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I am submitting herewith a dissertation written by Belva Bise Holleman entitled "The Motivational Effects of Various Display Techniques on Book Selection of Elementary School Children." I recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Education, with a major in Curriculum and Instruction.

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THE MOTIVATIONAL EFFECTS OF VARIOUS DISPLAY TECHNIQUES
ON BOOK SELECTION OF ELEMENTARY SCHOOL CHILDREN

A Dissertation
Presented for the
Doctor of Education
Degree
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Belva Bise Holleman
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ABSTRACT

The purpose of this study was to determine the effect of various display techniques used in the school library on student book selection. The study also examined the recall time of various display techniques and the relationship of display technique preference to grade level of the pupils.

A survey of 550 students in grades 1 through 6 in Rocky Hill School, Knoxville, Tennessee, was taken to determine technique preference and display recall using recall as a measure of interest. The survey was also used to determine book selection as related to display technique. An interview of a stratified random sample of the students was used to supplement the findings. A special study was designed to determine if there was a significant difference on book selection for third and fifth grade students as related to display technique. Using the chi square and analysis of variance statistical procedures, it was found that there was a significant difference and three dimensional displays were more effective motivators of book selection.

The data indicated that realia collections were most effective in evoking interest, however, there did not appear to be a relationship of preference to grade level. The live animals, an unmodified realia collection, were most preferred display by students. Other realia collections were also identified as being important to students' book selection and interest. It appears that student-made projects evoke much student attention. Bulletin boards are more readily recalled for

a longer period of time than other displays, however, high interest and personal involvement are necessary cues for the recall. Children's interests and current affairs are important in motivating book selection and play an influential role in display effectiveness.

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CHAPTER I

INTRODUCTION

I. INTRODUCTION

The principal professional goal of elementary school librarians is to bring children and books together for a lifelong encounter. Librarians are aware that reading habits begun in childhood set the pattern for the reading habits of adulthood and can stem from motivation or a desire to begin a particular reading activity. Moreover, the development of positive attitudes and interests is a primary means of affecting those reading habits. Encouragement and guidance are necessary for elementary school children to reach their potential in reading for fun and personal growth. Recreational reading has gained importance with the current emphasis on personal development through reading. Children read what they are interested in reading and they generally reach their peak in voluntary reading between the ages of ten and thirteen.

Book selection is made from the wide array of materials assembled in the school library. The school librarian is present to stimulate and make available the ever expanding and fascinating field of children's literature. In order to develop students' positive attitudes about reading, the librarian strives to create an environment in the library through the use of visual display which will encourage and motivate them to read library books.

The wise use of displays represents sufficient evidence that displays have been accepted as valuable educational techniques, although little discussed in depth. It is postulated that children learn more and remember longer as a result of their use and, because they attract attention, displays also concentrate the interest of the viewer. According to marketing and advertising thinkers, interest plays a vital role in all of man's activities. This appears to be also true in the case of school children. With the development of the psychology of learning came the "doctrine of interest" which stressed the idea that intrinsic motivation which appeals to children's interests will encourage children to voluntarily spend time in an activity that intrigues them. A worthy motivator or inciter is always based on interest. However, interest is not an end in itself but a means to growth and development. By creating a proper attitude, interest guarantees attention and this paves the way for "activity leading to further activity" (McKowen and Roberts, 1940). Interest developed to its highest degree spells reflective thinking. Educational theory recognizes the importance of children's interests. Thorndike (1911) said "the problem of interest in teaching is not whether the children shall learn with interest or without it, they never learn without it, but what kind of interest it shall be, and from what the interest shall be derived."

Library displays are used to cultivate or excite reading interests as well as influence reading decisions and improve reading attitudes. They cover a broad range of techniques from simple bulletin boards to larger comprehensive displays which may include three dimensional

groupings. It is surmised that these displays will not only provide visual impact but can provide direct sensory experience which is motivational.

Because of the wide range of options and resources, the librarian is presented with the dilemma as to which visual display technique is most effective as a motivator. The pressure of a multitude of duties which calls for the librarian's attention leaves little time to squander on displays which do not communicate the desired message of reading motivation and which are not suitably interesting to elementary school children to attract their attention.

Few librarians have had formal training in the art of display or the strategy of motivational advertising, yet space is provided in most school libraries, mainly in the form of bulletin boards with the intent that they be used. Library and audio visual textbooks make mention of the motivational qualities of bulletin board displays and offer a few pages of helpful hints. There is a wealth of idea books which state that bulletin boards have educational importance and many professional magazines devote columns to catchy captions. Educational supply houses provide kits and materials for motivational visual displays, mainly in the form of letters for captioning and seasonal and thematic cut out figures. Publishing houses send out quantities of bulletin board display materials each year to support the theory that library displays are a necessity for motivating children to select and read books. In his book, James A. Smith (1973) said, "there are more means of communication than any other time in history, however, these devices for communication

make it easier not necessarily more effective." Most library displays are created on the assumption that because students are bombarded continuously with visual presentations from television, magazine advertisements and highway billboards successfully urging them to buy something or do something, the same techniques will work for reading and book selection.

Less often seen in the library display regime is the three dimension groups, such as dioramas, display cases and sand table exhibits. These displays consist of small objects usually dealing with a subject or concept, which are not to be fastened to a background and can be handled by the viewer. The idea behind such a display in the library is much the same as that of store window or point of purchase displays in that they create an association. For example, a small glass shoe brings to mind the story of Cinderella.

Another type of display used in some libraries is one which features collections, of both modified and unmodified realia, and mockups. This is a museum approach using large groups of objects, specimens or models, displayed as a unit. The theory behind their use is to inform as well as intrigue. Realia uses unmodified real objects which are part of the environment, except for having been removed from their original real life surroundings. They may operate, work or be alive and are of normal size. Mockups, on the other hand, are a simplified representation of a real thing, constructed to highlight essential parts of functions of the real thing. This form of display uses vicarious experiences as its motivating vehicle.

