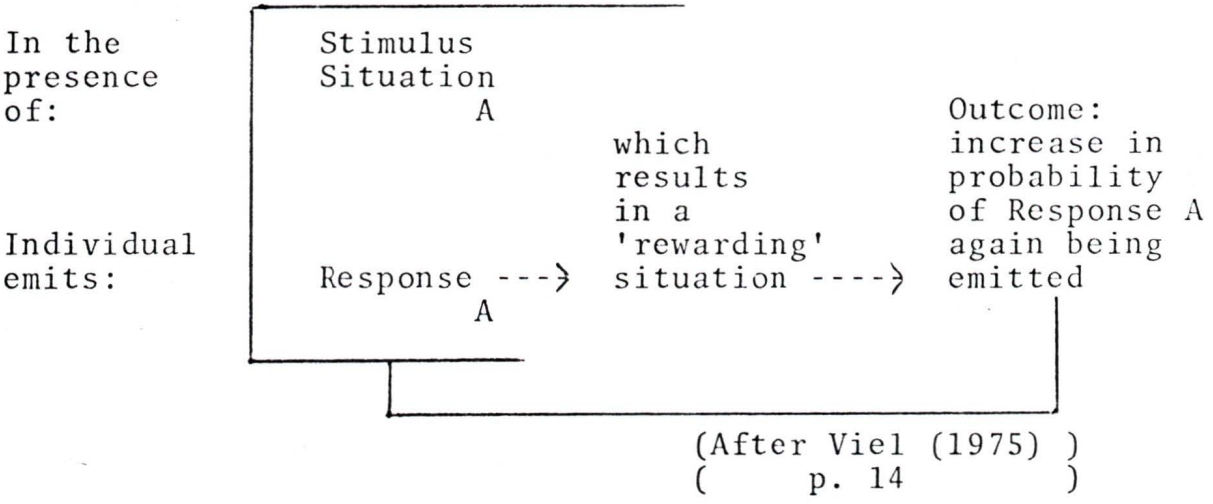
situation by telling the student, "No, those are wrong, try harder on them for tomorrow;" hence, punishment, without corrective feedback on how to better attempt the problems. In the present experiment, the S in this condition will be punished for every response, thus he obtains no informational feedback to help him discriminate correct from incorrect responses.

Following are more detailed descriptions of the operations of reward and punishment.

Positive Reinforcement

When a stimulus evokes a response from an individual, and the response creates a rewarding situation, for the individual, or is rewarded as a result, the probability of the response again being emitted on presentation of the stimulus is increased. The following figure is a general model for Positive reinforcement or (Reward).

Positive reinforcement



(After Viel (1975) p. 14)

Many instances occur when positive reinforcement

techniques are unsuitable. In order that the student may quickly discriminate between what is desirable behavior and what is not, punishment may be helpful.

In addition to the more common use of punishment to decrease destructive behaviors such as fighting and rough horseplay, (see MacMillan Forness, and Trumbull 1973, p.88) punishment can be used to give the student quick discrimination between which groups of behavior are inappropriate, and which are likely to be more appropriate.

Punishment

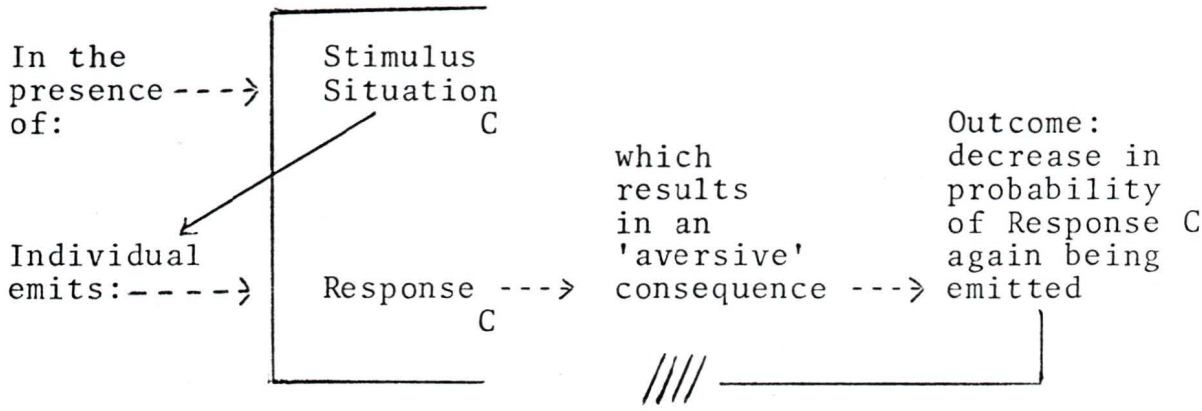
There are two basic types of punishment, each of which, by definition, results in the reduction of the future probability of a specific response. The first is the case in which a stimulus is applied following a response, with the result that the response reduces in frequency or strength. The second type of punishment is where positive reinforcement is discontinued until suitable behavior is re-established. This can take the form of "time-out", which requires the student to leave the situation and return when appropriate behavior can be guaranteed.

To be effectively administered, punishment should be:

1. Presented immediately after the undesirable response.
2. Arranged so that the punishment cannot be escaped.
3. Sufficiently intense to suppress the response but be physically safe.
4. Administered only when a suitable alternative and desirable response is clearly available to the student.

Both types of punishment can be effectively used in creating more suitable behavior. A general model for punishment of the first type is presented in the following figure:

Punishment



(After Viel (1975))
(. p. 14)

PURPOSE OF THE STUDY

The main purpose of this study, stated slightly differently from the major problem for investigation, is to learn more about how various management techniques of positive reinforcement, punishment, or combinations of these can be used to change student's affective behavior as described by the various levels of Krathwohl's taxonomy.

EXPERIMENTAL PROCEDURE

Briefly, the experimental approach will use four management techniques, namely: reward only; reward and punishment together; punishment, with corrective feedback; and punishment only, with no corrective feedback. Subjects' affective behavior will be measured, using Viel's (1975) study as a base. The subject's affective behavior will be

evaluated, relative to the various levels of affective behavior according to Krathwohl's Taxonomy (1965).

CHAPTER SUMMARY

In this chapter we have taken a brief look at taxonomies in the cognitive, and psychomotor domains, with a relatively intense look at the characteristics of the affective domain, as well as possible means of changing a student's behavior in these domains.

The bases for management techniques, commonly used in the classroom for changing students levels in the affective domain were presented.

The affective taxonomy the bases for management techniques of reward and punishment were combined to answer the basic question posed in this study, namely: Using punishment or reward, or a combination of these in various management techniques, what kinds of change along the continuum of the Taxonomy of Educational Objectives: Affective Domain, can we effect in the behavior of students?

CHAPTER 2
REVIEW OF RELATED LITERATURE

INTRODUCTION

David R. Krathwohl and his associates, in presenting their "Taxonomy of Educational Objectives Handbook II: Affective Domain", state that it is their hope the Taxonomy will provide better communication between those who would find use for it, such as teachers, psychologists, research workers and behavioral scientists. (Krathwohl 1965 p.23) Their belief is that by defining more clearly the objectives in the affective domain they will reveal how general and ineffective the statement of instructional objectives has largely been thus far. It is their desire to assist teachers in the techniques of appraising growth in the affective domain as well as stimulating the development of better methods of evaluating affective objectives.

Before the affective Taxonomy was produced, and even at present, objectives were generally too broad and vague in their meaning to be optimally useful to teachers. However, arguments have also been presented against the use of behavioral objectives attempting to show that objectives are little used by teachers. (Jackson 1966 p.25) On the other hand, Popham (1969 p.49) states that although teachers seldom specify instructional aims, they should. He continues to say, "The way teaching really is at the moment just isn't good enough." Previous to that, he has made his position clear by stating, "What we have to do is mount a wide spread campaign

to modify this aspect of teacher behavior." ... (referring to the seldom used technique of specifying instructional objectives). "Instructors must begin to identify their instructional intentions in terms of measurable learner behaviors."

Thus, a major function of the Taxonomy is to aid in the precise statement of objectives. Doing so would enable the author of a statement to communicate clearly to the reader his exact intent and the results the author would expect from such precise statements. Also, exchange of test items among educators could become more realistic than it is at present, since tests could be filed under the levels of classification of the Taxonomy.

Efforts must be made to state instructional objectives more clearly, but at the same time the means to implement these objectives should not be forgotten. The educator has to be fully cognizant of all the implements available ir the profession. Providing direction and guiding the student in his search for information requires the knowledge of how to use these implements. Amongst the most potentially powerful of the instruments available are the techniques of reward and punishment. Although widely used they are often badly mishandled because of the lack of understanding on the part of the educator. Following is a review of some of the more pertinent literature in the field of taxonomies, reward, and punishment.

CHAPTER OVERVIEW

This chapter is divided into two main sections. Taxonomies and their use are overviewed first to help clarify the importance of the Affective taxonomy. In the second section studies related to the management techniques based on reward and punishment will be reviewed, particularly those related to studies in affective measurement. The chapter will conclude with a general summary of the studies, and conclusions to be drawn from their results.

SECTION I: TAXONOMIES

Always educational systems have been plagued with the need for specific aims or objectives, and as we increase our knowledge and broaden our fields of study, it has become evident that there is a wide variety of instructional objectives that could be met in school settings. If these aims were to be individually listed, the tome containing them would become cumbersome and would probably be little used by teachers. Nevertheless, educators must direct their attention and practice toward their own particular aims so that they might more effectively assess whether they have reached their objectives. To this end, Bloom, Krathwohl and associates, and Harrow, have produced taxonomies of educational objectives in the cognitive, affective and psychomotor domains. Others such as Ebel, Gronlund, Magar and Popham, have also directed their attention to work on behavioral objectives. Following is a brief review of some of these works.

Cognitive Taxonomy

The Taxonomy of Educational Objectives: Cognitive Domain is the result of a felt need by educators to communicate and exchange ideas of a theoretical nature, and to further research in curriculum design. Discussion by a group of educators was started in 1948 and the Taxonomy was finally published in its present form in 1956. The Taxonomy has a level of generality which is necessary to save it from fragmentation. However, the terms are defined as precisely as possible, yet remain generally consistent with relevant psychological principles and theories.

In the cognitive taxonomy, there are six main levels in hierarchical fashion, with each subdivided into three subclasses. Thus, higher levels of more complex behavior subsume behaviors at the simpler, lower levels. Following are the major categories:

1.0 Knowledge
2.0 Comprehension
3.0 Application
4.0 Analysis
5.0 Synthesis
6.0 Evaluation

These are all cognitive levels which help teachers more precisely define the sometimes nebulous goals of education, such as being able to "grasp" a concept, "internalize" an idea, or "understand" a rule. There are no value judgments given for the levels so that any "educational group" can use

it. When using the term "educational group", I mean any educator or group, who follows or tends to adhere to one or a combination of the many psychological learning theories, such as Behaviorists, Developmentalists, and so forth. However, it is limited to programmes which specify intended student behaviors. Used in this manner and working up through the developing levels from simple to complex, it could be used to help students form problem-solving strategies.

In review, the taxonomy for the cognitive domain is a logically developed and consistent taxonomy of educational objectives, describing levels of possible objectives from the simple to complex that can be used by any "educational group".

Psychomotor Taxonomy

Anita Harrow's (1972) "A Taxonomy of the Psychomotor Domain" is the most recently published of the three taxonomies of educational objectives. The format of the taxonomy is similar to those of the cognitive and affective domains, while the main difference in production of this taxonomy is that it was compiled and written by one person, as compared with the groups or committees who developed the other two.

All three domains, cognitive, affective and psychomotor are interrelated, so that the taxonomies have a parallelism in their structure. They are all structured in an ascending scale from the simple behavior at the lower levels to the

complex behaviors at the upper levels. In the psychomotor taxonomy the progression is developed from the level of basic reflexive movements at the lower levels to the more complex interpretive movements at the upper levels.

A. Harrow (1972) gives a rationale for the need to understand movement in educational instruction. The relationship with the other two domains is briefly stated as follows:

"To assist educators and curriculum developers to categorize relevant movement phenomenon in order to structure educational goals relevant to the needs of children." Harrow (p.9)

After the rationale for writing the work is given, Harrow describes several theories about movement development. (Smith and Smith, Stone, Scott, Hanston, Barsch, etc.) and operational definitions are laid out, for example the word psychomotor should be understood by the reader to mean: "All observable voluntary human motion ... or observable voluntary actions or action patterns performed by learners and designated by the educator as being an essential portion of the educational goal of his particular curriculum." (Harrow pp.31-32)

Harrow presents a "View of the Standard Model," namely the learner, and gives a brief outline describing various stages of motor development so that the educator will be familiar with the characteristics of a sequence of movement development and where an individual may appear in his

development on the continuum.

Once the basic physical elements describing the movement characteristics of a learner at various levels of development are outlined, the Taxonomy, with its six major levels, is presented in detail. (see Table 1)

The Taxonomy of the Psychomotor Domain presents a systematic categorization of movement experiences consistent with various views of how motor development can occur effectively and efficiently. Examples of theories of physical learning are included. The whole presentation parallels the cognitive and affective taxonomies. Following are the major categories:

1. Reflex Movement
2. Basic - Fundamental Movements
3. Perceptual Abilities
4. Physical Abilities
5. Skilled Movement
6. Non-Discursive Movement

Affective Taxonomy

The Affective domain encompasses the area of feeling which is virtually mandatory as part of human life. This is the domain of primary importance to the present study.

Krathwohl and his associates began work on the affective taxonomy while they were completing the cognitive taxonomy. They saw the need for such a taxonomy because of the apparent correlation between the two domains, and the difficulty they encountered in forming objectives in the cognitive domain

Table 1

Outline of Psychomotor Taxonomy

1. Reflex Movement
    1.1 Segmental Reflexes
    1.2 Intersegmental Reflexes
    1.3 Suprasegmental Reflexes
2. Basic - Fundamental Movements
    2.1 Locomotor Movements
    2.2 Non-locomotor Movement
    2.3 Manipulative Movement
3. Perceptual Abilities
    3.1 Kinesthetic Discrimination
    3.2 Visual Discrimination
    3.3 Auditory Discrimination
    3.4 Tactile Discrimination
    3.5 Coordinated Abilities
4. Physical Abilities
    4.1 Endurance
    4.2 Strength
    4.3 Flexibility
    4.4 Agility
5. Skilled Movement
    5.1 Simple Adaptive Skill
    5.2 Compound Adaptive Skill
    5.3 Complex Adaptive Skill
6. Non-Discussive Communication
    6.1 Expressive Movement
    6.2 Interpretive Movement

without preparing similar objectives of an affective nature. For that reason, the Taxonomy of Educational Objectives: Handbook II: Affective Domain is similar in format to Handbook I: Cognitive Domain. (Krathwohl 1965 Preface vii)

There are two parts to the Affective Handbook. The first part, with six chapters, presents background information and rationalization for the work. Part II contains a detailed description of the taxonomy with illustrations of objectives and sample test items.

Although, in the preface, Krathwohl and his associates say they are "much less satisfied with the result" of the affective taxonomy than they were with the cognitive taxonomy, Handbook II may prove, eventually, to be as effective and perhaps even of more importance than the other two, probably because of the affective domain's encompassing nature and its correlation with both the cognitive and psychomotor taxonomies. (see Figure 2)

Correlation of Affect and Cognition

Bruner (1960) suggests that we should try to increase the inherent interest of the materials taught, thus giving the student a sense of discovery, translating what we say into thought forms appropriate to the child and so on. What this amounts to in simple terms, is developing in the child an interest in what he is learning and with it an appropriate set of attitudes and values about intellectual activities in general. (Bruner p.73) What, in effect, Bruner is saying, is that through our attention to affective objectives, we may also attain cognitive development.

The two domains, although apparently different, have many similarities and are closely parallel. It is a common observation that a student who masters the cognition of a subject, will probably have "feelings" toward the subject that become more positive, often leading to further pursuit and mastery of the topic. Thus, the affective, cognitive, and psychomotor behaviors can develop in an interlocking, stepwise fashion. A gain in one domain would appear to lead to a gain in another. As Krathwohl points out, although the general school system rewards gains on the cognitive "can do" system, instructors strive for the affective or "does do" effect. (Krathwohl p.60)

Difficulty of Assessment in Affective Domain

"Right" behavior when assessed in the affective domain can be difficult to spot by those making the assessment even when they feel they have defined it precisely and behaviorly. This is not the "can do" but "does do" behavior. A major obstacle is probably the fact that the assessor is often an authority figure, and the student will frequently not display the behavior typical of the desired objective, perhaps because he knows he is being observed, and previous cultural conditioning teaches him to "hide" his feelings. Assessors then have to attempt to catch students with their "guard down" in situations which appear to be non-assessive, such as when the pupils are at play. (Krathwohl p.61)

Apparent Slow Attainment of Affective Objectives

In universities and teacher training establishments, instructors stress the use of cognitive objectives and the use

of Bloom's Taxonomy (1956). This practice is also gaining wider use among classroom teachers of the public schools. They can see the value of the objectives as a tool in assessing changes in cognitive behavior. Some educators feel that cognitive behavior can change reasonably quickly, whereas affective behavior change apparently is more of long-term. Krathwohl suggests, however, that the reverse may be the case, but more evidence will be required to verify it. Behavior change at the lower levels of the Affective taxonomy, such as Receiving or Attending can show almost immediate change. For example, one can note immediately the difference between a child ignoring a book and when he picks it up and looks at it. Responding is also subject to rapid development and assessment. However, Valuing levels may show slower development. Organization and Characterization may be subject to even more complicated development and assessment, because of their complex and abstract functioning and all inclusive nature.

Part of the present study has been designed to try to demonstrate that behavior in the Affective Domain, at least up to the "Valuing" level, can be attained in a relatively short space of time, namely, during a brief experimental session.

Universality of the Affective Taxonomy

When Krathwohl and his associates attempted to fit their components of affective guidelines into the various learning theories of personality, they could not find one which encompassed the complete range of feeling, or was able to

sufficiently clarify the meanings. Krathwohl feels that the process of a developing continuum of affective behavior seems best described by the term "internalization". This has a multidimensional meaning, where the individual develops from a primary state of awareness to that of perceiving. The pupil next shows a willingness to attend to phenomena and proceeds to respond to it from a "positive feeling". Later, the individual will conceptualize his behavior and feelings and then will organize these into a structure. At the highest end of the continuum, the individual will encompass the phenomena into his "life outlook". Thus, the continuum progresses from the very simple state of awareness to a complex behavior of "characterized, life style". This might also be viewed as going from concrete behavior to abstract characterization.