Still another type of display used in the school library is one which utilizes book covers by standing books on their ends with covers exposed. This type uses any small space on the shelves or on top of cabinets, tables or bookcases. It copies the supermarket technique which couples visibility and availability. It is by far the most economical and quickest type of display but one that is rarely mentioned in professional periodicals because it is so simple.

II. THE PROBLEM

Displays have been used to communicate feelings and ideas, to teach, or to create a learning environment from the time of cavemen. A great number of the educational studies treat school library displays as a decoration. Although decoration contributes to the learning environment, which is important, the principle function of school library display should be educational. Only effective display will serve its educational function. Garvey (1972) points out that "many teachers with no artistic aptitude and no training in techniques can spend hours on a display which turns out badly and has little if any educational value, . . . however, effective displays can be of tremendous value to both teachers and students and learning to design them is a useful and necessary part of a teacher's education." The wide range of visual displays requires vastly different techniques. Little is known as to the effectiveness of the various techniques or to the effectiveness in reaching established educational goals for elementary school children and there is a need to know.

III. PURPOSE OF THE STUDY

The purpose of this study was to determine which of the most commonly used library display techniques is more effective in motivating children to select books to read, which of the display techniques is most effective in evoking interest and to determine if there is a relationship of preference to grade level and which of the display techniques is remembered for a period of time.

IV. THE HYPOTHESIS

The researcher holds the hypothesis that direct experience with three dimensional displays such as sandtables, collections of modified realia and collections of unmodified realia, have greater motivational effect on school children's book selection and provide greater memory retention than do bulletin boards and other two dimensional visual presentations. It is also believed that there is a motivational effect of displays which is related to the grade level of the student.

V. LIMITATIONS OF THE STUDY

The population from which the sample was drawn included only those pupils enrolled in a single school in the Knoxville City School System.

The displays were created by the librarian who also determined if the criteria developed by authorities in the various display techniques had been met.

VI. DEFINITION OF TERMS

Modified realia. Models or reproductions of real things.

Model—a duplicate of the real object in every respect except size.

Diorama—a three dimensional scene incorporating objects, figures and background in perspective.

Sand table—a table which has sides which are several inches high to hold sand or other loose material which can be molded into landscapes.

Mockup—a three dimensional device which suggests an imitation of a real object. It has some fundamental elements of the real thing eliminated in order to focus attention on others.

Unmodified realia. Real things which are without alteration except for having been removed from their original real life surroundings. All segments are intact, may operate, or be alive and are of normal size and can be recognized for what they are.

Bulletin boards. A fiberboard two dimensional board on which notices and announcements are posted. Educationally, it is a teaching device using visual communication to express an idea or concept.

VII. THE DESIGN

This study was conducted using 550 students in grades one through six at Rocky Hill Elementary School, Knoxville, Tennessee. A three part design was used.

Part I utilized a survey instrument designed for grades three through six which was administered to each student to determine which

library display motivated him or her to select a specific book, what type of display was liked best and what bulletin board designs could be remembered. Students in grades one and two were asked to draw any display they had seen in the library and which they liked. These students were asked to work independently in the library which had no displays in evidence during that time.

The use of awareness of display, recall of display and attitudes toward displays is the method of evaluating the effects of display. This is the method used to evaluate the effectiveness of advertising.

Part II consisted of a personal interview with students in grades one through six selected through random sampling to determine what specific displays were liked and disliked, what books were selected because of a specific display, how long the student had attended the school and whether the student most likely selected a book because of something he or she observed on a bulletin board, an opensided diorama or book covers.

Part III of the design involved the four third grade classes and three fifth grade classes in two separate but similar studies. The classes had their book selections tabulated using circulation figures as they related to a specific display situation. Three display techniques were used on three literature themes which are universal in interest at the third grade level. The same procedures were conducted for the fifth grade using literature themes suitable for that grade level.

The three display techniques used are: (1) books only displayed on tables with cover picture visible; (2) books plus a correlated

opensided diorama, a three dimensional grouping, situated on a tabletop and (3) books plus a correlated bulletin board using bookjackets, caption, and an appropriate figure and executed according to the established criteria for good bulletin board design.

Using a Graeco Latin square design, three of the third grade classes received each of the three display treatments alternately and the fourth third grade class received none and provided the control sample. This means that the control group had no books displayed, tabletop exhibit or bulletin board display in the library. All classes had the same literature topic introduction which was a customary procedure. Each week a different literary theme based on an universal reading interest for the grade level and an accompanying selection of books was collected and utilized.

Display Treatments

Class	Week 1	Week 2	Week 3
A	Bulletin Board/books	Books only	Tabletop/books
B	Tabletop/books	Bulletin Board/books	Books only
C	Books only	Tabletop/books	Bulletin Board/books
D	None	None	None

This study was similarly repeated at the fifth grade level without the control group. Literature themes of interest and correlated displays were used alternately.

An analysis of variance (after determining the means and the standard deviation for bulletin board/books, tabletop/books and books only) was utilized to check for significant differences. The time period for Part III was three weeks.

VIII. SUMMARY

Chapter I has presented the statement of the problem, the purposes of the study, the limitation of the study, definition of terms, the hypothesis and the method of procedure.

Chapter II presents a review of the literature related to this study. This chapter is divided into sections dealing with various areas of advertising, communication, audiovisual techniques and education research, including learning motivation and reading interests.

Chapter III describes the procedures used in gathering the data.

Chapter IV presents an analysis of the data and the findings.

Chapter V concludes by summarizing the findings and presenting conclusions.

CHAPTER II

REVIEW OF RELATED LITERATURE AND RESEARCH

I. INTRODUCTION

School library display provides a bridge between the student and books. It is a parallel to the seller-buyer relationship in that it encourages the viewers to interact, relate and respond in a positive manner. To ensure such involvement, school library displays must be relevant to students' needs, interests and abilities.

The review of related literature is divided into four major sections. Section I considers library displays and their motivational effectiveness. Section II deals with advertising research in three main relevant areas: marketing communication, client behavior and motivation. Section III discusses literature related to the effectiveness of various audiovisual techniques and Section IV deals with research related to children's reading interests.

II. LIBRARY DISPLAY

Library display has two principal purposes, to create good will and to advertise the library product. The creation of good will is extremely important because the holdings of a library have little value if they go unused. Lucile Fargo (1947) states that the aim of display in the school library is to advertise the library product, books.

In the commercial world, display is a highly specialized technique whose roots go back into the mists of time when emblems were used to advertise goods or services to a nonreading clientele. Barber poles, inn signs or three golden balls all were early visual advertisements signifying medical services, food and shelter and money lending. The technique of display, however, is a development as recent as 1925 when the Exposition of Decorative Arts was held in Paris. This was a significant advance in commercial art displays. After the depression and before World War II, three more exhibitions were held in Paris and New York giving greater impetus to the art of exhibition design. Now, in the world of marketing, display is no longer considered artistic frou frou but a vital part of the technique of selling. This technique of selling is of vital interest to libraries for they are in the business of selling book usage, communicating information and fostering goodwill.

Library display has been called the library art in contrast with library science. However, library displays must have the firm footing of educational research and valid educational goals if they are to be effective. Though the display may appeal to intangibles of imagination and emotion, they must have a relationship with the total educational picture. Garvey (1972) in *Teaching Displays* points out that library display fulfills three specific functions (1) direct educational function (2) indirect learning and (3) aesthetic function. Direct educational function operates in four ways. It introduces a subject, explains a subject, summarizes a learning experience and suggests a related area of study. Indirect learning involves group and individual contribution.

The aesthetic function exposes students to good design which helps in the formation of artistic taste.

Displays are receiving more attention as part of a range of nonbook educational materials called visuals. According to Garvey (1972), these visuals have many values but most often mentioned is that they make learning more interesting, help make it more permanent, extend the boundaries of experience, provide a common basis of experience and stimulate individual action.

Educational Motivation Research

Learning is dependent upon motivation according to many educational researchers. Motivation is not only a significant factor, it is also basic in methodology and management. The purpose which method and management serve is to provide incentives, activities and surroundings which will be conducive to learning. The term "motivation" is frequently used in educational writings and though many definitions are given, the meaning is anything which initiates, sustains and directs activity. Educational motivation means stimulating the intention or moves the pupil to activity. The purpose of motivation is to arouse interest, stimulate desire to learn which leads to effort and to direct those interests and efforts toward the attainment of definite goals. Motivation is a teaching procedure and should be part of every learning situation.

The problem of motivation is to find a way of stimulating students in a natural and interesting manner and direct their interests and

efforts in worthy channels. This involves the finding of adequate motives and sufficient guidance and direction for those interests and efforts that are around. Interest is a primary and fundamental source of motivation. It has been defined as a "pleasurable feeling" produced by an idea or object with power of attracting and sustaining attention. It involves selective attending and the attitude or feeling that an object is of concern to the individual. It is the means by which the mind is attracted to an object and is an important factor in the acquisition of knowledge. Interest secures economy in learning and efficiency in response since it implies a favorable disposition toward an object. Developing interest through motivation does not mean mere entertainment but implies sustained voluntary attention.

Because the child's interests are a very important source of motivation it is essential that the librarian know and utilize interests in reading. Children during the school age pass through a series of changes in interests and in capabilities. It is important to identify the characteristics of the different periods in order to be able to use the proper method of guidance and direction in keeping pace with the changes in interests and capabilities.

Sources of motivation may vary greatly. They range from sensory objects to ideals. In general, the sources upon which motivation depends may be said to be intellectual, emotional and social in nature.

Educational motivation studies are generally focused around the effectiveness of various types of incentives, behavior modification, competition, etc., however, no studies were found to determine the effectiveness of display as a motivational device.

III. ADVERTISING RESEARCH

The field of advertising has begun to produce a sizable body of research which bears a relationship both in content and methodology to library display. The development of scientific techniques in attitude measurement has led to the development of knowledge of the advertising process. Empirical studies have identified patterns of behavior which can be observed and studied.

Advertising research is divided into three main areas: (1) marketing communication research, (2) client behavior and (3) motivational research. Marketing communication studies the advertising message through various media; television, magazines, billboards, window display, and measures its effectiveness. The goal of communication research is to identify the conditions under which media influence can affect the information levels, attitudes and behavior of the message recipients.

Client behavior work is designed to study the interaction between the customer and advertising while motivational research is a phase of marketing research which attempts to relate behavior of clients to a particular advertising situation. It differs from client research which only describes the behavior of people by relating the behavior to underlying processes. The three areas, however, tend to overlap because of their interrelatedness, making clearcut boundaries impossible to define.

Marketing Communication Research

Advertising is part of the communication process. It is a means by which firms try to stimulate favorable responses from consumers.

Media advertising attempts to do this by projecting through media a favorable image and concept that is likely to stimulate a favorable response. Each advertising medium has its own characteristics. The structure, cost and value vary but it has as its goal persuasive communication. It is part of a complex promotional process. Much research has been devoted to trying to identify the conditions under which the media influence affects information levels, attitudes and behavior of clients.