The motivational input required to change from one level to the next would appear to proceed from extrinsic at the simple levels to intrinsic at the higher or more complex levels. Hence, the multidimensional aspect of the taxonomy and its universality in use. Note Figure 1, which depicts the developmental levels and the multidimensional aspects of the taxonomy.

Relationship of the Taxonomies

When constructing or defining behavioral objectives it will be noted that the objectives can often be classified under all three domains. More specifically, the cognitive and psychomotor aspects of an objective are not likely to be

Figure 2 - Comparison of Domains

COGNITIVE DOMAIN	
Level	Description of Level
1.0	KNOWLEDGE
1.1	Knowledge of Specifics
1.2	Knowledge of ways and means of dealing with specifics
1.3	Knowledge of Universals and Abstractions in a field
2.0	COMPREHENSION
2.1	Translation
2.2	Interpretation
2.3	Extrapolation
3.0	APPLICATION
4.0	ANALYSIS
4.1	Analysis of Elements
4.2	Analysis of Relationships
4.3	Analysis of Organizational Principles
5.0	SYNTHESIS
5.1	Production of a Unique Communication
5.2	Production of a plan or Proposed set of Operations
5.3	Derivation of a set of Abstract Relations
6.0	EVALUATION
6.1	Judgments in terms of Internal Evidence
6.2	Judgments in terms of External Criteria

PSYCHOMOTOR DOMAIN	
Level	Description of Level
1.0	REFLEX MOVEMENT
1.1	Segmental Reflexes
1.2	Intersegmental Reflexes
1.3	Suprasegmental Reflexes
2.0	BASIC-FUNDAMENTAL MOVEMENT
2.1	Locomotor Movement
2.2	Non-Locomotor Movement
2.3	Manipulative Movement
3.0	PERCEPTUAL ABILITIES
3.1	Kinesthetic Discrimination
3.2	Visual Discrimination
3.3	Auditory Discrimination
3.4	Tactile Discrimination
3.5	Co-ordinated Abilities
4.0	PHYSICAL ABILITIES
4.1	Endurance
4.2	Strength
4.3	Flexibility
4.4	Agility
5.0	SKILLED MOVEMENT
5.1	Simple Adaptive Skill
5.2	Compound Adaptive Skill
5.3	Complex Adaptive Skill
6.0	NON-DISCURSIVE COMMUNICATION
6.1	Expressive Movement
6.2	Interpretive Movement

attained unless the affective components of attending and responding also occur. For example, the objective:

"Given suitable drawing materials, the student will be able to draw a diagram of the circulatory system without copying from charts or pictures," has components in all three domains. To be able to draw is a manipulative skill, but memory is required in this instance, therefore, this objective could be placed under the psychomotor domain in the sub-category of 3.23: Visual Memory. If however, the focus of the objective is cognitive, then the item might be leveled at 1.00: Knowledge.

The affective level, at its lowest point would be that of 2.0: Responding. However, it could also be classed at the 3.00: Valuing level, since the student might well appreciate the worth of the activity involved. When measuring for the objective at the end of the activity, the teacher could well assess both the proficiency and the affect with which the activity was performed. A measure of affect would be reflected in the manner in which the student participated.

Figure 2 attempts to show how the three domains are related, with affective components implicit in almost every behavioral objective in either the cognitive and/or psychomotor domains.

Section I Summary

In the preceding section a brief review of three of the most commonly used taxonomies was presented. These were:

Taxonomy of Educational Objectives Handbook I: Cognitive Domain, Bloom (1956), Taxonomy of Educational Objectives, Handbook II: Affective Domain, Krathwohl (1965), and A Taxonomy of the Psychomotor Domain, Harrow (1972). The cognitive and affective taxonomies are companion handbooks, while the psychomotor taxonomy, although written by one person, is similar in format.

Educational objectives may be defined in one domain or they may be classified in all three. However, the affective domain is implicit in all objectives. By its nature, it overlays the other two, as is illustrated in Figure .

It must be remembered, however, that the taxonomies constitute only a device to help indicate levels on a continuum of human behavior. Writing objectives requires the use of at least two of the taxonomies, knowledge of how to state an objective, and the decision at which level of the taxonomies the objective should most appropriately be placed.

INTRODUCTION TO SECTION II

A considerable amount of the research literature pertaining to changing cognitive and affective behavior deals with the contingencies of reward and punishment. Although there are many other techniques used in teaching, reward and punishment are most commonly used, and frequently abused and misunderstood. Hence, the need for their continued study relative to their use in teaching.

STUDIES ON REWARD

Rewards have been employed in teaching probably since the first teacher taught the first pupil. However, actual experimental study of reward (positive reinforcement) stems from the work of Pavlov, and has been continued by such prominent names as Watson, Thorndike, Guthrie, Hull and Miller. Whenever positive reinforcement is mentioned in educational circles, the name of B. F. Skinner comes to the fore, particularly in connection with teaching. Notable amongst Skinner's (1968) more recent work related to education is The Technology of Teaching which deals basically with the application of rules of positive reinforcement to classroom instruction. From Skinner's early work and the work of others we have learned a great deal about the specific conditions under which rewards strengthen both cognitive and affective behaviors of learners in school contexts, e.g. timing of rewards, types of rewards, amounts, and so forth.

More recently, diversity of rewards for strengthening cognitive school-type behavior have been studied by people such as Madsen and Forsyth (1973). Their objectives were to find out whether contingent music listening would significantly increase correct responses to mathematical problems compared with other activities and reinforcers, and whether there were significant differences between the reinforcing effects of two types of music listening activities. The Ss were 88 grade six students from a "pod"

in an open Middle School. Four groups were studied, one group was allowed to listen to popular music and dance to it as a reward, a second group listened through earphones to popular music, a third group was a "math games" control group, while a fourth group was termed a "contact" control group. An individualized math programme was used as a behavior measurement device and instructional aid. Significant differences ($F = 6.52$, $P < .01$) were found between the music listening, and the control groups. No significant differences were found between the two music groups, and between the two control groups. Since there were increases in the cognitive behavior, (e.g. more section tests were completed and passed) there were also corresponding increases in affective behavior. Such behavior would have at least been classed at the Responding level of Krathwohl's Taxonomy (1965), and possibly even that of Valuing. This study would appear to indicate that with the use of a carefully selected reinforcing contingency, in this case, music listening, both cognitive and affective behavior can be modified in a positive direction.

Diversity of reward systems and their function can be noted by comparing the music listening reinforcement employed by Madsen and Forsythe, with that of the Tangible Reward System used by W. B. McMillan (1973). He gave monetary rewards to sixth grade ghetto students from a low socioeconomic group in East St. Louis. These students were placed on the Sullivan Associates Programmed Mathematics

Series I and II (1968), and they were rewarded with a monetary reward of forty cents on completion of every fourth unit mastery test. They were, therefore, rewarded by immediate feedback on the programmed course as well as progressing at their own speed, over and above the monetary rewards.

When post tested on the arithmetic portion of the California Achievement Test (C.A.T.), their mean grade placement had been raised by half a year from 1.3 years behind normal, to 0.8 years behind grade placement. Response rate on the programmed course was also much better than anticipated, with an average of 8.27 books completed per S. Affective gains during the experiment were also considerable. School attendance was increased, and comments on a questionnaire about why the students worked so fast, were of the type that said, it made them "feel proud", when they did their work well. Statements of that type might be leveled on Krathwohl's Taxonomy at the 3.1: Valuing level. Such a study would indicate that positive reinforcement on a fixed schedule can increase, not only the cognitive behaviors, but also affective behavior, from the Attending levels, through the Responding levels, to at least that of Valuing, and possibly higher in some cases.

Token systems when followed by suitable "back-up" rewards can be used effectively as shown for example by A. J. Heitzman (1974). He studied the effects of a token reinforcement system on the reading behavior of black

migrant primary school pupils. The Ss in the study were 70 black and 24 white primary school pupils in a six week summer school programme. The Wide Range Achievement Test (W.R.A.T.) was administered at the outset, and reading grade levels were selected from the Gates-MacGinitie Reading Test. Reading gains were computed from differences between pretest and postest. The tokens, (small 1.0 cm circular steel discs) were distributed when a S emitted any reading behavior response. The tokens could be traded for back-up reinforcers of candy and toys, or other sundries attractive to children. Skill behaviors were reinforced as manifest by gains in skill behaviors. Greater gains in reading test scores were noted amongst black children than white children, indicating that the black children of lower socioeconomic background in this study, responded better to short term token systems than did white children of similar background. From this study it might be implied that reward systems can be effective under specific conditions, and will reveal gains in both cognitive and affective behavior.

A counterbalance to these studies, using extrinsic rewards is seen in the work done by Greene and Lepper (1974). They showed that rewarding play activities may decrease, the future responding, to the play stimulus. The authors show how extrinsic motivation may destroy intrinsic motivation. They used preschool children. Coloured felt-tipped markers were used as the stimulus to which the children should

respond. After colouring with felt-tipped markers, some of the children were rewarded with certificates and praise. On subsequent observations it was noted that the rewarded children showed significantly less interest in the markers than did control groups. This experiment was duplicated using different age groups, different stimuli and different rewards, with much the same results. The authors stress that rewards should be used only after careful consideration of both the immediate and long-range goals. However, they point out that:

> Clearly, if a child begins with no intrinsic interest in an activity, there will be no intrinsic motivation to lose. Similarly, if a child does not possess the basic skills to discover the intrinsic satisfactions of complex activities such as reading, the use of extrinsic rewards may be required to equip him with these skills. Finally, if rewards provide him with new information about his ability at a particular task, this may bolster his feeling of competence, and his desire to engage in that task for its own sake. (p.54 Psychology Today Vol. 8. #4)

The knowledge of competence is of key interest in the use of reward. A great deal depends on how the S views himself and his abilities, namely, the Ss affective viewpoint of his cognitive abilities. This is the basic premise of Kifer's

(1975) study. Kifer in his opening discussion on the relationship between affect and achievement, notes the different methods of perceiving the relationship. He points out that his approach is based on the premise that "it is the student's history of consistent success or failure which is most directly linked to affective traits" (Kifer 1975, p.193). Kifer looks at effects of patterns of achievement in a school setting over a period of years. A longitudinal study would have taken about 8 years and would have required thousands of tests. In order to simulate a longitudinal study, samples from second, fourth, sixth and eighth grades were used. The selection of Ss was achievement based, by their marks on academic courses. Selections were made from the top and bottom 20% of each grade. Students with a wide range of ability from grade 5 and 7 were studied to establish estimates of variables, and for calibration of test items. Of note in his findings is the fact that home concern correlates with personality characteristics, higher in the fifth grade than in the seventh. Also, there is a higher correlation between personality characteristics and achievement at the seventh grade than at the fifth, which provides evidence that accumulated patterns of success and failure are related to students' personality characteristics. Personality dimensions are concomitants of histories of successful or unsuccessful academic achievement and the relationship becomes stronger and more powerful as the conditions become prolonged. These relationships are

affected by the kind of reward and concern for achievement which is provided at home. Even with achievement in school and concern in the home, the crucial point seems to be the time spent in both home and school in helping the student in academic achievement. Of importance to the present study is simply that affect can be changed by achievement in an academic (cognitive) area.

From these five studies on positive reinforcement of various types of notable contrast is the variety of rewards that were used. When attempting to change behavior, positive reinforcers must be of value to the subject to be effective. All of these studies point out that cognitive and affective behaviors are correlated, perhaps in a causal sense, so that an increase in one domain may lead to an increase in the other.

STUDIES ON PUNISHMENT

What of punishment as a part of the instructional process? Following is a selection from research and literature which looks at punishment as a part of the process in teaching for behavior change in desired directions.

Although there is an increasing number of studies on punishment, the public and educators still tend to veer away from the topic. Early studies on punishment, e.g. Estes (1944), Skinner (1938), and Thorndike (1932), tended to indicate that the effects of punishment were not too

significant, and did not last. Others, such as Maier (1949) and Masserman (1943) helped create the myth that punishment would create traumatic after-effects. In more recent years, many notable studies and papers have been written which shed light on the potentially positive aspects of punishment, and confute the original fears. Amongst the more notable of the comprehensive studies are those by Church (1963), Solomon (1964) and Azrin and Holz (1966). Also, punishment in the classroom, showing how punishment when handled with an understanding of its rules, can be of much benefit, is discussed by MacMillan, Forness and Trumbull (1973). They list three of the positive aspects of punishment, previously noted by Mayer, Sulzer and Cody (1968).

1. When used with maximal effectiveness, punishment has the advantage of immediately terminating a behavior and reducing it for a long time.
2. Punishment of specific behaviors is informative to the student, telling him what he has done incorrectly.
3. The negative consequences of misbehavior can be instructive to classmates, who are less likely to model behavior that is punished.

(MacMillan, Forness & Trumbull 1973, p.89)

The second point above, is of particular importance here because of the discrimination which punishment allows.

Solomon (1964) had noted that earlier studies on rats revealed the discriminative value of punishment, originally pointed to by E. Tolman.

> For example, the widely cited experiments of Warden and Aylesworth (1927) showed that discrimination learning in the rat was more rapid and more stable when incorrect responses were punished with shock than when reward alone for the correct response was used. (p.248)

This discrimination effect is enhanced still further when an alternative behavior is offered.

> Walters and Parke (1967) pointed out that punishment is particularly effective if at the same time the socializing agents (e.g. teachers) provide information concerning alternative pro-social behavior.
>
> (MacMillan, Forness & Trumbull 1973 p.92)

The following three studies are representative of the use of two forms of punishment. The studies occur in the classroom and in "industry". They show how punishment can provide information for discrimination and a result in assumed associated change in affect.

Lovitt and Smith (1974) used withdrawal of positive reinforcement (defined as a low level of punishment) to change behavior. This study was conducted as a single case study to show the effect of withdrawal of positive reinforcement upon subtraction performance. The subject was

an eleven year old girl who performed erratically on subtraction problems. Three classes of subtraction problems were arranged, with class one being simplest, and class three the most difficult. When errors in subtraction were contingent upon time loss at recess, the correct subtraction behavior showed dramatic improvement as the punishment was imposed upon each problem class. Even after the contingency was removed from the first two classes, the girl maintained answers that were 100 per cent on all three classes.

In the second paper, Luthans and Kreitner (1973) first review the various effects of punishment and note how these can be used to advantage in the industrial setting. Two examples are cited to show how management and mismanagement of punishment in behavior modification may be applied. Loss of wages due to tardy work habits is used to show how a stimulus when too far removed from the undesirable response may have an effect contrary to that which is intended. As a rule of the effective use of punishment, the punishing stimulus should immediately follow the undesirable response, and an alternative suitable behavior should be available. The main points of behavior modification which are stressed in this discussion are the need for closely relating the punishment with the unsuitable behavior and also presenting a suitable alternative behavior.

The purpose of the study by Brackbill and O'Hara (1958) was to compare the relative effectiveness of reward and punishment for discrimination learning in children. The

hypothesis was that children would learn a discrimination task faster under a combination of reward and punishment than a reward only. They were, in effect, testing the power of punishment as an aid in discrimination. However, because of possible complaints about a punishment only group, such a group was not included.

The Ss were 73 male Kindergarten children with a mean age of 70.3 months. They were asked to locate a candy, hidden under one of three boxes. In reality, there was only one box, (the same one in each trial) which had no candy in it. Trials to reach criterion (not selecting the empty box in ten consecutive trials) were recorded. It was found that the Reward-Punishment (R-P) group learned the discrimination task significantly faster than the Reward only (R) group. Notable about the experiment is the fact that 5 of the Ss in this group took the maximum trials. These Ss were tested in a G.S.R. for nervous reaction and were found to be in a significant state of high reactivity. Their mean intelligence measure, as measured by the WISC, was not significantly different from other Ss in the R-P group. Results were discussed in terms of the level of motivation. The general conclusion drawn was that:

> .... the effect of a reward punishment procedure is attributable to increased level of motivation or that .... learning is accelerated more under a high drive condition than under a low drive condition - or that punishment acts as an additional

source of drive.

Since 5 children did not learn in the R-P condition, the explanation presented was that the "high drive" state will increase the strength of the strongest response, rather than that of the weakest response. In this case, the weak response was irrelevant behavior. A conclusion such as this might suggest that punishment without feedback would lead to irrational behavior which might include avoidance techniques. Of course, where punishment and reward are used in combination with a discriminative task, the results should be as cited by Brackbill and O'Hara (1958) and Warden and Aylesworth (1927).

SUMMARY AND DISCUSSION

The studies on the effects of reward (positive reinforcement) cited here have several points of interest to the present investigation. These are:

1. Rewarding a behavior will tend to strengthen the behavior.
2. Rewarding cognitive responses, and thereby strengthening those responses will often cause an attendant rise in the subject's affective behavior.
3. It would appear that the affective level of a subject (as measured by Krathwohl's Taxonomy) can be caused to increase by the use of reward, beyond the Receiving level, the Responding level, and probably higher.

4. Reward can take many forms; but reward must be viewed as such by the individual receiving it.
5. Rewards can be abused or misused. Care must be exercised in the use of reward (Note Greene and Lepper, 1974).

Punishment as a teaching technique also holds interest for this study, with some points similar in interest to those of reward:

1. Punishment of specific behaviors can be informative to the student, telling him what he has done incorrectly.
   (Mayer, Sulzer and Cody 1968)
2. Punishment, paired with reward, affords the subject a basis for discrimination of his responses. This would tend to affect cognition, and, therefore, should cause a change in the subject's affective behavior.
3. Punishment can have long-lasting effects. This should work to advantage where punishment is used in discrimination tasks.
4. Punishment, without corrective feedback, could lead to irrational or unproductive behavior and to avoidance.

All these points, both for reward and punishment indicate potential change in affective behavior, possibly in both positive and negative directions. Kifer (1975) also mentions

this same point when he notes that it is the students history of success or failure which is most directly linked to affective traits.

Although many of the studies on reward verify that affective behavior can be changed by the use of reward (positive reinforcement), little if anything in the literature pertains to changing affect beyond the first level of Receiving by the use of punishment.

Brackbill and O'Hara (1958) show that reward and punishment can be more effective than reward alone in learning discrimination tasks. Viel (1975) also shows the same type of results. He used three different contingencies of R-O, R-P, and P-O, combined with directed attention in the use of objectives to show increases in cognitive awareness.

From these points it would seem reasonable to suspect that through the use of reward and punishment in various combinations, a Ss affective level could be changed in a positive direction, using Krathwohl's Taxonomy as the scale on which to assess and judge the change. It would also appear that when punishment without any feedback is used in a discrimination task, that the S would display the irrational behavior noted by Brackbill and O'Hara (1958). Thus it would be unlikely that the effect would be changed beyond the first level of Krathwohl's Taxonomy.

What of the measurement of affect? From the earlier discussion of Krathwohl's Taxonomy it would appear logical to employ the levels of his taxonomy as the basis for measurement.

However, even though it appears logical, there are no studies which have, in fact, used the Affective Taxonomy for that purpose. It is, therefore, the proposed intention of this study to refer to the levels of Krathwohl's Taxonomy when talking about changes in measured levels of affective behavior.

CHAPTER 3
METHOD

The purpose of this study was to determine whether a subject's affective behavior can be changed, as reflected by the various levels of The Taxonomy of Affective Behavior (Krathwohl 1965). Four different contingencies of various combinations of reward, punishment and feedback were used so that the experimenter might determine their effectiveness in changing affective behavior.

This chapter describes the experimental details and design used in the investigation. Details are presented under the following major headings: Design, Hypothesis, Procedure, The Experimental Setting, The Sequence of Events, Assumptions and Limitations, and Pilot Study.

DESIGN

The design used four treatment conditions in a one by four factorial design. Each group read a lesson and was given the same objectives. The treatment conditions were:

1. Reward Only (R-O)
2. Reward and Punishment (R-P)
3. Punishment Only (P-O)
4. Punishment, All Responses (P-AR)

A schematic form of the design follows:

Feedback Contingencies			No Feedback Contingency
R-O	R-P	P-O	P-AR

Subjects in each condition read a page of directions describing the particular treatment condition, followed by the objective for the lesson, then a three page lesson on the arbitrary concept SWAIT.

Subjects in the (R-O) condition received a token reward (i.e. a light) for each correct response, and no reward (i.e. no light) for each incorrect response. Each light represented a point either gained or lost. At the end of the lesson E awarded the S a selection of candy or gum, based on the number of correct responses.

Subjects in the (R-P) condition received a token reward (i.e. a light) for each correct response. Each incorrect response was "punished" by the loss of a token reward (i.e. a light was extinguished). Each light represented a point. At the end of the lesson E awarded the S a selection of candy or gum, based on the number of correct responses.

Subjects in the (P-O) condition started the lesson with 40 token points (i.e. 40 lights). After each incorrect response, the S was "punished" by having one token removed (i.e. one light extinguished). No light was extinguished after a Ss correct response. Each light stood for one point. At the end of the lesson E awarded the S a selection of candy and gum, based on the number of correct responses.

Subjects in the (P-AR) condition started the lesson with 40 points (i.e. 40 lights). They were informed that for each incorrect response they would lose a token point (i.e. one light would be extinguished) and that for each

correct response no light would be extinguished. However, each response, regardless of correctness, that the S made was "punished", (i.e. a light was extinguished), resulting in the loss of all 40 lights. At the end of the session, after the S had been measured on the affective scale, E debriefed the S and awarded the S a selection of candy or gum commensurate with awards made to his peers.

The P-AR condition was created to replicate, in an experimental setting, a situation that often occurs in school. Sometimes a pupil is given an assignment which he does not understand. However, he attempts it anyway and returns it to the teacher. The teacher might return it with no comment other than "It's wrong, do it again." Hence, the pupil is punished but receives no useful informational feedback. The P-AR condition is an attempt to obtain a measure of the affect, according to Krathwohl, which is created in such a situation.

The Ss were randomly assigned to each of the four treatment conditions.

Under these specific conditions the Ss attempted to learn the three-attribute conjunctive concept SWAIT. They were given a card-sorting task to learn and then were measured on their knowledge of the concept. Following this, their affect (i.e. feeling) toward the task was assessed by six different measurements based on the first three major levels of the Taxonomy of Affective Behavior (Krathwohl 1965). These six measures, plus the forty trials on the card-sorting

task, were employed as dependent variables, listed below in order according to the heirarchy of the Taxonomy.

Item No.	Level No.	Brief Affective Description
1	(1.2)	Willingness to Receive
2	(1.3)	Controlled or Selected Attention
3	(2.2)	Willingness to Respond
4	(2.3)	Satisfaction in Response
5	(3.2)	Preference of a Value
6	(3.3)	Commitment or Conviction
7	Card-Sorting - SWAIT Concept	

Performance on five of these dependent variables for the Ss in the four treatment conditions was analyzed by one way ANOVAs. These were items 1, 2, 3, 4, and 7. Items 5 and 6 were analyzed by using the Test for Significance of a Proportion. (Bruning 1968 pp.197-8)

In order to validate the reliability of the levels assigned to the items, the descriptions of the items were presented separately for individual assessment to a group of three authorities on the leveling of affective behavioral objectives. Details of this will be given later in the chapter on results.

During the sessions, twenty-two tape recordings were made of various lessons. Two minute sections of twelve randomly selected sessions were randomly arranged on one tape. This tape included selections from all four conditions in both upper and lower S.E.S. schools. Three teachers were asked to listen to the tape recording and evaluate the

quality of Es interaction with the various Ss. Specifically they were asked to note whether, in their opinion, (1) the quality of Es voice was supportive and not derisive, and (2) whether they could note any difference in quality of interaction between E and the various Ss. Each listener heard the tape separately, and none were informed of the nature of the experimental design.

HYPOTHESIS

The study employed four contingencies of: Reward-only (R-O), Reward and Punishment (R-P), Punishment-only (P-O), and Punishment for All Responses (P-AR), and six tests for affective behavior.

Criterion Measure	Level	Affective Description
1	(1.2)	Willingness to Receive
2	(1.3)	Controlled or Selected Attention
3	(2.2)	Willingness to Respond
4	(2.3)	Satisfaction in Response
5	(3.2)	Preference of a Value
6	(3.3)	Commitment or Conviction

It was hypothesized that: the responses on criterion measures 3, 4, 5, and 6 will be significantly more positive for Ss in the R-O, R-P and P-O conditions than for Ss in the P-AR condition.

SAMPLE AND POPULATION

A total of 42 children, boys and girls, who ranged in age from 9 years, 3 months to 11 years, 2 months, with a mean

age of 9 years, 5 months, participated in the study. The Ss came from two generally different S.E.S. levels of schools within the Greater Victoria School District #61, Victoria, B. C. Canada, with equal numbers coming from each type. The schools were designated as, 1: lower socioeconomic schools, and 2: middle-upper-middle socioeconomic schools. All children were of average or better reading ability. An average reader was defined as one who read orally a 100 word passage, rated at a grade 4 level of reading difficulty, without making more than 5 errors. (Details of this procedure are given below in the section Sequence of Events.)

The sample was assembled as follows. Six schools in the Greater Victoria School District #61 were selected; three from a lower socioeconomic class and three from a middle to upper-middle socioeconomic class. The principals in these schools were contacted and they, in consultation with the participating grade 4 teachers, furnished a list of ten names of children whom they knew were average or better in reading ability. In this way ten children from each school were identified as potential subjects for the study.

A letter of parental permission was deemed necessary. Such a letter was prepared and sent home with the prospective subjects. (See Figure 5, page 93 Appendix A)

From the lists, the children were randomly assigned to the four treatment conditions. Only seven children from each school finally participated in the study; this was the maximum number that E could work with in any one day, due to

time limitations. Thus five children were assigned to each of the conditions (P-O), (R-P) and (P-AR), with six in the (R-O) condition in both types of schools, resulting in a total of 42 children sampled.

Prior to beginning the experimental sessions, each S was informally screened by E to insure that the S possessed at least average ability. All the children were able to pass the screening check.

PROCEDURE

The following section describes (1) the task, and (2) the materials and apparatus used.

The Task

Each S was required to learn a three-attribute conjunctive concept called a SWAIT (as in gate). This arbitrary name was given to a particular design consisting of combinations of circles, squares, triangles, and diamonds. The concept was defined by three rules:

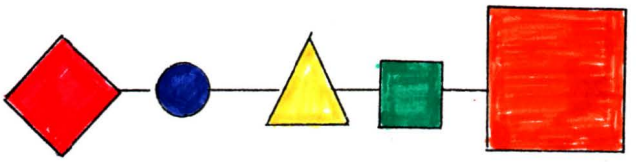
1. A SWAIT must have at least one triangle in the design, and,
2. A SWAIT must have at least one blue figure in the design, and,
3. A SWAIT must have one figure in the design that is larger than all the other figures.

An example of a SWAIT is shown in Figure 3.

Each subject learned this concept within the context of lesson. That is, he was asked to read three pages of written material that explained the attributes and gave

Figure 3

A SWAIT



examples of a SWAIT. That done, he was then asked to perform the main task sorting two decks of ten cards, twice, for a total of 40 selections. It was during the card sorting task that the four various experimental manipulations of reward, punishment and feedback took place.

This task emerged from the following behavioral objective:

> Given a deck of 10 cards, each bearing a distinctive design, the learner must be able to distinquish those designs that are SWAITS from those designs that are not SWAITS.

This objective was cast in simpler language so as to be comprehensible at a grade 4 reading level. (See Figure 7, page 97 Appendix A)

Following the card sorting, the S was measured for affect, by six separate items, one representing each of the six sub-levels of three major levels of Krathwohl's Taxonomy being investigated. (See Figures 14, 15, 16, 17, and 18 on pages 107, 108, 109, 110, 111 Appendix A)

Further details are presented in the section Sequence of Events.

Materials and Apparatus

Several kinds of materials were used in this study. For convenience in description, these are considered under separate headings.

The Lesson Booklet Three separate lesson booklets were prepared, one each for the (R-O) and (R-P) conditions, and

the third was used for both the (P-O) and (P-AR) groups. All the booklets contained six pages. Each booklet was bound in an 8½" X 11" yellow plastic folder.

Page one of each booklet contained a general introduction to the lesson (same for all conditions), together with instructions regarding the particular type of feedback to be used, i.e., whether Reward-Only, Punishment-Only or Reward-Punishment. (See Figures 6a, 6b, and 6c on pages 94, 95, and 96 Appendix A)

Page two of each booklet contained the behavioral objective for the lesson to follow.

The next page in each booklet consisted of a blank yellow sheet of paper. The purpose of this page was to separate preceding text from the lesson itself.

The remaining three pages of each booklet constituted the actual lesson. These pages were identical across all conditions. Entitled "What is a Swait?", the lesson stated the defining rules and gave numerous examples of a SWAIT. (See Figure 8, pages 98, 99, and 100 Appendix A)

These materials and the concept of a SWAIT, were originally created by Paul Viel for his doctoral Dissertation, Behavioral Objectives and Type of Feedback in Concept Learning (1975). On that occasion he had used the Fry formula (Fry 1972) to estimate the level of reading difficulty of the booklets. He determined that the lesson booklet was at a 4th grade level of reading difficulty.

The Learning Decks (L-D) Two decks of 10 cards ($L\text{-}D_A$

and L-D_B) were used. (These were the same cards prepared by Viel (1975)) Each card was made of white cardboard and measured 3" X 5" X 1/16". Each card displayed a single design consisting of various combinations of a circle, square, triangle and diamond. A heavy black line was drawn beneath each design to orient the card for viewing. When held properly, an identification code appeared in the upper right and lower left corners of each card. A typical card is depicted in Figure 4 (Page 56) following.

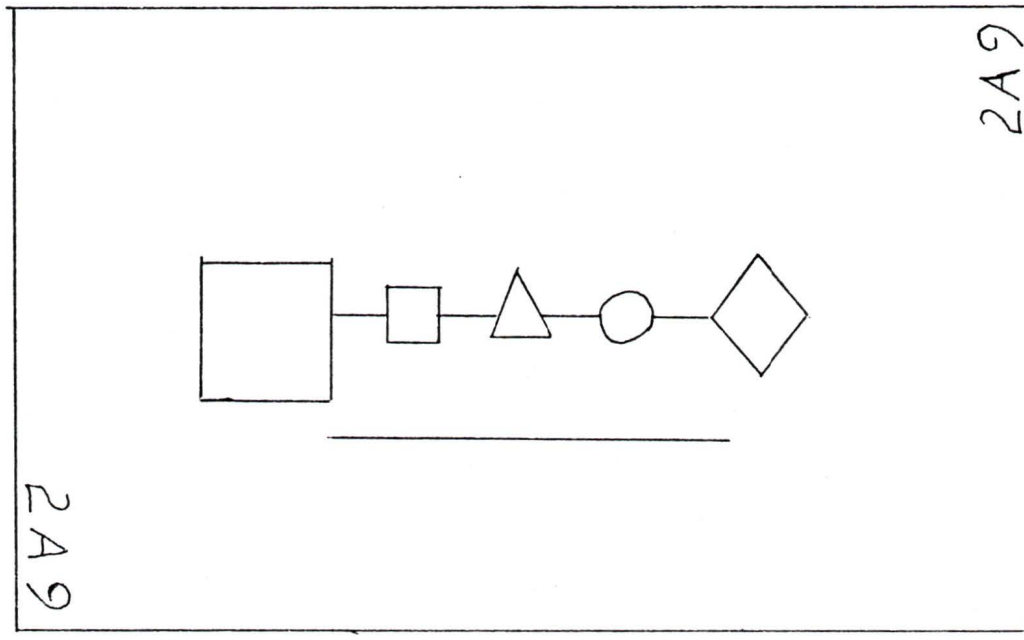
The first digit in the code specified the card's nominal position in the deck. The second digit identified the deck (either A or B) to which the card belonged. The third digit indicated whether the design was a SWAIT or not a SWAIT, i.e., all SWAITS carried odd numbers while all non-SWAITS carried even numbers.

Each deck contained four examples of the concept and six non-examples of the concept. (See Figures 9a and 9b, pages 101 & 102, Appendix A) The six non-examples were designs in which one, and only one, of the SWAIT attributes was omitted. Two cards displayed no triangles in the design, two cards had no figures that were blue, and two cards had no figure that was larger than other figures in the design. Those designs in each deck that were SWAITS displayed the necessary attributes singly. That is, there was no redundancy in cues, e.g., no blue triangles, no triangle larger than the other figures, and no large blue figures.

Response Apparatus The same response apparatus

Figure 4

A Typical Learning Deck Card



(Viel, 1975)

constructed by Viel (1975) was used in this study. (See Figure 10 page 103 Appendix A). Basically it consisted of a black plywood board measuring 2½ feet long by 2 feet high. The board sat on a table between S and E such that the two could not see one another. The S was further isolated from E by two side panels that swung out to 45 degrees.

From the Ss side, the panel displayed two horizontal response slots measuring 3 1/2" by 1/4". Immediately above the left slot was the label: SWAIT, and above the right slot was the label: NOT A SWAIT. In the lower right hand corner of the panel was a third horizontal slot measuring 3 1/2" by 3/4". Through this slot, E passed the Learning Decks for S to sort.

In the centre of the panel was a framed piece of opaque glass measuring 16" by 11". This glass was marked off in a matrix of 100 squares. Behind this glass was a bank of one hundred 1½ volt penlights, arranged in ten columns and ten rows; each row containing ten lights.

From the Es side the panel displayed the response slots described above. Beneath each slot was a tray (3½" by 5½") into which the cards fell when S inserted them through the slots. Above the slots was a bank of 100 switches to activate the lights. To the left of the light bank was a buzzer. The purpose of the buzzer was to signal S when to insert a card. The entire apparatus was powered by ten 1½ volt flashlight batteries. There was no danger of electrical shock to either S or E.

The apparatus operated in the following way. The S was passed the learning deck of cards to sort. The E sounded the buzzer to indicate he was ready to receive a card. The S inserted a card into one of the response slots. The card dropped into the tray on the Es side. The E recorded whether the response was correct or incorrect, activated a light on the Ss panel, extinguished a light, or took no action. The lights then informed the S as to how many points he had earned or lost, and also, whether individual responses were correct or incorrect. The E sounded the buzzer for the next card. The S proceeded until the 10 cards had been sorted. On the next trial, the sorting began anew with L-D_B. The two learning decks were alternated on each successive trial and each deck was shuffled by the E before it was passed to the S for sorting.

Criterion Tests

Following is a brief description of each of the six criterion tests and materials, designed to measure Ss affect for each of Krathwohl's levels being investigated.

Questionnaire sheets Two separate 8½" X 14" answer sheets were employed to evaluate the Ss affective level. (See Figures 14 and 15, pages 107 and 108 Appendix A) Both questionnaires had an introductory paragraph explaining how they were to be used. The first questionnaire, classified as (1.2) Willingness to Receive contained four questions, with nine-point answer lines below them. Only the question concerning SWAITS was used in evaluation. The other three

questions were employed as fillers. Answers were marked with a range of one point for an answer on the extreme left to nine points for a check mark on the extreme right.

The second questionnaire contained only one question. The format was similar to that of the first sheet. It was used to evaluate responses at the (2.2) Willingness to Respond level as defined in Krathwohl's Taxonomy (1965).

Pictures Four pictures, mounted on white manila tag board 20" X 36", were placed on the four walls of the experimental room. Three of the pictures were selected as being of general interest to children of this age group. The fourth picture displayed four different designs containing circles, triangles, squares and diamonds. One design was a SWAIT (See Figure 16 page 109 Appendix A). This was used as a measure of the Ss affective response at the (1.3) Controlled or Selected Attention level, as defined in Krathwohl's Taxonomy (1965) Four stop watches placed in a 12" X 3" X 3/4" styrofoam holder were used to record the time the S spent in looking at the pictures used to measure the (1.3) Controlled or Selected Attention level. (See Figure 17 page 110 Appendix A).

Polaroid Camera and Swait Design A Polaroid Automatic Land Camera 420 with flash attachment was used to take pictures of the Ss. The Ss were told that if they wished, they could have their picture taken with them displaying a SWAIT card. The card was 15 1/2" X 3 5/8" cardboard. (See Figure 18 page 111 Appendix A) This item was used to evaluate

the Ss affective response at the (3.2) level, Preference of a Value as defined in Krathwohl's Taxonomy (1965).