Media and individual relationship is a two way process. Early studies to measure media/individual relationship were undertaken by Walter Scott in 1903. He used a random sample of citizens riding street cars to determine if they could recall advertising located on car cards. In the late 1920's, Dr. George H. Gallup devised a procedure to measure the readership of advertising in newspapers. He also utilized recall as his research technique. In 1922, Daniel Starch developed the readership testing technique called the "recognition test" in which respondents were asked to recall enough of an advertisement to enable them to know the product. Criticism of this was based on the assumption that attentional value of advertisements did not measure the value of the advertisement in selling the product. Sales were used as the criteria for effectiveness. Starch later created the Starch Advertisement Readership Service which attempts to measure the extent to which readership of an advertisement influenced the reader to buy the product. This was done by ascertaining the percentage of readers and nonreaders of an advertisement who had bought the product within a certain number

of days prior to the interview. The difference between the percentage (when corrected for greater readership of advertisements about a product by those who are interested in and loyal to it) measured the effectiveness of an advertisement in stimulating the purchase of the product by the reader.

Another form of recall test, "triple associates" was developed to test effectiveness of a campaign rather than individual advertisements. Respondents were asked to respond to a theme or slogan. As the advertising budgets increased, so the effectiveness and measurement studies increased to determine the sales/advertising relationship and its cumulative effects.

Krugman (1975) studied the consumer response to an advertisement for a known product and an unknown product. He found that consumer response could be grouped into three categories: (1) What is it? A typical response of a consumer to the first perceived exposure to the advertisement; (2) What of it? A typical response when the consumer's recognition of the advertisement allows him to consider the relationship of the product with himself; and (3) Oh yes! A response when the consumer has recognized a relationship with the product to himself and further exposure to the advertisement serves as a reminder. He found that consumers might not move from one stage to the next with each successive exposure to advertisement and numerous exposures could obtain the same response. Just as consumer response to advertisement is affected by familiarity of the message, so experience with the product affects response. These responses, rejection, brand loyalty, product

loyalty coupled with information response become the consumer market structure. Just as consumers in the various consumer market segments vary in their likelihood to purchase, various sources of information are more influential in motivating purchasing action for different segments. Advertising, word of mouth and personal experience are major sources of information.

One of the concerns of advertising researchers has been the cumulative effect of advertising and a sizable body of econometric studies has been produced. Darral G. Clarke (1977) said that a major difficulty in trying to determine what the econometric research indicates about the durations of advertising effects on sales comes from the fact that researchers have tried to measure the effect of advertising emphasizing methodology. The little substantive content found in the literature generally was not directed at the duration question at all. One of the most commonly used econometric models which is applied to studies of advertising effect and cumulative advertising effect is the distributed lag model. Bass and Clarke (1972) and Koyck (1954) used it to show the measurement of the duration interval of cumulative advertising effects. In a partial adjustment model, there is an implicit carry over effect to advertising as well but the major difference is that not all the carry over can be attributed to advertising (Clarke, 1972; Houston and Weiss, 1974). In other studies using multiple regression on variables expressing some value of aggregate sales promotion effort over time by Palda (1964) and Tull (1965) have become classic.

In his survey of distributed lag models, Griliches (1967) discusses model specifications which has a reduced form similar to that of the Koyck model, but a drastically different structural form with very different implications about the duration of cumulative advertising effect, that current advertising affects current sales and there is a carry over effect which cannot be attributed solely to advertising. The conclusion is that advertising's effect on sales lasts for months rather than years as formerly supposed. Many early researchers claimed that advertising activities could be monitored for their effects on market performance and were usually measured by changes in sales levels. Little published material was found dealing with nonpromotion effects.

Mayer (1965) and Eldridge (1967) point out that promotional activity (advertising) is not a homogeneous entity as is assumed in econometric evaluation. In the case of media advertising, there are at least three components: message content (creative elements), method of presentation (media pattern) and the extent of display. Any of these could be changed reflecting a change in advertising. Only Buzzell (1964) in his study, took into consideration the creative content of advertising in a post display sales analysis of advertising effectiveness.

Bogart et al. (1970) conducted a study to measure the immediate effects of an individual advertisement on the purchase of the brand advertised along with associated measures of preference, recall, interest/involvement. Clients were interviewed thirty hours after receiving medium containing advertising. An analysis showed that advertising readership and sales are not related for early consumers

and that a single normally placed newspaper advertisement can quickly achieve measurable sales results.

One of the few studies dealing with non media promotion by Tuck (1972) examined whether non media promotions affect attitudes in a way that is measurable. His conclusion is that effects on attitudes could be measured and that they could be positive or negative.

Little conclusive evidence has been published on the measurement of individual component effects to measure the effectiveness of promotion in one medium. The use of more than one medium compounds the problem.

Client Behavior Research

There is a fundamental assumption that if one can understand why the clientele behave in a certain pattern, then presentation can be geared to serve those motivating forces. The study of motivation takes advertising research into the mainstream of psychological inquiry. It is especially valuable for discovery and identifying the subconscious or hidden attitudes, feelings and motives of the consumer. Motivation research in marketing starts from two premises: (1) people have certain needs they wish to satisfy, and (2) one of marketing aims is to satisfy those needs. Successful advertising uses the knowledge of those needs. It has been a major premise of psychological researchers that the main stimulus toward action is the satisfaction of needs. There are different approaches to the study of motivation.

Motivational Research

The best known approach to the study of motivation is that of Freud. His early theory of motivation held that the unconscious was

made up of unexpressed motives of which the subject was unaware. His theory was that there was a constant effort of the unconscious to express itself which was resisted by the conscious. Meeting the needs generated by the conscious was seen by many early researchers as a valuable aid to advertising. Jung (1923) and Adler in their work emphasized the importance of studies of the unconscious mind and its importance as a source of action.