Letter Box A cardboard shoebox, 13" X ½" X 4½" with the lid sealed with masking tape and a 4½" X ½" slot cut in the top, was placed beside the table so that the Ss might insert slips of paper with their names on them, volunteering for a further SWAIT related task. (Further details are presented in the section Sequence of Events). This item was used as a measure of the affective response at the (3.3) Commitment level as defined by Krathwohl's Taxonomy (1965).

Cardboard Shapes A cardboard shoebox containing an assortment of one to three inch coloured cardboard geometric shapes, of circles, squares, diamonds, and triangles was placed on the table beside the S. These pieces were made available to the S if he wished to construct SWAIT designs during a brief free-time break in the experimental proceedings. (Further details are presented in the section Sequence of Events).

Tape Recorder A Sanyo cassette tape recorder was used to record samples of E - S interactions.

Reinforcers The candy was a small, individually wrapped piece of hard candy, about the size of a marble. The gum was an individually wrapped piece of "Juicy Fruit" stick gum.

Data Collection Form The Ss name, sex, grade, birthday, age, condition assignment, performance, and affective responses were recorded on a single data sheet.

(See Figure 11 page 104 Appendix A).

The Experimental Setting

The experiment was conducted in small, quiet, seldom used rooms of the participating schools. Each room was furnished with a table large enough to accommodate the response apparatus and provide work space to E and S, and two chairs. (A typical arrangement is depicted in Figure page

The Sequence of Events

The S entered the room and was seated before the response apparatus. The E explained briefly that the S was about to read a short lesson, and then E proceeded to collect the relevant descriptive data. E then handed S the appropriate lesson booklet for the condition to which S had been assigned. The S read page one of the booklet aloud.

While S read, E recorded the number of errors committed in the first one hundred words of page one. If more than five errors were committed, i.e., errors of substitution, omission, insertion or mispronunciation (as defined by Gilmore and Gilmore 1968), the S was considered to be reading at a frustration level and was not permitted to continue. The S was thanked for his effort and returned to his classroom. If the S committed five errors or less, he was assumed to possess at least average reading ability and capable of comprehending the text to follow.

After S read page one, E interacted briefly with S to explain how the feedback system worked (approximately 2

minutes). Then S read page two of the booklet aloud.

Following the reading of the second page, E moved behind the response apparatus and the S then read the lesson silently to himself. When S finished the reading, he notified E that he was finished and prepared to start the card sorting. The 10-card deck ($L\text{-}D_A$) was then passed to him for sorting. When the deck had been completed, deck ($L\text{-}D_B$) was passed through. Both decks were again passed to the S for sorting after they had been shuffled. While the cards were being sorted into the SWAIT and NOT SWAIT categories, E kept a record of all responses and administered the appropriate feedback according to which condition the S was in.

Upon completion of the card sorting, the S was asked to check off his responses on the questionnaire sheets (See Figures 14 and 15 on pages 107 and 108 Appendix A). The written description of how to make the response was read aloud by the E to the S to ensure that the S understood the directions. The S was then allowed to make the responses in his own time.

Once the questionnaire sheets had been completed the Ss chair was placed so that the S could view the four pictures which were displayed one on each wall of the room. One of these was the picture depicting a SWAIT (See Figure 16 page 109 Appendix A). The S was informed that he should spend two minutes doing nothing other than looking at the pictures. When the S was told to commence, the E recorded

the time the S spent looking at each picture by noting the eye and head movements of the S, and recording these on four separate stop watches. (This item was used to evaluate the Ss affective response at the (1.3) "Controlled or Selected Attention" level as defined in Krathwohl's Taxonomy (1965).)

When the two minutes had passed, E informed the S of this and then asked the S if he would care to have his picture taken with the Polaroid camera. The S was told that he would be allowed to take the picture home with him at the end of the day. At this juncture the S was given the option of having his picture taken displaying the SWAIT design (See Figure 18 page 111 Appendix A) or have his picture taken without it. (This item was used to evaluate the Ss affective response at the (3.2) "Preference of a Value" level as defined by Krathwohl's Taxonomy (1965).)

Once the picture was taken and while waiting for it to develop, the E told the S that he wished to start a "SWAIT Club" in the school, and invited him to write his name and address on a sheet of paper which he could deposit in the "letter box" if he wished to join the club. (This item was used to evaluate the Ss affective response at the (3.3) "Commitment" level, as defined by Krathwohl's Taxonomy (1965).) So that the S would have as much freedom of choice as possible the E made the excuse that he had to leave the room to go down to the office for a few minutes. This then allowed the S to either place the paper with his

name into the box, or if he was not interested, to do nothing about it.

Upon the Es return to the room he showed the S the developed picture and applied the fixer to it, and placed it in a safe location in the room to dry. The E then informed the S that the E had to complete the paperwork which would take a minute or two, and told the S he could use the SWAIT pieces in the box on the table to make SWAITS, if he so desired. The E then went in behind the response apparatus, and while completing the records he also observed and timed the S in the use he made of the geometric shapes. (This item was used to evaluate the Ss affective response at the (2.3) "Satisfaction in Response" level, as defined in Krathwohl's Taxonomy (1965).)

When two minutes had lapsed, the E moved from behind the response apparatus and debriefed the S. He then told the S how many pieces of candy or gum he had been awarded. The number of candies or gum awarded were calculated on the Point-Piece exchange table. (See Figure 13 page 106 Appendix A). These were then placed in a white paper bag with the Ss name written on it. The S was informed that he would receive the candies and the picture at the end of the day. The E also made the request of the S that he should not say anything about the experiment to his friends until the end of the school day. The S was thanked for his participation in the experiment and returned to the classroom.

ASSUMPTIONS AND LIMITATIONS

Assumption:

1. It was assumed that 40 individual trials on the card-sorting task was the optimum number of trials to allow for discrimination to develop and be measured on the affective evaluation items (Viel, 1975).

Limitations:

1. Since the instructional procedures were unlike those employed in the normal classroom situation, any generalization of the results would first have to be verified by more practical application in a more normal classroom setting.
2. Results may only apply to children in grade 4 who possess at least average reading ability.
3. Because of the limited number of subjects used in the experiment, and the fact that their selection was not completely random, (e.g. parental consent required, selection of possible schools was limited, and reading level requirements), generalization of results beyond

that of the group described should await the verification of an expanded and better controlled study.

4. The low level of punishment (that of not being correct) used in the final assessment procedures, would limit and generalization of results beyond that of the punishment of not being correct. Because punishment of this type is common in the school setting, children can develop varying tolerances through years of such marginal success at school-type tasks. The age group described would, therefore, be the group to which these findings are limited.
5. The criterion tasks may not represent true measures of Krathwohl's levels as described in his Taxonomy.

PILOT STUDY

The concept 'SWAIT' had been invented and tested on a large group of grade four children by Paul J. Viel in his doctoral dissertation, Viel (1975). However, the affective tests used in the present study required pretesting for suitability. The two written questionnaire check-off items (1.2) and (2.2) were tested on a group of 35 grade four students. These items were modified and retested on the same

group. It was noted that the children were able to effectively understand and use the check-off answering procedures on this revised question sheet.

A group of ten grade four children of average or better reading ability from a school different from those used in the main experiment were evaluated, using the measures described in the final experiment. From these results it was decided that:

1. The reading material was appropriate for average readers in grade four.
2. Four, card pack sorting experiences or 40 trials, was a reasonable number for this experiment.
3. The affective items were judged to be of suitable interest, and to provide adequate discrimination for the affect of pupils at the grade four level.
4. The interaction time between E and S was approximately equal in all four conditions, namely that of approximately 40 minutes.

From the outcomes of the pilot study it appeared the procedures were suitable for evaluating the present hypothesis.

CHAPTER 4
RESULTS

INITIAL RESULTS

An Analysis of Variance on all four groups was performed for five of the seven dependant variables, items one, two, three, four and seven. The means and standard deviations are presented in Table 2 pages 125 and 126 Appendix C.

No significant differences were found between groups on any of the dependant variables. (See Table 3, Analysis of Variance, Affective Measures, page 127 Appendix C) An inspection of the raw scores of the remaining two dependant variables, items five and six, show similar lack of significant differences. These are simple dichotomous scores and even a quick inspection of them (See Table 4, Table of Raw Scores, page 128 and 129 Appendix C) will reveal that no statistical data are required to interpret those specific results.

RE-EVALUATION

Once it became evident, from even a cursory glance at the raw scores, that there were no significant differences between the means of the four treatment conditions, a re-evaluation of the raw scores for the seven dependant variables was deemed to be in order. A reasonable basis for re-evaluation, when the raw scores for item seven, the card-sorting (cognitive) task, were reviewed, seemed to be related to the question of whether the experimental

manipulations were actually as punishing for subjects as E had believed they might be. Also it was noted that subjects who had low scores on card-sorting (cognitive task), generally tended to have lower scores on the other six (affective) items. Could it be that lack of success in the card-sorting task was a greater source of punishment than losing a light? This thought led to a re-ordering, from lowest to highest, of the Ss, based on their cognitive performance on item seven, Card-Sorting (See Table 5, Revised Ranking of Raw Scores, pages 130 and 131 Appendix C). The scores were divided into quartiles based on the range of actual scores gained on the card-sorting task. The Ss performance on the six affective items (dependant variables) were then re-assessed, using only the scores in the first or lowest quartile compared with scores in the fourth or highest quartile.

RATIONALE FOR THE CHANGE IN METHOD

There are two fundamental assumptions pertaining to this study, namely: 1) Punishment is involved, and 2) Reward is involved. It was felt that the form of punishment as manipulated in this experiment, did not produce the effects expected. Similarly with the rewards as planned and manipulated. What probably was more punishing or rewarding to the Ss was their relative success with the card-sorting task. Hence, an able student would read the lesson (or assignment) carefully, know he was right, and behave accordingly. Those less sure of themselves were open

to doubt and, of course, lack of success and frustration.

Further discussion of this logic will be held later, in the fifth chapter, under the appropriate heading Discussion.

REVISED RESULTS

The two revised groups of scores, the first (lowest scoring) quartile, those students scoring from 18 to 23 correct on the card-sorting task, and the fourth (highest scoring) quartile, those scoring from 35 to 40 correct on the card-sorting task, for affective items 1 to 4 were submitted to a one way ANOVA. The means and standard deviations for performance on five variables items: one, two, three, four, and seven were computed for both revised groups. The data are presented in Table 6 , "Means and Standard Deviations for High and Low Scoring Groups on Five Dependant Variables," pages 132 and 133 Appendix C).

Items 2 and 3 showed significant differences between the groups ($P < .05$).

Table 7a

Analysis of Variance Item #2 Level (1.3):
"Controlled or Selected Attention" (Krathwohl, 1965)

Source	SS	MS	DF	F	P
Groups	0.27	2713.92	1.	4.49	0.04
Error	0.16	604.78	27.		

Table 7b

Analysis of Variance Item #3 Level (2.2):
"Willingness to Respond" (Krathwohl, 1965)

Source	SS	MS	DF	F	P
Groups	0.17	16.66	1.	7.77	0.01
Error	0.58	2.14	27.		

Items 1 and 4 did not show significant differences ($P > .05$).

Table 8a

Analysis of Variance Item #1 Level (1.2):
"Willingness to Receive" (Krathwohl, 1965)

Source	SS	MS	DF	F	P
Groups	0.88	8.78	1.	3.10	0.09
Error	0.77	2.83	27.		

Table 8b

Analysis of Variance Item #4 Level (2.3):
"Satisfaction in Response" (Krathwohl, 1965)

Source	SS	MS	DF	F	P
Groups	0.41	408.38	1.	2.44	0.13
Error	0.45	167.25	27.		

Items 5 and 6, which were on a dichotomous scale with "yes" or "no" answers, were submitted to a "Test for Significance of Proportion" (Bruning and Kintz 1968). Item #5, Level (3.2) Preference of a Value (Krathwohl 1965),

had a z of 2.45 ($P < .05$). However, Item #6, Level (3.3) Commitment or Conviction (Krathwohl 1965) had a z of only .43 ($P > .05$).

Table 9a

Test for Significance of Proportion Item #5

Level (3.2): "Preference of a Value" (Krathwohl 1965)

Name of Group	n	Affirmative Answers	p	z	P
Low Scoring	10	4	0.4	2.45*	$P < .05$
High Scoring	19	14	0.74		

* Significant at $P < .05$.

Table 9b

Test for Significance of Proportion Item #6:

Level (3.3): "Commitment or Conviction" (Krathwohl 1965)

Name of Group	n	Affirmative Answers	p	z	P
Low Scoring	10	8	0.8	0.43	$P > .05$
High Scoring	19	14	0.74		

Although the hypothesis being tested had to be rejected on the grounds of no significant differences on the first group of measures, the revised results for the two new groups provide some evidence in support of the hypothesis.

There were problems noted during the experiment that may have accounted for some of the experimental error. For example, Variable #1, Level (1.2): "Willingness to Receive" showed differences between the high and low success groups

only at the level of ($P < .09$). However, the lack of significant differences could be attributed in part to the mis-assumption that both punishment and reward should bring about a "Willingness to Receive". This does not imply that the S enjoys the idea of "receiving", indeed, the S could also be made "Willing to Receive" by fear, although that may be an extreme case. Therefore, no significant difference, would be in accord with the idea that both punishment without feedback, and reward, can be employed to show affective behavior at the lower end of the scale of the Taxonomy (Krathwohl 1965).

Difficulty was experienced in properly assessing performance on Variable #4, "Satisfaction in Response". The S had to be observed through the slot in the response apparatus. A closer assessment should be made on this if the experiment were to be duplicated, and some form of alternate activity would have to be offered to distinguish whether or not the S found satisfaction in responding to an activity involving SWAITS. Since most Ss at least manipulated the cardboard shapes, they were assessed only on that activity, which created the probably "falsely-even" distribution of 120 seconds time spent in the "response" per student. Hence, the discriminative value of this item is practically nil.

Problems in the operation of Variable #6 Level (3.3): "Commitment or Conviction" also occurred. Although the E made an excuse to leave the room so that the S would have as

much freedom of choice as was possible, in either placing his name in the "letter box" as an indicator he would like to join, or not taking any action, it was felt that prior school conditioning effects played the significant role in this item. Most of the Ss agreed to join the "SWAIT Club", even though this would mean an encroachment on their free time. It is suspected that they may have felt an obligation to join, conditioned by prior experience at school and the thought that "those in charge" may not be pleased if they did not comply, even with a so-called "free choice". For this reason, the item was probably a poor discriminator and the resulting statistics are likely not indicative of a "commitment" or "conviction" on the part of many of the Ss who answered in the affirmative. The item would need revision if used in a future study.

TAPE RECORDINGS

The tape of interactions between the E and Ss was evaluated by three listeners as described in Chapter 3. There was unanimous agreement in the assessment made by all three. They found that the E's tone was essentially the same in all twelve samples, and there were no coersive utterances. Based on these results it was concluded that E's interaction will all the Ss was the same across experimental conditions.

ASSESSMENT OF AFFECTIVE LEVELS

Descriptions of the 6 affective evaluation items were read by three separate professionals, knowledgeable in

classifying behavioral objectives in the Affective domain as set forth by Krathwohl (1965). Their assessments were compared with levels assigned to the 6 items by the author. The levels upon which the majority of opinion rested, were those assigned to the 6 items used for evaluating S's affective behavior in the present study.

CHAPTER 5
DISCUSSION

INTRODUCTION

If one were to work strictly from the statistical results as they first appeared in this study, there would be a paucity of information. As was shown in the last chapter on statistical results, there were no significant differences among any of the experimental groups to be derived from the first design.

However, working with the Ss in the experiment showed that certain children presented unique examples of behavior for their particular feedback conditions. For instance, one boy, in the P-AR feedback condition, obviously knew he was correct in the responses he was making at sorting the cards, and found it difficult to believe that he could possibly be wrong. After the card-sorting was finished he did not want to do anything that was associated with SWAITS. To him, that was apparently a punishing situation. However, the complete converse was displayed by a girl in another school, who also made nearly all the correct responses in the card-sorting, despite being in the P-AR feedback condition. This particular girl volunteered to come back at the end of the day to help the E clear away the equipment. During the information discussion which followed, it was noted by the E that the S had no father. It might be, that merely being in the presence of a male adult was highly rewarding for that

particular S. Situations such as these exemplify the point made in the "Results" section, page 69 of this paper, pointing out that punishment and reward must be viewed as such by the individual who is experiencing the punishment or reward. This is most aptly stated by MacMillan, Forness, and Trumbull (1973) when they say:

> One point regarding punishment concerns the perception of the child, the recipient of the punishment. Whether a particular stimulus is aversive is determined by its effect on the behavior that follows. No matter how noxious or aversive a particular consequence may seem to the punisher, it is the recipients perception which determines the effect of the consequence on behavior. (p.86)

Because of several such situations, it was decided to re-examine the groups and their individual results on the basis of their responses to the card-sorting task. It was noted that several of those Ss with low scores on the card-sorting task had similar low scores on some of the affective items. The converse also seemed to be true with Ss who did well in the card-sort, also showing more positive results on the affective items. Therefore, the Ss marks were re-grouped, according to the scores on the card-sorting task, and segregated into quartiles as described briefly in the "Results" section of this study. Apparently it was punishing to be incorrect in the card-sorting task and

rewarding to understand the concept of a SWAIT and be correct in the card-sort.

Another point of interest was the general difference in patterns of task-oriented behavior between children in the schools in the downtown area, compared with the children in the schools in the outer residential sector. The children in the downtown schools tended to spend less time reading the lesson than did those in the residential area. However, as a generalized observation, the children from the downtown schools appeared to rely more heavily on the feedback than did those from the outer residential areas. Thus, many of the lower scores came from children in the downtown schools, possibly because they had not fully learned the concept from reading about it.

LIMITATIONS ON USE OF PUNISHMENT IN EXPERIMENTAL SITUATIONS

When working with human subjects, their rights and safety must necessarily be guarded. The University Committee for Safety of Human Subjects and the local Victoria School Board both expressed concern that every precaution should be taken to ensure complete safety of the children who were to participate in the experiment. Letters of notification and agreement (See Figure 5, page 93 Appendix A) were, therefore, sent to all parents or guardians of the children who were to participate. For these reasons however, it was felt that the present study was at the extension of its limits regarding the use of punishment. That such "punishment" was apparently not

regarded as especially punishing by the participating Ss appeared evident from the incidental observations made of their behavior during and following the experimental sessions. However, an experiment employing punishment of school children beyond the level of intensity of the present experiment is unlikely to be conducted under the present stringent, but most necessary regulations for use of human subjects.

THE EFFECTS OF PUNISHMENT UPON AFFECT

Punishment as a positive aid to classroom instruction in discriminative tasks has been noted by Penny and Lupton (1961), Spence and Segner (1967) and Tindall (1971). They all point out that if punishment is used with feedback, it helps the student discriminate more efficiently than by reward only between correct and incorrect responses. Thus, if the student understands a topic, a good feeling, or positive affect can accrue from such treatment. However, if no discrimination between what is correct and incorrect is available, a task can become confusing and frustrating to the student attempting to perform the task. A student might then develop aversive feelings, or negative affect toward the topic he is attempting to study.

In the present study, attempts were made to control the punishment and reward involved, and assess the results at varying levels of affect, measured on the Taxonomy of Educational Objectives: Affective Domain, Krathwohl (1965). The six variables used in this study were prepared in order

to evaluate the subject's feelings, or affect, to the level of Valuing (3.3) on the Taxonomy.

In Variable #1, which was deemed to be at the (1.2) level: Willingness to Receive, significance was achieved at only $P < .09$. However, it is interesting to note that it is possible to cause a "reception" of information by both punishment and reward.

The following two levels of affective items, or variables, those leveled at (1.3): Controlled or Selected Attention, and (2.2): Willingness to Respond, begin to show discrimination between punishment and reward. The actual punishing stimulus, that of aversion to the SWAIT stimulus associated with inability to solve the task and receiving no directive feedback, does not tend to increase the quality of positive affect a S has for the stimulus topic. On the other hand, success at the task does appear to motivate. Apparently, as the level of affect progresses up the scale of the taxonomy, the motivating properties of reward and punishment become more discriminative.

It has been shown that as the levels (as described in Krathwohl's Taxonomy) progress up the scale from simple to complex behavior, they require more intrinsic motivation (See Figure 1, end pocket). The significance between effects of punishment without feedback, and reward, become much more evident. Affective evaluation item #5, which is level (3.2): Preference of a Value, reveals a significant difference at the $P < .05$ level. Such a clearly marked

difference would tend to lend even more credence to the acceptance of the main hypothesis.

Although there were no significant differences between the two contingencies of punishment and reward on variables 4 and 6, levels (2.3): Satisfaction in Response, and (3.3): Commitment or Conviction, respectively, this may have been due to improperly formed discriminative test items rather than lack of the differentially motivating properties of reward and punishment at the higher levels of affective behavior being tested here. (Refer to Re-evaluation of Variables 1, 4, and 6 on pages 71 and 72, in the chapter on "Results" in this paper.)

From the second (re-grouped) set of results it can be concluded that there is some support for the hypothesis. In a learning situation in which a subject must operate without feedback, the S is likely to find the situation punishing with the consequence that his affect toward that particular topic will not extend beyond the lower levels of Krathwohl's Taxonomy. That is, in common sense terms, you can get a S to "attend" to a topic by either punishment and/or reward. However, at the next higher levels on the Affective scale, those of Responding and Valuing the use of punishment, without success, appears to be of little use in obtaining these levels of affective behavior.

MOTIVATION AND THE LEVELS OF KRATHWOHL'S TAXONOMY

Underlying the main hypothesis of this paper, or a sub-sumption of the hypothesis, is the proposal that

Krathwohl's Taxonomy of Educational Objectives: Affective Domain (1965) can be used to classify the levels at which a student may be motivated to learn.

"Motivation" can be accomplished by both reward and punishment. However, punishment unaccompanied by success is of limited use. We can motivate children to attend, and respond, to some minor degree, using punishment without any subsequent success. When we wish to go beyond the lowest of the Responding levels, and motivate a child to display affective behavior at or beyond the upper "Responding" levels (2.2) and (2.3), then we must create rewarding situations in which the child will meet with success. Referring back to Figure 1, End Pocket of this paper we note that at level (2.3): "Satisfaction in Response" the "Brief Description of Levels" refers to this as:

> A feeling of satisfaction, an emotional response, generally of pleasure, zest or enthusiasm beyond the behavior of voluntary response. (Krathwohl, 1965)

Such response requires that the student meet with success. Punishment alone probably cannot be used to motivate a student to display behavior of this calibre. A simple rule begins to be suggested: The farther up the scale of the Taxonomy of effective behavior one goes, the more complex are the behaviors and the greater the reliance on success (reward) for their achievement.

Feeling of success and the ability to master a topic or

concept such as was shown by the Ss in the "High Scoring" group in the re-organized scores in this study, are reflected in the significance of results on Variable #5, which is at level (3.2): Preference of a Value. Krathwohl (1965) in his brief description of level (3.2) says:

> ... the individual is sufficiently committed to the value to pursue it, to seek it out, to want it.

Refer also to Figure 1, End Pocket in this paper.

Following on in this vein of logic, it would appear reasonable to say that Krathwohl's Taxonomy of Educational Objectives: Affective Domain offers promise as a useful device for classifying the motivational level of students. It might also be noted that the present study has attempted to show that students can be motivated at all levels by the use of reward and success, while punishment, with no attendant success, is of little use as a motivational device beyond that of the first or Receiving level.

IMPLICATIONS FOR FUTURE RESEARCH

Results from the initial design of this experiment imply that there are no differences between the use of various treatment conditions and the level of affective behavior that can be obtained from Ss, relative to some topic study, using either various combinations of punishment and reward, or using punishment alone, without the reward of success in the task. However, when the revised scores were used it was noted that there were at least some significant

differences. It was also noted, in Chapter 4, that certain of the affective measuring devices require reformulating. Future research in this area should take the form of a re-organized design with better validated devices for measuring affect reflective of the higher levels of Krathwohl's Taxonomy.

Since the initial manipulation of punishment was thought to be ineffective, being too mild, a slightly more powerful form of punishment should be employed, keeping in mind, of course, the safety and well-being of the S. It is worth noting that several authors (MacMillan, Forness and Trumbull 1973, Viel 1975) point out, that if punishment is administered in a manner in which there has been a prior positive relationship between the E and the S, then there is little likelyhood of any lasting adverse emotional reactions accruing from such punishment. If such a study were again undertaken, time should also be set aside to stress to the S the value and use of behavioral objectives. Viel (1975) demonstrated that Ss who were given instruction on the use of behavioral objectives did significantly better than other Ss who were given behavioral objectives but no instruction. Implications of this also appear in the present study, where Ss who had low marks in the card-sorting were observed to be those who generally appeared to read the lesson less carefully.

Further studies should be conducted in a setting similar if not the same as that of the regular classroom.

They might also take place over a longer period of time.

There are innumerable possibilities for research in the area dealing with affective behavior as classified by Krathwohl in his Taxonomy. The area has barely been opened to exploration; this study being among the first.

SUMMARY AND CONCLUSION

The main purpose of this study was to determine the degree to which a Ss affective behavior can be changed by the use of reward and punishment, or various combinations of these. Because of the initial rejection of the hypothesis a revised set of raw scores, employing only 2 treatment groups was prepared on the basis of high or low scores on the card-sorting part of the experimental task. The groups represented two general levels of behavior associated with the task of learning a three attribute conjunctive concept.

Three of the affective variables showed no significant differences. One, however, was at the lowest level (1.2), and such a result could be expected, since it is logical to expect that Ss can be made to Receive or Attend to a task either by punishment and/or reward. The other two items had structural faults and were not considered sufficiently valid or reliable as evaluation items. This left three variables for which significant results were obtained, one at each level of Receiving, Responding, and Valuing. From these results, it is suggested that where Ss have met with success in mastering a task, they show a correspondingly

high level of affect, even to the Valuing level (3.2). It is also suggested that Ss who have had little success (reward) and relatively more failure (punishment) with the mastery of a new task, will have correspondingly low levels of affect, probably not beyond the first or Receiving level.

Revision of some of the higher level affective items used in this study will be required to test further and more conclusively the relative effectiveness of the three treatment conditions of Reward-Only (R-O), Reward and Punishment (R-P) and Punishment-Only (P-O), on the acquisition of affective behavior characteristics of Krathwohl's higher levels.

Members of the teaching profession should become better acquainted with the affective effects of the use of reward and punishment. If the results of this study prove to be supported by further research, the careful and wise use of punishment and reward will surely be based on the notion that positive affect at Krathwohl's higher levels in his Taxonomy, cannot be obtained through punishment alone.

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APPENDIX A

FORMS, MATERIALS, AND APPARTUS

Figure 5

Parental Permission Form

April 27th, 1976.

Dear Parent:

A graduate student from the University of Victoria will be in our school to conduct a study of children's concept learning and how the child 'feels' toward lessons (the pupils affect). Only Grade 4 children will participate.

The children will be shown pictures of objects and asked to sort them into various categories. While they work, they will have the opportunity to earn points which they can later trade for several pieces of candy or gum. Each child will participate for about 30 minutes. An undemanding atmosphere will be maintained throughout the session. Should a child wish at any time to discontinue the activity, he is permitted to do so. The purpose of this study is to determine how a child feels (his affect) toward instruction and instructional procedures.

I would like to have your permission for your child to participate. Would you please complete the bottom portion of this letter and return it to school.

Yours sincerely,

Principal

(Please detach and return this portion)

I _____ hereby give my consent for my child _____ to participate in this study of student's affective behavior.

Figure 6a

Page 1 of Lesson Booklet for Ss in the (R-O) Condition

INTRODUCTION

This is a lesson about designs. A design is a pattern of shapes, lines, colours, or figures that is pleasing to look at. The designs in this lesson are made up of various combinations of a:

Circle, ○

Square, □

Triangle, △

and Diamond. ◇

You are going to learn about a certain kind of design called a:

SWAIT

As you learn, you will have a chance to earn points. At the end of the lesson, you can trade these points for some candy or gum.

During the lesson, you will look at cards. Each card will have a design on it. You must decide whether the design is a SWAIT or not a SWAIT.

Each time you are right, you will earn one point toward some candy or gum. The more times you are right, the more points you will earn. Each time you are wrong, you get no points.

Figure 6b

Page 1 of Lesson Booklet for Ss in the (R-P) Condition

INTRODUCTION

This is a lesson about designs. A design is a pattern of shapes, lines, colours, or figures that is pleasing to look at. The designs in this lesson are made up of various combinations of a:

Circle, 

Square, 

Triangle, 

and Diamond. 

You are going to learn about a certain kind of design called a:

SWAIT

As you learn, you will have a chance to earn points. At the end of the lesson, you can trade these points for some candy or gum.

During the lesson, you will look at cards. Each card will have a design on it. You must decide whether the design is a SWAIT or not a SWAIT.

Each time you are right, you will earn one point toward some candy or gum. The more times you are right, the more points you will earn. But each time you are wrong, you will lose a point. The more times you are wrong, the more points you will lose.

Figure 6c

Page 1 of Lesson Booklet for Ss
in the (P-O) and (P-AR) Conditions

INTRODUCTION

This is a lesson about designs. A design is a pattern of shapes, lines, colours, or figures that is pleasing to look at. The designs in this lesson are made up of various combinations of a:

Circle, 

Square, 

Triangle, 

and Diamond. 

You are going to learn about a certain kind of design called a:

SWAIT

As you learn, you will have a chance to earn points. At the end of the lesson, you can trade these points for some candy or gum.

You will begin the lesson with 40 points. So you already have some candy or gum coming to you. During the lesson, you will look at cards. Each card will have a design on it. You must decide whether the design is a SWAIT or not a SWAIT.

Each time you are wrong, you will lose one point toward some candy or gum. The more times you are wrong, the more points you will lose. Each time you are right, no points will be taken away.

Figure 7
Page 2 of Lesson Booklet for Ss in All Conditions

Objective

READ THIS CAREFULLY:

Your Goal for this Lesson

In order for you to complete this lesson, you must be able to do the following:

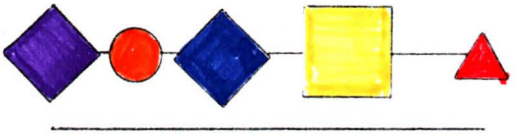
You must be able to look at 10 pictures of designs and tell which designs are SWAITS and which designs are not SWAITS.

Figure 8
Lesson: What is a SWAIT (Page 1)

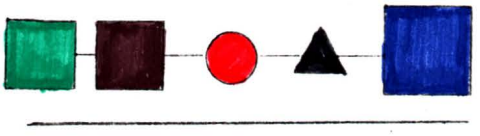
WHAT IS A SWAIT?

You are going to learn about a certain kind of design called a SWAIT. A SWAIT is a design made up of several figures. these figures can be circles, squares, triangles and diamonds.

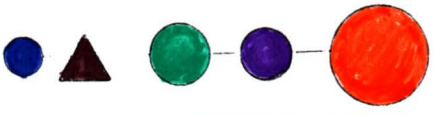
1. Sometimes a SWAIT may have more than one kind of figure in it. For example, it may have two diamonds:



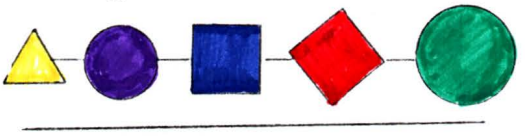
or, it may have three squares:



or it may have four circles:



But in order for the design to be a SWAIT, it must have at least one triangle in it:



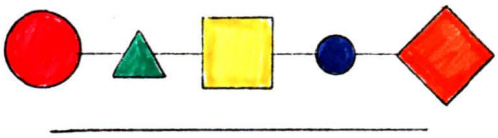
So, the first rule about SWAITS is that:

ALL SWAITS MUST HAVE AT LEAST ONE FIGURE THAT IS A TRIANGLE.

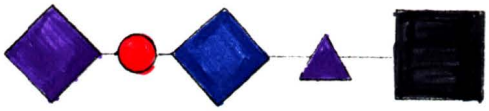
... Turn to next page.

Figure 8: Lesson: What is a SWAIT (Page 2)

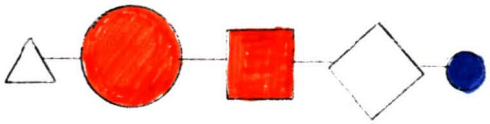
2. SWAITs are usually made up of different colours too. There may be red, green, blue, yellow, or orange in a SWAIT:



or, it may be coloured with violet, pink, blue, brown, or black. In fact, a SWAIT can have almost any colour in it:



A SWAIT may have two or more figures with the same colour, or it may have one or more figures with no colour:



But in order for the design to be called a SWAIT, at least one of the figures must be blue:

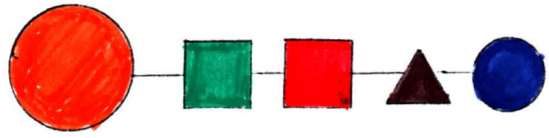
So, the second rule about SWAITs is that:

ALL SWAITS MUST HAVE AT LEAST ONE FIGURE THAT IS BLUE.

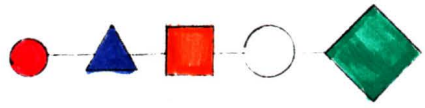
... Turn to next page.

Figure 8: Lesson: What is a SWAIT (Page 3)

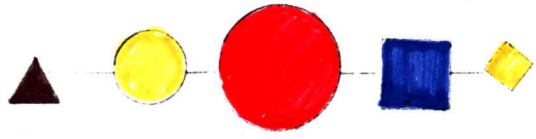
3. SWAITs may have figures of different sizes too. One figure may be large, while the rest are small:



or, there may be one small figure, several medium-sized figures, and one large figure:



or, all of the figures may be of different sizes:



But in order for the design to be called a SWAIT, one of the figures must be larger than all the rest:

So, the third rule about SWAITs is that:

ALL SWAITS MUST HAVE ONE FIGURE THAT IS LARGER THAN ALL THE REST.

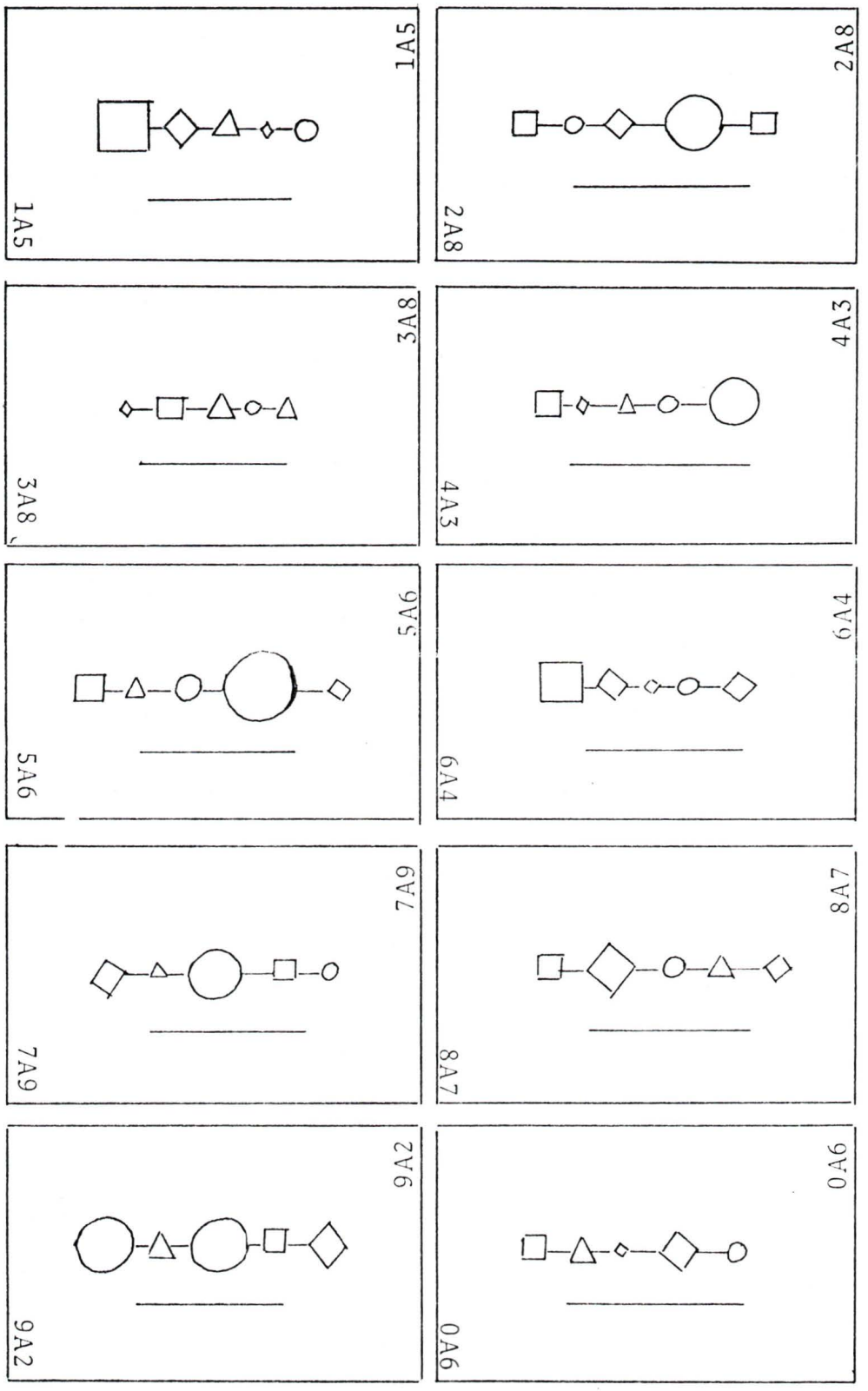
When a design shows all three rules at the same time, it is called a SWAIT.