Other researchers rejected the psycho-analytic theory and psychology was seen as the study of behavior rather than consciousness. The focus of interest is the stimulus-response relationship emphasizing the role of learning and habit. The behaviorist approach comes largely from the work of J. B. Watson. A study by Tolman (1959) emphasized the "needs systems" in the determining of behavior. The importance of goals and their attainment comes from a process of evaluation in expectations. These are important to products and their image. Success is a function of stating and meeting expectations.

The Gestalt approach rejects psychoanalysis and behaviorism and approaches the study of psychology as the total situation. It is argued that study of the parts or aspects of a situation is misleading. The organization of the individual's response to situations is at the hub of his or her behavior. Stimuli can have different effects in different situations. The individuals have needs and must come to terms with their environment. Maslow suggests that the individual follows a course of "self actualization." After certain basic needs, such as food, sleep, etc., are satisfied, the individual seeks ways to satisfy other needs and thereby creates a hierarchy of needs.

Theories of personality play an important part in psychological studies of motivation. The role of "self" in the determination of behavior has been the emphasis of many studies. Allport (1961) studied "personality" in its relation with others. His concept of personality is based on the role of individual traits. According to Allport, needs and motivation are determined by personality. Research in marketing endeavors to identify these personality traits and relating products and their presentation towards them. Howard (1965) stated that the S-R relationships studied by behaviorists form a basis for study of consumer behavior. He identified two types of drives which determine behavior, "innate" and "learned." Innate drives of hunger and thirst are fundamental stimuli-satisfaction and interaction with society produces learned drives. Consumers learn not only to respond to the drives themselves but to cues. The drives impel the response but the cues determine when, where and how the subject will respond.

Advertising to be successful must capitalize on drives and the subsequent learned behavior, appealing to both the drives themselves and the cues. The advertisement must capitalize on learned drives to persuade the consumer to discriminate in favor of a specific product. Cues are used to project the image of the product.

The field theory was developed by Kurt Lewin to apply Gestalt psychology to the study of motivation. He sees the consumer as a system made up of interacting subsystems. A process of interaction between subsystem and the environment creates a motivational pattern which causes him to view objects with positive or negative valence. They

attract or repel the consumer because they meet their needs. Clawson's study (1950) illustrates the value of this approach in marketing. The focus on the process of interaction brings out elements of purchasing behavior.

Allport (1961) saw the personality as the internal structure of the individual, accounting for individuality and motivations which could be detected in behavior. Researchers feel that there exists distinct personality types to whom advertising could successfully appeal. Evans (1959) studied the psychological and objective elements determining choice of cars from the point of view that cars reflect the owner's desired personality. He found personality attributes of groups of owners studied were a poor predictor of choice. Using his measure of personality and his sample, no evidence was found that advertising focusing on personality types would influence sales. Later studies supported his findings.

Motivational studies clearly show that consumer goods must meet and appear to meet needs. The promotion of the goods must make the buyer aware of how it serves their needs. The means by which the image of the product, projected by advertising can be geared into initial consumer behavior, is a major element in advertising research.

It is claimed that advertising which appeals directly to primary motives will be more effective than appeals to secondary motives. This idea stems from the belief that primary motives are largely biogenic, associated with body needs, while secondary motives are sociogenic and related to learned desires. Lund (1933) says "satisfaction of organic

and bodily needs is surely not the only condition motivating behavior. In addition, there are a number of other motives, usually called social, which exercise an important and determining influence."

Motivation is multiple and complex. A motive that is strong today, may be weak tomorrow according to researchers. In addition to motives, there are other variables which predispose consumers to try products, respond to advertisements and ignore others. These variables are attitudes, beliefs, habits and customs.

Attitude Research

Attitude research is used in marketing research to identify consumer behavior patterns. Attitude testing is considered a good predictor measure of consumer behavior. This relationship is considered unreliable, however, by Twyman (1972). In his article comparing St. James and Fishbein models of attitude and behavior his findings were that behavioral intention is a function of two components; attitude toward performing a specific behavior and what consumers think other people, whose opinion they respect, think they should do. Bogart (1967) in his studies determined that the more favorable attitude toward a product, the higher the incidence of usage. Wheatly (1969) postulated that consumers must learn all their attitudes. To understand how this happens and the extent to which persuasive communication influences both attitudes and behavior is of importance to advertising.

To be effective, advertising must produce a response among consumers. It must create favorable images and generate action but also has the basic task to transmit information. Much media scheduling and copy

research is geared to ensure that the consumer has an opportunity to be made aware of a product and its attributes. Starch examined the relationship between readership and purchase behavior. He found brand purchases of advertisement readers were significantly higher than those of nonreaders. Levitt (1967) in his study came to the same conclusion that awareness of product precluded a favorable attitude. The factors influencing these attitudes are highly complex. Advertising provides both information and cues to stimulate consumer choice between brands of products. It interacts with other aspects of the consumer's perceptual and attitudinal framework. Bird and Ehrenberg (1970) found that the proportion of current users of a brand with favorable attitudes was higher than among nonusers of a brand. Different levels and types of advertising did not produce changes in brand loyalty.

Transmitting information or attitudes has value in advertising only if it is turned into action. There is no agreement in and among researchers about the effect of advertising on sales. Many models have been suggested in an attempt to identify the nature of the interaction of attitude for the prediction of future effects. The complexity of the processes and the constantly changing conditions make most models insufficient and without theories of causal relationships. The very use of the model changes the descriptive situation.

Raw sales data can supply some indication of overall success of a marketing effort but its analysis is of limited value. Another source of market data is the consumer panel. A consumer panel is one in which buyers record their purchase behavior. This data supplies a basis for analysis of relationships of sales and total advertising effect.