END OF LESSON

Figure 9a

Learning Deck$_A$

(Actual size of each card 3" by 5")

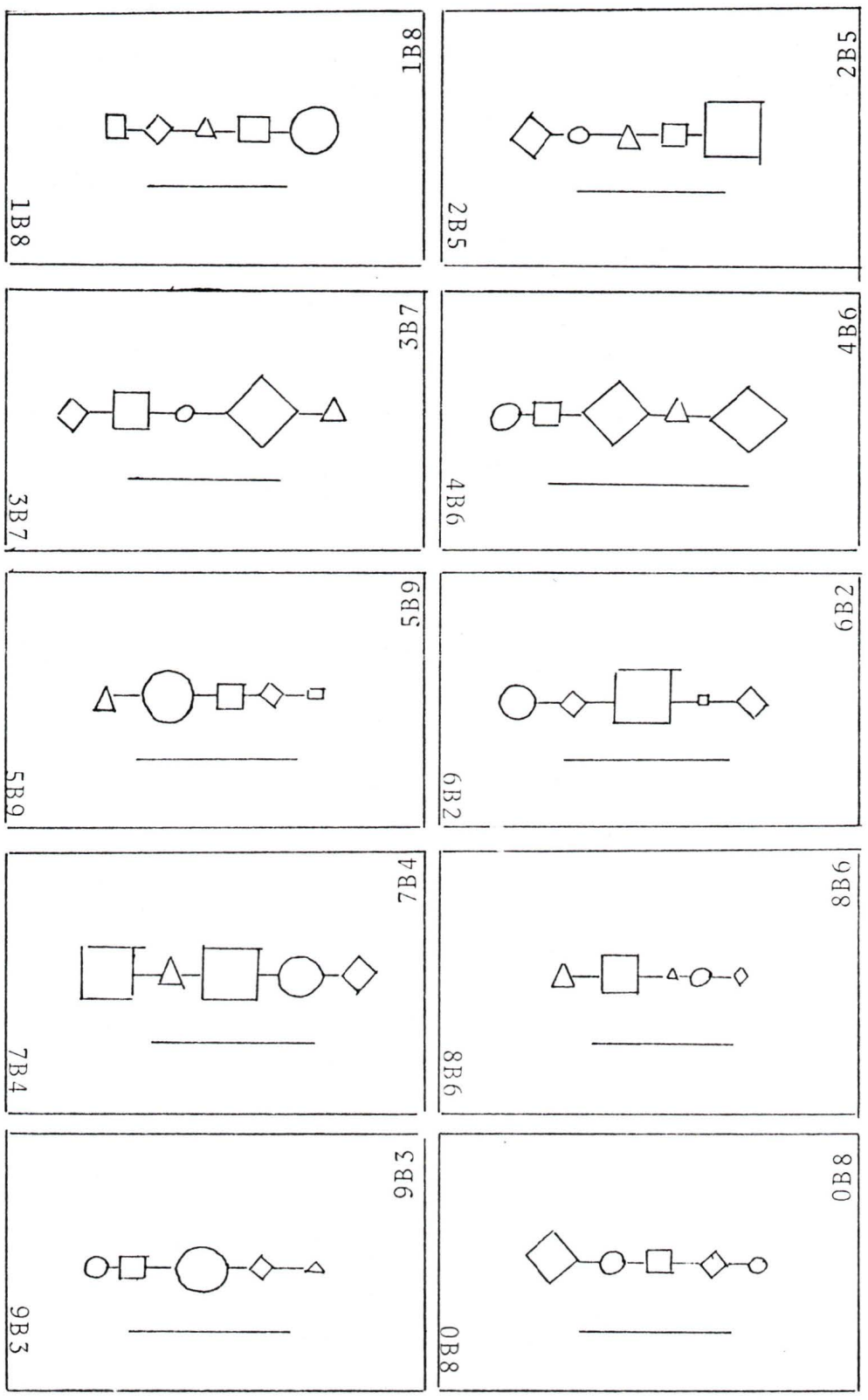


(Viel, 1975)

Figure 9b

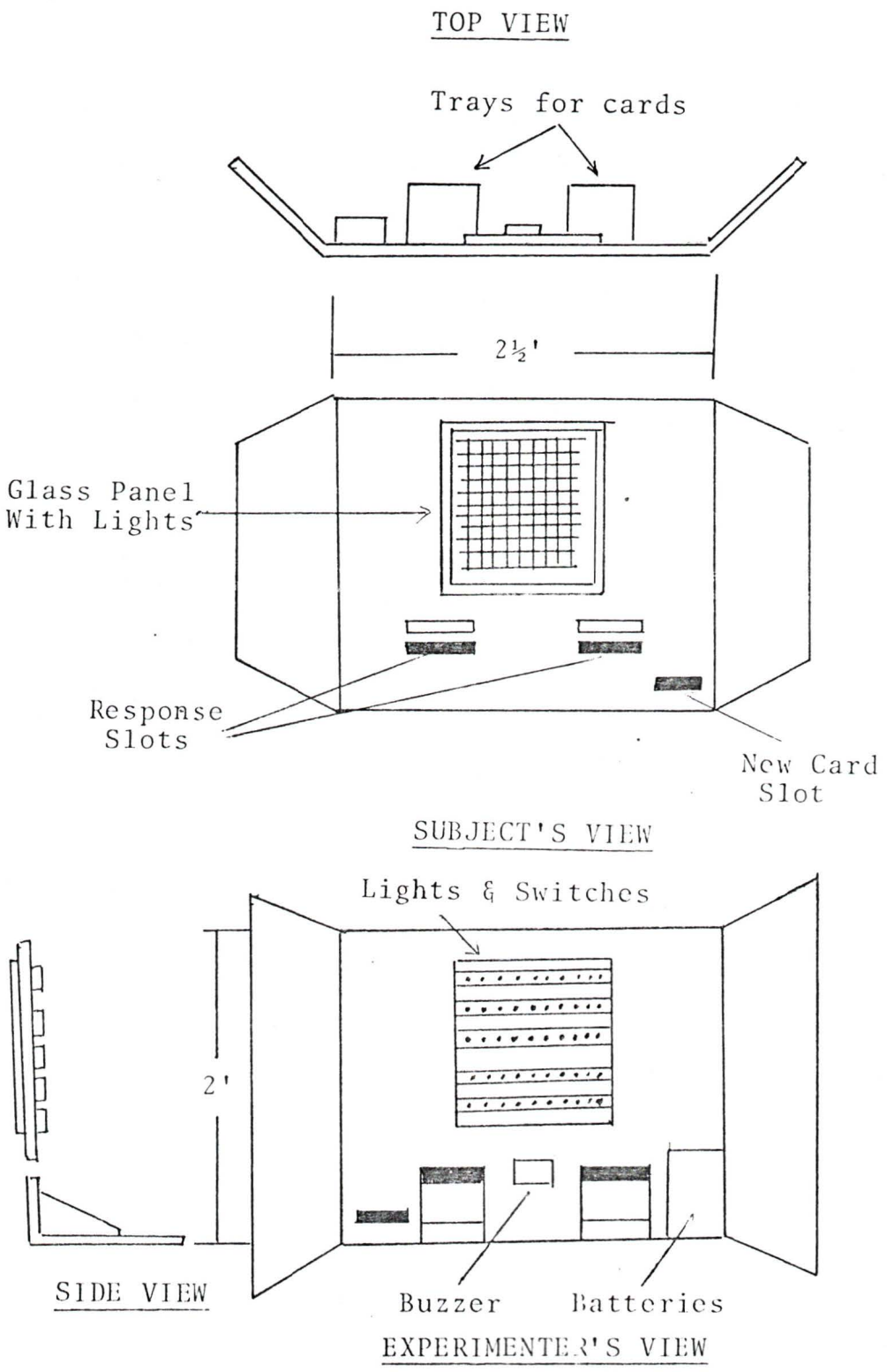
Learning $Deck_B$

(Actual size of each card 3" by 5")



(Viel, 1975)

Figure 10
Response Apparatus



(Viel, 1975)

Figure 11

Data Collection Form

Name _____ Boy ____ Girl ____ Date _____

Grade _____ School _____ Birthday _____ C.A. ____

Group Assignment

R-O	R-P	P-O	P-AR

Card Responses

1st Trial

Card No.	Correct	Incorrect
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

2nd Trial

Card No.	Correct	Incorrect
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

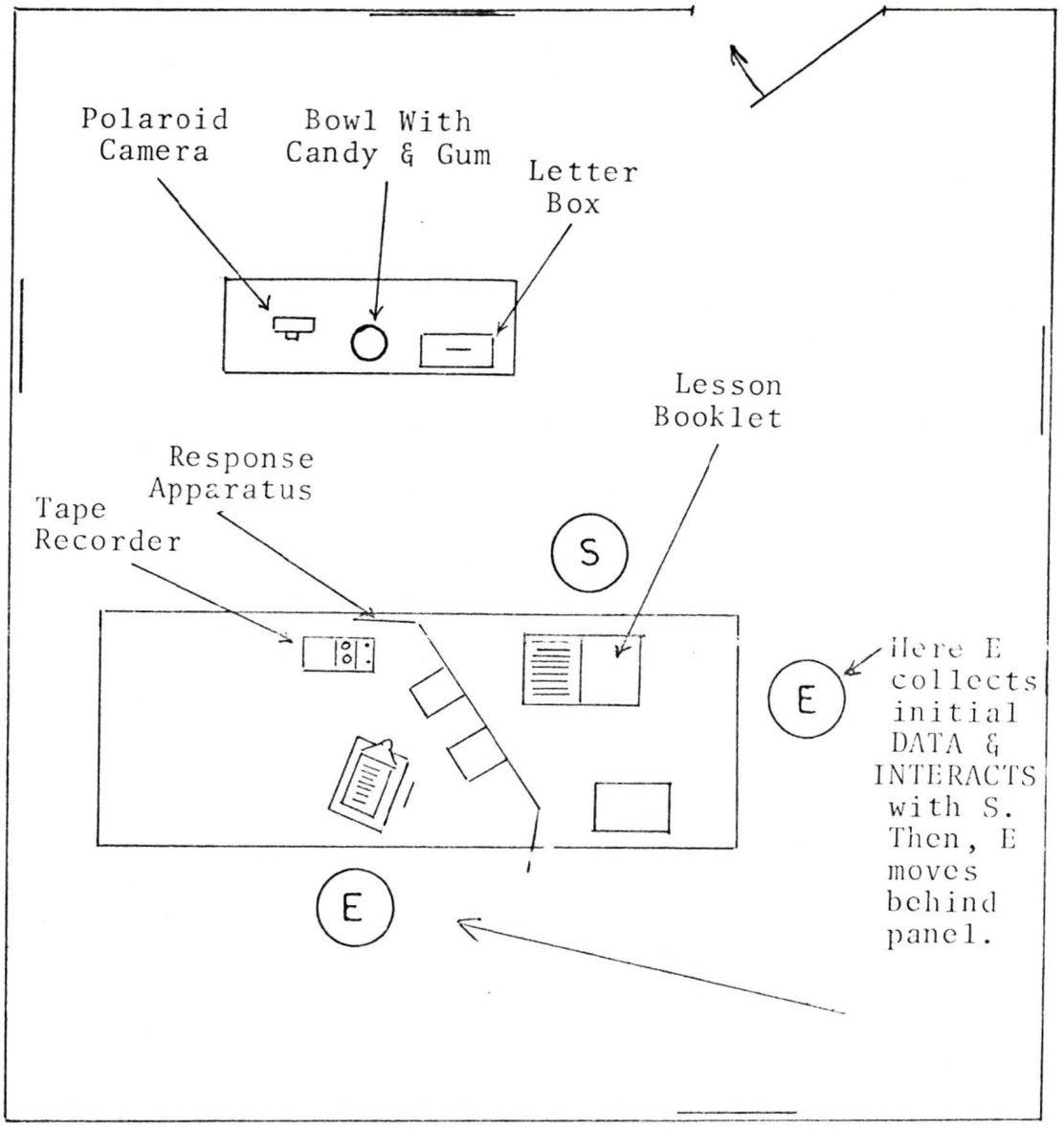
3rd Trial

Card No.	Correct	Incorrect
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

4th Trial

Card No.	Correct	Incorrect
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

Figure 12
The Experimental Setting



(After Viel, 1975)

Figure 13
Point-Piece Exchange Table

Column A = Number of Points

Column B = Number of Pieces

A	B	A	B	A	B	A	B	A	B
1	1	16	7	31	6	46	7	61	6
2	2	17	8	32	6	47	8	62	6
3	3	18	8	33	6	48	8	63	6
4	4	19	8	34	7	49	8	64	7
5	5	20	9	35	7	50	9	65	7
6	6	21	6	36	7	51	6	66	7
7	7	22	6	37	8	52	6	67	8
8	8	23	6	38	8	53	6	68	8
9	9	24	7	39	8	54	7	69	8
10	9	25	7	40	9	55	7	70	9
11	6	26	7	41	6	56	7	71	6
12	6	27	8	42	6	57	8	72	6
13	6	28	8	43	6	58	8	73	6
14	7	29	8	44	7	59	8	74	7
15	7	30	9	45	7	60	9	75	7

(Viel, 1975)

Figure 14

Question Sheet #1

Item

Read the statement below. Under each one is a line marked-off with nine marks. Decide how much you like or dislike what the statement says and place a check mark ( ) on the mark on the line that most closely describes how you feel about what the sentence says.

1. Drawing and colouring diagrams on paper.

I dislike it								I think it's great
	I don't quite dislike it						I enjoy it	
		I can do it if I have to				I like it		
			It's not quite O.K.		It's O.K.			
							I enjoy it a lot	

2. Drawing and colouring pictures on paper.

I dislike it								I think it's great
	I don't quite dislike it						I enjoy it	
		I can do it if I have to				I like it		
			It's not quite O.K.		It's O.K.			
							I enjoy it a lot	

3. Drawing and colouring a SWAIT on paper.

I dislike it								I think it's great
	I don't quite dislike it						I enjoy it	
		I can do it if I have to				I like it		
			It's not quite O.K.		It's O.K.			
							I enjoy it a lot	

4. Drawing and colouring a picture of an animal on paper.

I dislike it								I think it's great
	I don't quite dislike it						I enjoy it	
		I can do it if I have to				I like it		
			It's not quite O.K.		It's O.K.			
							I enjoy it a lot	

Figure 15

Question Sheet #2

Item

Read the question below. Under it is a line marked-off with nine marks. Decide how much you agree or disagree with what the question asks, and then place a check mark ( ) on the mark on the line that most closely describes how you feel about what the question asks you:

During recess break tomorrow, would you be willing to show a friend how to recognize a SWAIT?