Advertising Effectiveness Research

Research into total advertising effectiveness is classed in two categories, experimental investigations which range from "before and after" without control groups to elaborate designs and cross sectional analysis which deal with a measurement of variables over a period of time. Marketing tests and cross sectional do not always give adequate results because they do not take into account cumulative effects of advertising. The idea that the effect of advertising is spread over time is not new. Studies by Palda (1964) show that a "lagged" effect or indirect action copy is aimed at building up brand associations which will ultimately lead to purchase. The question of how long advertising lasts seems to imply the question of what particular effects of advertising may last in the consumers cognitive structure for varying lengths of time. Estimates of advertising carry over may vary and the processes by which carry over occurs are controversial. Krugman (1975) contrasts two views of human attention, perception and retention of communication effects. Some evidence suggests what he calls a "hard in/easy out" model which says that attention requires effort, perception mediates selection for short term or long term memory, and rapid forgetting means failure to get into perception. Although this model is prevalent with advertisers, Krugman suggests that evidence exists for a "easy in/hard out" model. In this model there is selective perception and much input to an easy retrieval from memory, later associated stimuli can trigger stimuli stored.

Communication effects have been viewed as occurring as a "hierarchy of effects." McGuire (1968) stated that attitude change is a link in a six step communication process: (1) exposure to communication attempts, (2) attention to that attempt, (3) comprehension of the conclusions being urged, (4) yielding to that conclusion, (5) persistence of that yielding, and (6) behavior consistent with the acceptance. McGuire believed that the first three steps were necessary for any short term attitudinal effect to occur and all six must occur for delayed behavior. Watts and McGuire (1964) and Ray et al. (1973) used a similar hierarchy as a starting point for a model for analysis of carry over effects of communication. Their conclusion was that communication affects learning, attitude and behavior and that various message factors influence the carryover such as fear, appeal or familiarity with brand.

Information processing involves the interaction of personal factors and cognitive responses as they occur in response to communication. The particular kinds of cognitive processes by which communication effects may carry over for varying lengths of time go beyond the comprehension or attitudes effects as individuals may differentially recall message content. Such cognitive response is influenced by the content and structure of the memory related to message. Also, personal factors such as intelligence, preconceived ideas will influence messages or aspects of messages. Interviewing activities following exposure to message can influence carry over effects as well.

Learning Retention Research

Much has been written about retention of learned information. One of the first researchers was a German, H. Ebbinghaus who in 1885, employed lists of nonsense syllables using himself as the subject. His findings were (1) a negative accelerated forgetting curve; after twenty minutes he forgot one-third of what he had learned, twenty-four hours he forgot another one-third, six days another one-fourth of the remainder and one month later one-fifth of the remainder, and (2) serial position effects forgetting, items at beginning and end were more easily learned, while the middle was learned more slowly and forgotten easily, and (3) over-learning, repeating beyond the point of retention made very long conscious memory possible. Ebbinghaus' results have been replicated many times and other researchers found that the estimated level of retention depends on the particular measure of learning. Estimates of retention are lowest if measured by unaided recall, intermediate if some relearning and highest, if by recognition (Postman and Rau, 1957; Greenberg and Garfinkle, 1962). The most prevalent explanation for the decay of learned information is the interference theory of forgetting. Most contemporary learning researchers believe that interference is the only mechanism underlying memory loss. Other researchers believe that time alone accounts for retention losses.

Some evidence supports the theory of initial information processing and its relation to retention. Greenberg and Garfinkle (1962) studied the recall of thirty-six magazine articles. Measures of recognition, unaided recall and correct content identification were taken. The

authors speculated that there was a high correlation between the amount of recall and highly interesting articles. Such interest may indicate more active attention and internal processing which leads to more permanent retention.

In addition to the research on processing underlying differences in individual learning retention, much research has examined various factors which affect the rate of learning and retention. Many variables which were isolated are meaningfulness of stimuli (Underwood and Schultz, 1967), similarity of items (Underwood and Ekstrand, 1967), past subjects experiences (Underwood, 1957) and time viewing stimuli and spatial size of the advertising message (Underwood, 1957). However, variables do not appear to produce in retention when degree of original learning is equated. The most important variable is the level of original learning itself (Underwood, 1964). Another pertinent observation is that processes occurring right at and immediately following the time of exposure and attention to a communication are important to the differences in retention.

Communication researchers have focused considerable attention on attitude change phenomena. They hypothesized that some delayed attitude effects may occur because of conscious or subconscious internal processing of retained information. Other more active interviewing activities could account for differences in persistence of attitudinal effects. A most important interviewing activity affecting attitude persistence is the lack of viewer involvement (Krugman, 1965). In such uninvolved situations as exposure to a persuasive TV commercial most or all of

the measurable perceptual and attitudinal effects are likely to decay. Krugman gives measures of cognitive responses he calls "personal connections" or the number of personal references a viewer finds between his own life and the advertisement.

Krugman (1965) said "the significance of conditions of low or high involvement is not that one is better than the other, but that the processes of communication impact are different." That is, there is a difference in the change processes that are at work. Thus, with low involvement one might look for gradual shifts in perceptual structure, aided by repetition, activated by behavioral choice situations and followed at some time by attitude change. With high involvement one would look for the classic, more dramatic and more familiar conflict of ideas at the level of conscious opinion and attitude which precede changes in overt behavior.

It is assumed in communication research and advertising effects models that the two are related, acquiring and retaining some information from a communication is thought to be necessary for an initial and persisting attitude change. Understanding the relationship is important. For example, one reason marketers repeat advertising is to increase learning which in turn is assumed to be related to increasing and maintaining attitude changes. Learning measures such as ad recall, are taken as criteria for advertising effectiveness. The issue, however, is whether retention is related to attitudes which leads to consumer action or whether learning decays but attitudes persist. There are four views of the relationship between learning and attitude change found in the literature. They are:

1. Learning and attitude change are directly related.
2. Learning and attitude change are indirectly related.
3. The relationship depends on subsets of messages.
4. The relationship depends on receivers' cognitive responses during communication.

Miller and Campbell (1959), Insko (1964) and Wilson and Miller (1968) found that when a second message was given a week after the first, followed by immediate measurements, there was a positive relationship and a negative relationship when measure was delayed. There was significant correlation between content recall and immediate attitude change. Indirect relationship studied by Watts and McGuire (1964) found that recall and attitude change are functionally dependent. When recall decays, attitude stops. This view was also supported by Miller and Campbell (1959). A third view of the relationship between learning and attitude found the relationship depends on subsets of message and is consistent with Watts and McGuire's findings (1964) in which they found that only some parts of messages are relevant to persuasion. Learning and attitude change depend upon learning and yielding to cues in messages. These cues are part of the broader persuasion process. Researchers have focused on learning of arguments and learning of message conclusions as message subsets which mediate the learning attitude relations. Watts and McGuire (1964) and Wilson and Miller (1968) studied opinion change and found that repetition has an impact partly because it contributes to less rapid decay of arguments. Cook and Wadsworth (1972) found repetition of a conclusion sufficient for attitude persistence but only when linked by subjects to social support.

Recipient generated cognitive response hypothesis holds that the underlying process linking learning and attitudes involved thoughts generated by the recipient during the communication. The "cognitive response" included arguments and curiosity. Greenwald (1968) advocated that there is a shifting of attention from retention of message content to retention of cognitive reactions to the message. Aderson and Hubert (1963) found that attitude change due to message exposure varied from what recall of message content would logically indicate. It was their feeling that impression and verbal content memory are quite distinct. Three studies, Greenwald (1968), Calder, Insko and Yandell (1974) and Wright (1974b) directly measured cognitive responses both immediately and after a delayed time interval to gain insight into the temporal processing of cognitive responses. They found that the number and direction of message arguments influenced the types of cognitive responses and were highly related to both immediate and persisting attitude change. Krugman (1975) argues that the more cognitive responses solicited by advertising, the more likely it is that the "easy in/hard out" model applies. He postulated that a response measure of "connections" of the advertising content to the exposed person's self experience would be highly related to any successful influence attempt. This premise was supported by Bogart, Tolley and Orenstein (1970). The general consensus is that retention is a key mediator of attitudinal persistence.

There is little evidence regarding the effects of different media on persistence of communication. Krugman (1975) believed that print

media is more enduring due to the fact that it required more consumer involvement than broadcasting. Preston (1970) found evidence of more connection in cognitive responses to print messages. This finding concurs with those of Bogart, Tolly and Orenstein (1970). Wright (1970) found significantly more cognitive responses for print than for radio, however, there appears to be a delayed reaction.

Format and Creativity Research

Advertising format also can play an important element in retention. Some are more memorable than others. One area of controversy in advertising concerns the effectiveness of "soft sell" and "hard sell." Soft sell is low keyed, humorous and pleasant, containing implicit claims that must be grasped by the audience. Hard sell is forceful and driving a claim at the audience. Krugman (1962) feels that soft sell would not wear out from repetition as fast as hard sell. One aspect of soft sell involves pleasantness of the message. Pleasant messages especially humorous ones, facilitate opinion change according to the studies of Festinger and Maccoby (1964) and Gardner (1970). Their evidence seems to confirm other studies which hold that pleasant or humorous messages have greater relative persistence. Another advertising appeal study deals with the behavior phenomenon of consumers who infer attitudes regarding themselves and others for advertisements they see. One experiment of Miller, Buckman and Bolen (1975) suggests the effectiveness of a self attribution appeal in producing persisting behavior change. They compared the effectiveness of varied repetition appeals with normal persuasive appeals on lettering behavior of fifth

grade children. The self attribution message "you are neat" was significantly more effective than the persuasive message "you should be neat." A second experiment designed to improve mathematics performance showed a similar finding. The authors hypothesized that the self attribution message which presents the desired behavior as a present fact, results in reduced counter arguing.

Central to the process of evaluating advertising is the question of the value of the research in the creative aspects of advertising. The creative element is often the most important single element in determining the success or failure of a promotion. The research input into creativity is the source of much controversy. The antagonism between "subjectivity" of the creative process and the "objectivity" of scientific inquiry causes this basic problem.

Koestler in his study of creativity said that there is a basic pattern underlying all creative activity, whether scientific discovery, artistic originality or comic invention, a connecting of previously unrelated dimensions of experience or welding together familiar concepts into a new originality. The basic framework of creativity is the identification of a new synthesis from diffuse elements. Those are the same elements which play an important role in scientific creativity. Artistic creativity is no more pure intuition than scientific creativity is pure reason, according to Koestler. Deep interest and systematic study play a central part in artistic creativity as well as scientific creativity.

Often research and creativity are viewed as separate poles in the advertising process. In a truly creative process, both come together. Research provides a frame of reference for the direction of creative talents. Artistic representation permits tangible expression of intangible concepts. Others see the creative process as an entirely different one for the technical, mathematical, analytical approach to problem solving and feel that it cannot be held accountable to other types of reasoning. It is their feeling that scientific thinking and creative imagination do not come from the same sources of the mind and do not follow the same rules. The imaginative way of conceiving ideas and images does not proceed in an orderly fashion, as in technical cause and effect reasoning according to Martineau (1957). He said creative imagination is a searching for new concepts, requiring disciplined thinking to solve a specific problem but somewhere in this process the unconscious intelligence comes into play. The creative person, in trying to reach otherwise unapproachable subverbal levels of the mind, uses other means than logic, such as art, prose, or poetry. This subverbal influence can be readily observed in advertising. A design using a Christian Dior initial or the name Vera, gives a creative meaning to a piece of silk fabric. This is a different form of communication with a completely different symbol system. The meaning is simply just not expressible in the language of logic. Because we can not define the meanings does not detract from the power to communicate on a subverbal level. Creative person in advertising tries to communicate sometimes logically, sometimes evoking an instantaneous

prelogical reaction. They try to reach their audience in the area of intuitive judgment.