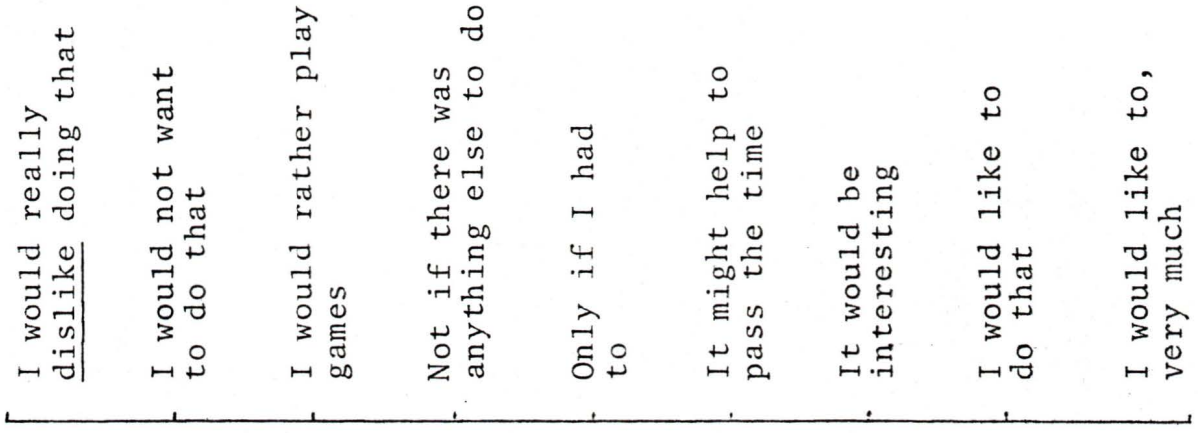


Figure 16
A SWAIT Picture

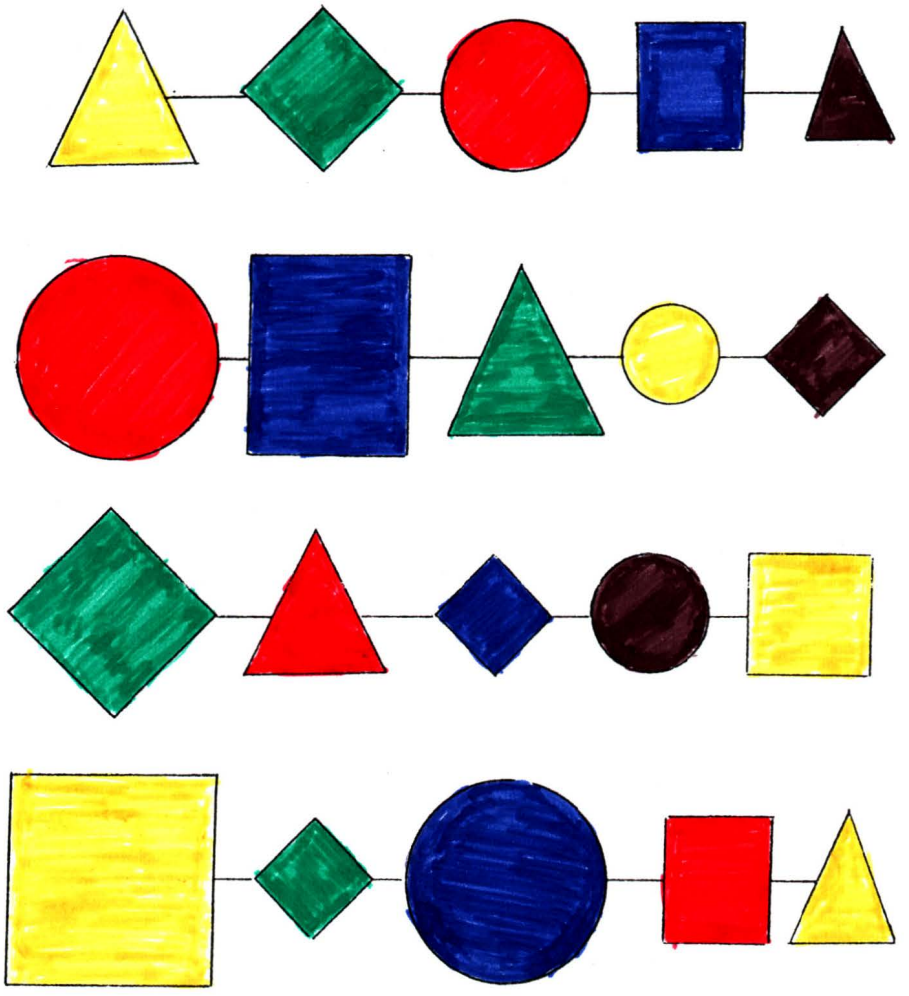
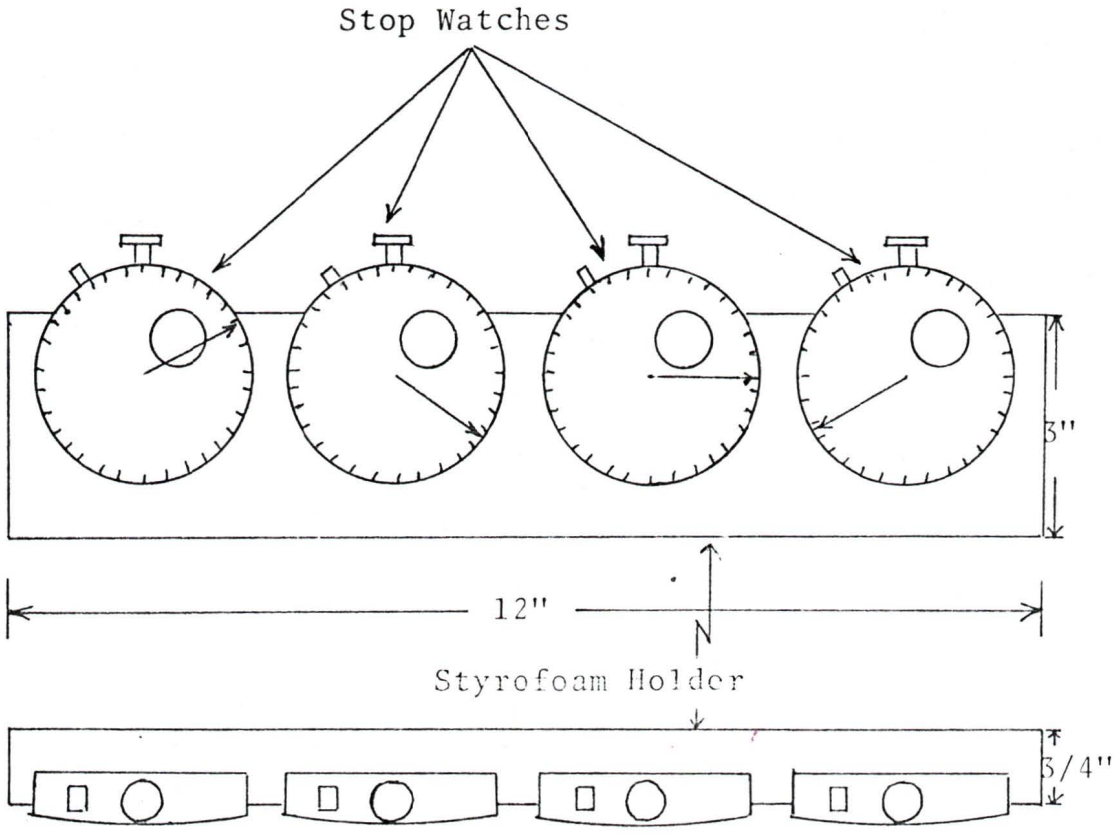
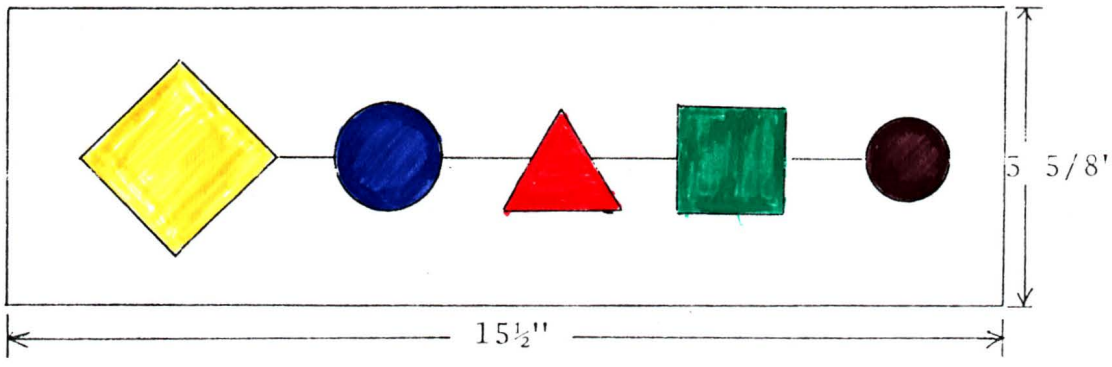


Figure 1/
Stop Watches



TOP VIEW

Figure 18
Picture of SWAIT



APPENDIX B

INSTRUCTIONS TO SUBJECTS

INSTRUCTIONS TO SUBJECTS

When the S enters the room he is asked to be seated at the table facing the front of the response apparatus. The E then assigns S to one of the four experimental conditions.

For Ss in all conditions, E says:

"Before we begin, I'd like some information about you." (E asks S his name, grade, and birthday) These are recorded on the Data Collection Form. "All right, now we can begin. Today you are going to learn a lesson from this booklet." (The appropriate lesson booklet is placed before the S) "I would like you to open it and read page one in a loud, clear, voice."

Ss in all groups open their booklet and read aloud from page one.

All Ss read the first page successfully, none were rejected from the study.

To all subjects, E continues:

"Let me explain how this will work. After you have read the lesson in the booklet, which you will do shortly, you will then be asked to sort out cards. The cards will come through this slot here. (E motions toward the appropriate slot in the response apparatus, and draws out

one of the learning decks from the slot) You will read these cards in this fashion, with the black line at the bottom." (E motions this time toward the card and holds the card in the appropriate position.)

"Now you must look at each card and decide whether the design is a SWAIT or NOT A SWAIT. If you think it is a SWAIT, you will put it into the slot marked 'SWAIT'. If you decide it is not a SWAIT, you will put it in the slot marked 'NOT A SWAIT'. Remember you will learn how to recognize a SWAIT when you have read the lesson in the booklet.

When you hear the buzzer, which sounds like this, (E reaches behind the response apparatus and activates the buzzer) that will tell you to make another selection by placing the card in the 'SWAIT' slot if you think it is a SWAIT, or the 'NOT A SWAIT' slot if you this it is not a SWAIT.

Once you have placed the card in one of the slots you should then look up at the glass panel here. There are lights behind the glass. Each light stands for a point. Here is how it works."

For Ss in the (R-O) condition, E continues.

"Each time you put a card in, and you are correct,

light will come on. (E demonstrates) That means you have earned one point toward some candy or gum. (E gestures toward the bowl) But each time that you are wrong, a light will go off. (E demonstrates) That means that you have lost one point. Then you look at the next card, and, when you hear the buzzer, you put the card into one of the slots. You do that until you use up all of the cards. You will sort out four decks of cards, with ten cards in each deck, which means you will have forty selections to make. At the end of the lesson, we'll count up the points and you can trade them in for some candy or gum. Do you have any questions? O.K., please turn to page two and read it out loud in the same clear voice as you did before."

For Ss in the (P-O) condition, E continues.

"See there are forty lights already on. That means you already have forty points toward some candy or gum. (E gestures toward the bowl) Each time you put a card in and you are wrong, a light will go off. (E demonstrates) That means you have lost one of your points. But each time you are right nothing will happen. No light will go off and you keep the

point. Then you look at the next card, and, when you hear the buzzer, you put the card into one of the slots. You do that until you use up all of the cards. You will sort out four decks of cards with ten cards in each deck, which means you will have forty selections to make. At the end of the lesson, we'll count up the points and you can trade them in for some candy or gum. Do you have any questions? O.K., please turn to page two and read it out loud in the same clear voice as you did before."

Ss in the (P-AR) condition were given the same instructions as the (P-O) condition.

The S turns to page two of the lesson booklet and reads aloud the text describing the objective of the lesson. After S has read this material, E continues:

"I would like to review these shapes with you so that I will know that you understand what they are. (E selects a cardboard shape that is square and holds it up before the S.) This shape is a (here E allows S to make the correct response). Good, that is correct. (E then tips up the figure to represent a diamond and continues.) But if it is placed on its corner it becomes a (again E allows

the S to make appropriate response). Good! Now this shape is a (here E exchanges the shape for a circle, and allows S to answer appropriately). Good! Then finally we have these shapes that are called (E has now exchanged the circle for a triangle which he displays to the S and waits for the appropriate answer). Good! We will then be working with squares, diamonds, circles, and triangles. (As E mentions each shape he displays the appropriate shape).

Now to make sure that you recognize the difference between the colours I would like to go over them briefly with you. (Here E displays one of the cards from the learning deck and points to the various colours used, giving the name of each colour. This was done because the dark blue and purple might have caused some confusion, and a blue figure was important to the concept of a SWAIT). Are there any questions?"

For all Ss, E continues:

"The lesson begins after this yellow page. I'm going to go behind the board now, and when I say 'Turn the page,' you turn the page and read the lesson silently to yourself. The

lesson is three pages long. Be sure to read each page carefully. When you finish, close the booklet, tell me that you are ready, then pick up the cards that will come through the slot, hold the cards as I showed you, and, when you hear the buzzer, put the first card in. Any final question? (E moves behind the response apparatus) O.K., turn the page and begin reading."

The S reads the lesson and then sorts four decks (40 cards) Decks A and B are sorted twice, alternately, after being shuffled. When this has been done E then continues:

"Now I would like you to answer these questions on these sheets for me, if you would, please. (Here E places Questionnaire sheets, items one and three beside the S [Refer to figures and pages and Appendix A] and continues). So that you will understand how to fill these in, I will read the instructions for you. (E reads the instructions to item one, and indicates how the responses should be made. When he is finished E says) You should now answer both sheets. You may take your time in answering them." (E then moves behind the response apparatus to allow the S to answer us freely as possible).

When the S has finished answering the questionnaire sheets, E then says:

> "Now I have something else I would like you to do for me. There are four pictures on the walls which I would like you to look at. (Here E changes the position of the Ss chair so that he can view all four pictures simply by moving his head). Now when I say start, I would like you to spend two minutes looking at the pictures from your chair. You can look at one or all of them just as you feel inclined. I will tell you when to stop (E then positions himself, standing behind the response apparatus, so that he can watch the Ss eye and head movements, and be able to operate the stop watches without the S seeing them. E then says) You should start now. (Whereupon E records on the stop watches the time S spends looking at each of the four pictures).

When this has been completed E then continues with:

> "Thank you. Now I would like to take your picture with this Polaroid camera if I may. I will give you the picture to take home with you at the end of the day. If you think you would like to have your picture taken holding a picture of a SWAIT, you can use this card

here to hold in front of you. (Here E motions to the card with the SWAIT design on it). However, you don't have to, only just if you think you would like to." (E then positions the S against an appropriate background, and takes the Ss picture, with or without the SWAIT design.

E then says:

"I am thinking about starting a SWAIT Club in the school. A SWAIT Club is a club where you would make SWAIT designs, work with SWAIT puzzles and play games using SWAITs. This, of course, would have to be either at recess, lunch hour, or just after school, once a week, for about twenty minutes to half an hour. The members of the club would decide on the time that was most suitable for a meeting time. If you would like to join, you can write your name and phone number on this piece of paper, and place it in the letter box. (E motions toward the letter box). I have to go down the hallway for a minute or two. I won't be long." (E then leaves the room so that the S could have more freedom of choice).

When E returns he says:

"Now let's look at how your picture turned out."

(E peels back the picture and shows it to the S. He then coats the picture with emulsion to preserve it from fading, and then places it in a safe spot to dry).

E now says:

"I have to complete some of these forms, and count up your points. While I am doing that, you might like to occupy yourself making SWAITs with these shapes. (E motions toward the box of cardboard geometric shapes on the table). This will just take a minute or two." (E moves behind the response apparatus and observes and records the time the S spends making SWAIT designs with the geometric shapes).

At the end of two minutes the E returns to the front of the table. E then says to the children in the R-O, R-P, and P-O groups:

"Now let's see, you have earned (E indicates the amount of candies earned, according to numbers calculated from the Point-Piece Exchange Table) candies or gum. You may select the candies of your choice from the bowl. (E motions toward the bowl.) I will put your candies in this bag with your name on it, so I will know which one is yours."

To those Ss in the R-O, R-P, and P-O groups E said:

"I want to thank you for helping me with this lesson on SWAITS. I will send your candies and picture to your classroom at the end of the afternoon so that you may have them to take home. I would prefer that you don't discuss SWAITS with your friends or classmates until after school. This will help me in my study of how children learn. If your friends question you about what we did, just reply, 'I was asked not to say anyting'."

To those Ss in the P-AR group, a more complete explanation was necessary.

E: "Now that we have finished, I would like to explain to you what I have been doing that has kept you from getting any SWAITS correct. I am trying to find out how children learn and feel about different things. In order to do this, I was not quite truthful with you. When you were sorting out the SWAIT cards, many of your choices were correct, and really you did very well. I told you they were wrong, so that I could find out how you would feel about being wrong all the time.

Because you actually did as well as the others, you may take ten pieces of candy or gum from the container. I will place these in the bag

and they will be sent to your teacher for you to take home at the end of the day.

I would prefer that you didn't discuss SWAITS with your friends or classmates until after school. This will help me in my study of how children learn. If your friends question you about what you did, just reply, 'I was asked not to say anything'.

Thank you for being such a good student and helping me with my study."

APPENDIX C

STATISTICAL DATA

Table 2

Means and Standard Deviations for

Four Treatment Groups on Five Dependant Variables

Variable 1: Level (1.2) "Willingness to Receive"

Group	No.	$\bar{x}$	S.D.
1	12	6.33	2.23
2	10	7.00	1.25
3	10	6.60	2.22
4	10	6.30	1.42
Total	42	6.55	1.79

Variable 2: Level (1.3) "Controlled or Selected Attention"

Group	No.	$\bar{x}$	S.D.
1	12	28.58	24.44
2	10	33.40	32.33
3	10	24.50	24.20
4	10	19.90	15.27
Total	42	26.69	24.08

Variable 3: Level (2.2) "Willingness to Respond"

Group	No.	$\bar{x}$	S.D.
1	12	7.67	1.44
2	10	7.30	1.42
3	10	8.00	0.67
4	10	7.10	1.97
Total	42	7.52	1.42

Table 2 (Continued)

Variable 4: Level (2.3) "Satisfaction in Response"

Group	No.	$\bar{x}$	S.D.
1	12	120.00	0.0
2	10	90.00	50.99
3	10	107.00	20.03
4	10	102.00	40.50
Total	42	105.00	33.40

Variable 7: "Card-sorting. SWAIT Concept"

Group	No.	$\bar{x}$	S.D.
1	12	30.33	8.34
2	10	30.40	6.74
3	10	32.60	5.76
4	10	29.00	7.79
Total	42	30.57	7.04

Table 3

Analysis for Variance for

Affective Measures on Five Dependant Variables

Variable 1: Level (1.2) "Willingness to Receive"

Source	SS	MS	DF	F	P
Groups	0.32	1.08	3.	0.31	0.82
Error	0.13	3.45	38.		

Variable 2: Level (1.3) "Controlled or Selected Attention"

Source	SS	MS	DF	F	P
Groups	0.10	334.08	3.	0.54	0.66
Error	0.23	614.44	38.		

Variable 3: Level (2.2) "Willingness to Respond"

Source	SS	MS	DF	F	P
Groups	0.48	1.60	3.	0.76	0.52
Error	0.80	2.10	38.		

Variable 4: Level (2.3) "Satisfaction in Response"

Source	SS	MS	DF	F	P
Groups	0.51	1690.21	3.	1.54	0.22
Error	0.42	1099.21	38.		

Variable 5: "Card-sorting. SWAIT Concept"

Source	SS	MS	DF	F	P
Groups	0.67	22.27	3.	0.42	0.74
Error	0.20	53.09	38.		

Table 4

Table of Raw Scores

Condition	Subject No.	V_1 1.2	V_2 1.3	V_3 2.2	V_4 2.3	V_5 3.2	V_6 3.3	V_7 Card Sort
R-O	1	7	29	7	120	NO	YES	34
	2	3	34	9	120	NO	NO	35
	3	5	27.7	8	120	YES	YES	25
	4	9	-	9	120	YES	YES	23
	5	2	-	4	120	NO	YES	18
	6	7	65.3	9	120	YES	YES	38
	Total	33	156	46	720	3	5	173
								.72
R-P	13	5	6	7	120	NO	YES	21
	14	6	3.2	7	60	NO	YES	25
	15	9	37.2	7	120	YES	YES	37
	16	8	28.9	9	120	YES	YES	26
	17	7	-	8	120	YES	YES	26
	Total	35	75.3	38	540	3	5	135
								.67
P-O	23	9	21.2	8	60	NO	NO	29
	24	7	1	8	100	NO	YES	35
	25	1	-	9	100	NO	YES	31
	26	7	-	9	120	YES	YES	35
	27	5	35	7	120	YES	YES	29
	Total	29	57.2	41	500	2	4	159
								.79
P-AR	33	8	10	7	120	NO	YES	19
	34	8	30.2	9	120	YES	YES	23
	35	4	6.9	2	120	NO	YES	18
	36	7	32.6	9	-	NO	YES	27
	37	8	36.8	7	120	YES	YES	39
	Total	35	116.5	34	480	2	5	126
								.63
R-O	7	5	24.3	7	120	NO	NO	20
	8	8	35.2	9	120	YES	YES	38
	9	9	26.7	8	120	YES	YES	37
	10	8	21.4	7	120	YES	YES	39
	11	7	80.4	8	120	YES	YES	37
	12	6	-	7	120	YES	YES	20
	Total	43	188	46	720	5	5	191
								.79

Table 4 (Continued)

Condition	Subject No.	V_1 1.2	V_2 1.3	V_3 2.2	V_4 2.3	V_5 3.2	V_6 3.3	V_7 Card Sort
R-P	18	6	58.2	4	120	NO	NO	23
	19	6	32.8	9	-	YES	NO	38
	20	8	13.5	8	-	YES	YES	36
	21	7	107.2	7	120	YES	NO	37
	22	8	46.7	7	120	NO	YES	35
	Total	35	258.4	35	360	3	2	169
								.84
P-O	28	7	12.4	7	120	YES	YES	22
	29	7	72	8	120	YES	YES	28
	30	7	14.5	8	120	YES	YES	39
	31	8	48.8	8	120	NO	YES	40
	32	8	40.7	8	90	YES	YES	38
	Total	37	188.4	39	570	4	5	167
								.83
P-AR	38	6	23.4	7	60	YES	NO	39
	39	5	0.7	7	120	NO	NO	36
	40	6	42.6	8	120	YES	YES	33
	41	5	13.4	7	120	YES	YES	31
	42	6	2.5	8	120	YES	NO	25
	Total	28	82.6	37	540	4		164
								.82

Table 5

Revised Ranking of Raw Scores

Card-sort Scores	Subject No.	V_1 1.2	V_2 1.3	V_3 2.2	V_4 2.3	V_5 3.2	V_6 3.3	V_7 Card Sort
18-23	1	2	-	4	120	NO	YES	18
	2	4	6.9	2	120	NO	YES	18
	3	8	10	7	120	NO	YES	19
	4	5	24.3	7	120	NO	NO	20
	5	6	-	7	120	YES	YES	20
	6	5	6	7	120	NO	YES	21
	7	7	12.4	7	120	YES	YES	22
	8	9	-	9	120	YES	YES	23
	9	8	30.2	9	120	YES	YES	23
	10	6	58.2	4	120	NO	NO	23
	Total	60	148	63	1200	4	8	207
		6.0	4.8	6.3	120	.4	.8	20.7
24-28		5	27.7	8	120	YES	YES	25
		6	3.2	7	60	NO	YES	25
		6	2.5	8	120	YES	NO	25
		8	28.9	9	120	YES	YES	26
		7	-	8	120	YES	YES	26
		7	32.6	9	-	NO	YES	27
		7	72	8	120	YES	YES	28
		46	166.9	57	660	5	6	182
		6.57	23.84	8.14	94.28	.71	.86	26
29-34		9	21.2	8	60	NO	NO	29
		5	35	7	120	YES	YES	29
		1	-	9	100	NO	YES	31
		5	13.4	7	120	YES	YES	31
		6	42.6	8	120	YES	YES	33
		7	29	7	120	NO	YES	34
		33	141.2	46	640	3	5	187
		5.5	23.5	7.66	106.7	.5	.83	31.2
35-40	11	3	34	9	120	NO	NO	35
	12	7	1	8	100	NO	YES	35
	13	7	-	9	120	YES	YES	35
	14	8	46.7	7	120	NO	YES	35
	15	8	13.5	8	100	YES	YES	36
	16	5	.7	7	120	NO	NO	36
	17	9	37.2	7	120	YES	YES	37
	18	9	26.7	8	120	YES	YES	37
	19	7	80.4	8	120	YES	YES	37
	20	7	107.2	7	120	YES	NO	37

Table 5 (Continued)

Card-sort Scores	Subject No.	V_1 1.2	V_2 1.3	V_3 2.2	V_4 2.3	V_5 3.2	V_6 3.3	V_7 Card sort
35-40 (cont'd)	21	7	65.3	9	120	YES	YES	38
	22	8	35.2	9	120	YES	YES	38
	23	6	32.8	9	100	YES	NO	38
	24	8	36.8	7	120	YES	YES	39
	25	8	21.4	7	120	YES	YES	39
	26	7	14.5	8	120	YES	YES	39
	27	6	23.4	7	60	YES	NO	39
	28	8	48.8	8	120	NO	YES	40
	29	8	40.7	8	90	YES	YES	38
		136	584.6	150	1930	14	14	708
		7.16	30.77	7.89	101.6	.74	.74	37.3

Table 6

Means and Standard Deviations for

Low and High Scoring Groups on Five Dependant Variables

Variable 1: Level (1.2) "Willingness to Receive"

Group	No.	$\bar{x}$	S.D.
Low Scoring	10	6.00	2.11
High Scoring	19	7.16	1.42
Total	29	6.76	1.72

Variable 2: Level (1.3) "Controlled or Selected Attention

Group	No.	$\bar{x}$	S.D.
Low Scoring	10	14.70	18.28
High Scoring	19	35.05	27.20
Total	29	28.03	25.63

Variable 3: Level (2.2) "Willingness to Respond"

Group	No.	$\bar{x}$	S.D.
Low Scoring	10	6.30	2.26
High Scoring	19	7.89	0.81
Total	29	7.34	1.60

Variable 4: Level (2.3) "Satisfaction in Response"

Group	No.	$\bar{x}$	S.D.
Low Scoring	10	120.00	0.00
High Scoring	19	112.11	15.84
Total	29	114.83	13.03

Table 6 (Continued)

Variable 7: "Card-sorting. SWAIT Concept"

Group	No.	$\bar{x}$	S.D.
Low Scoring	10	20.70	2.00
High Scoring	19	37.26	1.59
Total	29	31.55	8.05

VITA

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Title of Thesis/Dissertation

"THE EFFECTS OF TYPE OF FEEDBACK UPON A LEARNER'S AFFECTIVE BEHAVIOR"

Author [redacted]
Signature

[redacted]
Name

Aug 30th 1976
Date

Figure 1

AFFECTIVE DOMAIN

MULTI-DIMENSIONAL ASPECTS OF GROWTH OF "INTERNALIZATION"	# LEVEL	TAXONOMY CLASSIFICATION	BRIEF DESCRIPTION OF LEVELS	EXAMPLES OF INFINITIVES	EXAMPLES OF NOUNS	EXAMPLES OF INSTRUCTIONAL OBJECTIVES	EXAMPLES OF TEST QUESTIONS
(Extrinsic) (Motivation) Little or no "Emotion" at lower levels	1.0	Receiving (Attending)		Attends, Looks	Sight, sounds, events, models, designs, lectures materials, learning principles		
	1.1	Awareness	1.1 The student should be "conscience of" the situation or phenomena. There can be awareness without specific discrimination or recognition of the objective characteristics of the object.	Listens		1.1 a) The student will look at the textbook for the course of instruction b) Given a record the student will play it and listen to it c) Presented with a picture of the Mona Lisa the student will look at it	1.1 a) From a group of textbooks the student will be asked to select the textbook for his course b) From a group of three records played, the student will tell which one he was listening to c) Present the student with three entirely different pictures but one being the Mona Lisa. The student should be able to tell you which picture he was shown during instruction
then	1.2	Willingness to receive	1.2 The student should be willing to tolerate a given stimulus, not to avoid it.			1.2 a) When requested to listen to Beethoven's Fifth Symphony the student will listen to the whole performance b) On a guided tour of the Museum the student will listen to the guide or docent and not turn away from them	1.2 a) On the items below underline one of the three letters after the item: L if you would like to do what the item says I if you neither like nor dislike what the item says O if you dislike what the item says i) Listen to a record of a rock group. ii) Listen to National Anthem. iii) Listen to Beethoven's Fifth Symphony. iv) Listen to a jazz concert. b) Answer "Y" for yes, "U" if you are uncertain about the question and "N" for no: i) Can you tour the Musuem without becoming bored? (Y) ii) Would you consider attending another session at the Museum? (Y) iii) Do you think trips to the Museum are dull? (N)
	1.3	Controlled or Selected Attention	1.3 The student should be controlling his attention so that the favoured stimulus is selected and attended to, despite competing and distracting stimuli.			1.3 a) After the student has been presented with several poems of divergent mood, the student will be able to attend to the metre and explain in his own words the differences in metre between the poems b) After a lesson on adjectives, the student will be able to attend to them, when listening to a story read aloud, so that he can write down those adjectives he hears in the story	1.3 a) From three poems of different mood, two with anapest rhythm and one with trochaic rhythm, ask the student which one is different in rhythm from the other two. b) A new story will be read to the class. They will be requested to write down at least ten adjectives that they had heard in the story, giving a reference to the adjectives place in the story in their own words.
	2.0	Responding		Complies with, follows directions, obeys	directions, laws, instructions, policies, deadlines.		
"Emotional" build-up	2.1	Acquiescence in responding	2.1 The student has made the response but has not fully accepted the necessity for doing so.	Performs, plays, practices.	instruments, games, dramatic work.	2.1 a) The student will read the assigned course literature even if he does not know the value of the material. b) Upon request from his parents the student will take his bicycle in for a check up every six months.	2.1 A. Answer the questions below by placing an (X) in either the "Yes" or "No" column: a) Do you complete homework assignments? (Y) b) Do you complete your homework assignments in the morning just before the bell rings? (N) B. Answer "Y" if answer is "yes", answer "N" if answer is "no", and answer "U" if you are "uncertain" of the answer: a) Do you have your bicycle checked only when reminded to do so by an adult? (Y) b) Do you regularly attend local police bicycle safety clinics? (N)
	2.2	Willingness to respond	2.2 The student should be sufficiently committed to exhibiting the behavior that he does so, not just out of fear of punishment, but "on his own" or voluntarily.	Spends leisure time in, augments participates freely.	speeches, plays, presentations, writings	2.2 a) While studying a course in modern plays the student will read other modern plays and also those prescribed on the course of study. b) During the course of an historical unit of study, the student will participate in leisure time excursions to sites of historical interest.	2.2 a) In the selections below circle the "A" if the item is an activity that you do occasionally or frequently. Circle "D" if you rarely or never do that particular item. After these responses, reread the items you marked "A" and draw a circle round the "W" if you are interested in the item and do it willingly, or circle "U" if you perform it with indifference or because someone feels you should do it. A D i) Reading books of plays W U (A.W) A D ii) Attending local theatre productions W U (A.W) A D iii) Watching plays on television W U (A.W) b) After each of the following questions write "Y" if your answer is "yes", "U" if you are "uncertain" and "N" if your answer is "no": i) Have you visited historical sites other than those visited by the class? (Y) ii) If given the opportunity would you visit an historical site on your leisure time? (Y) iii) Is it unusual for you to spend out of school time gathering information of an historic nature? (N)
	2.3	Satisfaction in response	2.3 This is a feeling of satisfaction, an emotional response, generally of pleasure, zest or enthusiasm, beyond the behavior of voluntary response. It is hard to determine where exactly this occurs. "The category is arbitrarily placed at this point in the heirarchy where it seems to occur most frequently and where it is cited as or appears to be an important component of the objectives at this level on the "continuum." It could occur elsewhere.	Discusses voluntarily	information, principles, ideas, theories.	2.3 a) After instruction in Pythagorean theorem, and given a variety of games activities including Pythagorean puzzles and proofs, the student will ask to continue working with game and puzzle activities requiring ideas created by the Pythagorean theorem. b) Given the opportunity to read poems aloud in class, the student will offer to read one of his own selection.	2.3 a) After the lesson on Pythagorean theorem make available to the students several games and activities in which they have an option to participate. These will include games and activities involving Pythagoras' theorem, which they have been shown. By observing their choice, record the choice they have made. Optimum should be a request to play at games involving Pythagorean theory skills. b) The following incomplete sentences would be projected on a screen for a short period of time and the students would write down their reponses on numbered sheets provided: a) Poetry is __________ b) If I were a poet I would __________ etc.
	3.0	Valuing	3.0 "Behavior categorized at this level is sufficiently consistent and stable to have taken on the characteristics of a belief or an attitude. The learner displays this behavior with sufficient consistency in appropriate situations that he comes to be perceived as holding a value."	increased measured proficiency in, to increase proficiency/ probability of	group membership, artistic and musical productions, personal friendships, interactions, teaching.		
followed by	3.1	Acceptance of Value	3.1 "At this level we are concerned with the ascribing of worth to a phenomenon, behavior, object, etc. The term "belief", which is defined as the emotional acceptance of a proposition or doctrine upon what one implicitly considers adequate ground" (English and English, 1958 p.64), describes quite well what may be thought of as the dominant type of behavior classified.			3.1 a) Upon instruction on modern literature and George Bernard Shaw, the student will be able to produce a list of his extra curricular reading of material by or about G.B. Shaw. b) The drama student will be able to show by his timetable that he is participating in as many plays and productions as his time allows.	3.1 a) Write "Y" after the question if your answer is "yes". Write "U" if your answer is "uncertain", and write "N" if your answer is "no". i) Have you read the biographies of G.B.S.? (Y) ii) Have you made a comparison between "Pygmalion" and "My Fair Lady"? (Y) iii) After reading Pygmalion have you made a study of 19th Century working class conditions in London? (Y) iv) Do you know if anyone has claimed G.B. Shaw's reward for constructing a new English alphabet? (N) b) Give a written list of plays and productions in which you have participated in 1975 and another list for 1976.
	3.2	Preference of a Value	3.2 "Behavior at this level implies not just the acceptance of a value to the point of being willing to be identified with it, but the individual is sufficiently committed to the value to pursue it, to seek it out, to want it.	assists, helps	artists, projects, viewpoints, arguments.	3.2 a) Upon instruction on the art of Lautrec, the student will search for and obtain copies of Lautrec's artistry. b) After a course in laboratory techniques and upon lab assistenships being made available, the student will ask to assist in the science lab and help in the promotion of the upcoming science fair.	3.2 a) The student will keep a record form of the location and references of the art work of Lautrec, and the time tally the student spent in his search. b) A record will be kept of time spent in science lab projects and the work done in preparation for the science fair.
	3.3	Commitment (conviction)	3.3 Belief at this level involves a high degree of certainty. The ideas of 'conviction' and 'certainty beyond a shadow of a doubt' help to convey further the level of behavior intended. In some instances this may border on faith, in the sense of it being a firm emotional acceptance of a belief upon admittedly non rational grounds. Loyalty to a position, group, or cause would be classified here.	debates, denies, protests, argues	deceptions, irrelevancies, irrationalities, glib responses.	3.3 a) In a course on racial equality the student will devote his time and efforts to the improvement of racial and religious equality by writing articles about it and debating the question in class forums. b) In a course on Human Rights the student will avail himself of all opportunities to debate the question in class, and will write to his member of Parliament stressing the need for abolition of capital punishment in Canada.	3.3 a) Write "A" if you "agree" with the whole statement, write "U" if you are "uncertain" about the statement, and write "D" if you "disagree" with the whole statement. i) Black and white students should eat at segregated lunchroom tables. (D) ii) Jewish and non Jewish students should not have dates with each other. (D) iii) A capable black student would make as good a president on student council as a capable white student. (A) b) After each of the following activities write "A" if you perform the activity occasionally, or frequently, and "N" if you never perform the activity. i) Attend public meetings related to the issue of capital punishment. (A) ii) Take part in debates on capital punishment. (A) iii) Study the debates in Parliament which have dealt with the issue of capital punishment. (A) iv) Have written to member of Parliament stating my views on capital punishment. (A)
Lessening of "emotion" as behavior becomes automatic and internalized	4.0	Organization		Theorizes, compares;	codes, goals, standards;		
	4.1	Conceptualization of a Value	4.1 "At this level the quality of abstraction or conceptualization is added. This permits the individual to see how the value relates to those that he already holds or to new ones that he is coming to hold. Thus the concept represents knowledge that is not directly perceived through the senses but rather results from manipulation of the sensory impressions in abstract form."				
	4.2	Organization of a Value System	4.2 Objectives properly classified here are those which require the learner to bring together a complex of values, possibly disparate values, and to bring these into an ordered relationship with one another. Ideally the ordered relationship will be one which is harmonious and internally consistent. The relationship is better described as a kind of dynamic equilibrium which is, in part, dependent upon those portions of the environment which are salient at any point in time.	Balances, organizes, defines, formulates;	systems, approaches, criteria, limits;		
	5.0	Characterization of a value or Value Complex					
	5.1	Generalized set	5.1 The generalized set is that which gives an internal consistency to the system of attitudes and values at any particular moment. It is selective responding at a very high level. It is sometimes spoken of as a determining tendency, an orientation toward phenomena, or a pre-disposition to act in a certain way. These behaviors have been practiced so long that they are virtually devoid of affect in general usage; some indeed are practiced unconsciously.	Revises, changes, completes, requires, modifies;	plans, behaviors, methods, instructions, efforts, practices;		
(Intrinsic) (Motivation) Abstract Complex	5.2	Characterization	5.2 This, the peak of the internalization process includes those objectives which are broadest with respect both to the phenomena covered and to the range of behavior which they comprise. Thus here are found those objectives which concern one's view of the universe, one's philosophy of life, one's 'Weltanschauung' - a value system having as its object the whole of what is known of knowable. The objectives are so uncompassing that they tend to characterize the individual almost completely.	rated high by peers, superiors, & subordinates in;	humanitarianism, ethics, maturity, integrity.		