A few studies have tried to measure the creative content of advertising by relating it to marketing performance (Bechnell and McIsaac, 1963; Buzzell, 1964). Their studies showed that the advertising message quality is one of the most important elements in retention. Fundamentally, an advertisement is an expression of an idea and the success of the advertisement depends on the strength of the idea.

Nonmedia Research

In advertising, research is divided into media and nonmedia areas. Nonmedia would be packaging design and point of purchase displays. The response of consumer to media advertising is difficult to trace because the goods are not identified with the advertising as they are in the area of nonmedia where there is a direct relationship. Darby (1964) studied a number of cases where media and nonmedia expense are monitored to determine the relationship of expenditures/sales to determine effectiveness. He found nonmedia promotion led to increased sales but that the benefits from promotion quickly disappeared. It was suggested that buying during promotion was a stocking up activity which adversely affected future sales. Kuehn (1962) suggests that repeat purchases come about because of a learning pattern. There is very little research available to assess the effectiveness of nonmedia advertising. One of the few display studies was done at the request of the National Retail Dry Goods Association to determine the effectiveness of several standard techniques of interior departmental displays. Their results show that

merchandise shown on a stand on an open counter or top of a counter was twice as effective as the next best technique. They measured the techniques in terms of the store traffic audience.

IV. AUDIOVISUAL RESEARCH

As with advertising, studies in the effectiveness of audiovisual materials are relatively new but the prolific amount of studies now being published is making up for lost time. The audiovisual studies reported here are those involved in the transmission of information visually. A study of audiovisual teaching devices finds very little written by psychologists, unlike advertising, but they provide a cache of knowledge accumulated through years of work. A classic in the area of audiovisual teaching devices is a book by Edgar Dale (1954) which has had a vast influence on the production of audiovisuals and their use in a teaching situation. He states that "audiovisual materials are one particular way to extend the range of vicarious experience." He puts forth the idea that auditory experiences are less real than visual experiences. Wittich and Schuller (1962) say that ideally learners should have available a combination of audiovisual experiences which reinforce one another. They maintain that it is the most efficient part for the mastery of understanding and concepts.

A sequence of visual displays has the capacity of transmitting information if they are properly designed. The transmission of information involves processes of varying complexity. Brogden (1939) presented that the simplest form of transmission was sensory conditioning.

While a great amount of research information has been gathered concerning factors which influence transmission of information through auditory or visual channels, much less is known about transmitting information by means of pictorial representation. Despite the relative lack of information about pictorial transmission of information, the literature has much to say about its value.

Visual Illustration Research

Fleming (1962) says that the principles to be employed by a communicator in designing and arranging visual stimuli have not yet been identified. However, his findings showed that visual illustrations are equally effective for boys and girls at the same grade level and that they are not equally effective with students who have different levels of knowledge in the content area.

Early research into visual illustration maintained that more learning took place when the pictorial stimuli was realistic as opposed to simple line representation. Studies by Morris (1964) presented his iconicity theory, sign similarity orientation was developed by Carpenter (1953) and Dale's (1946) cone of experience, all maintained that learning would be more complete as the number of cues (realism) in the learning situation increased. They suggested that an increase in realism of visual illustration would facilitate learning. Several other theorists did not agree with this position (Broadbent, 1958; Jacobson, 1951; Miller, 1957). Travers (1964) further stated that his studies showed that "confronting a person with stimuli identical to those emitted by the real environment is no guarantee that the most useful information will be retained."

Miller (1938) studied third graders to determine if viewer preference of illustration was significantly related to age, sex and IQ. His results found no relationship according to sex and little difference according to IQ. His results did suggest that if pictures are to be an aid to understanding printed materials, cues will be needed to direct the attention of the children this age. Halpert (1944) studied the extent to which illustrations add to the comprehension of reading materials. She found that from the standpoint of stimulating and arousing ideas, pictures alone were found to be superior to print only or in combinations of print and pictures. French (1952) studied children's preferences for pictures of varied complexity and found that children have a consistent basis for their preference for pictures as related to age level. He also found a similarity between boys and girls responses.

Smith (1959) advanced the theory that artistic illustrations of the proper design can improve the interrelationship between artistic and verbal symbols. He claimed that visual art in textbooks can sharpen reader's interest. He also stated that creative and artistic illustrations in books, direct, strengthen and motivate the individual to read and improve long range memory of the content of the book. His audiovisumatic theory states that properly designed artistic illustrations in books or other AV materials serve three functions: (1) they perceptually motivate readers by attracting them to pick up the book, to explore it and develop a feeling of expectancy when turning each page, (2) artistic illustrations perceptually reinforce what is read

or seen, and (3) art work correlated with print "symbolically enhances" the verbal information. Pictorial materials in learning situation serve two main purposes: (1) they motivate, and (2) they transmit information. In the case of elementary school children, the use of pictorial materials appears to have arousal value according to Travers (1964). Studies have shown that younger children prefer simpler pictorial materials. However, a number of studies on information retained from printed materials designed with or without pictorial accompaniments find that the picture materials do little to aid retention.

One of the most common embellishments of AV teaching devices is color. Studies of preferences show that when colored and uncolored versions of the same picture are shown to elementary school children, there is a marked preference for the colored version (Redisill, 1951; Shaffer, 1930). Younger children are differentiated from older children by the fact that they also prefer unrealistic colored to realistic black and white pictures. Although learning is not improved per se, learners prefer color. Images in color or in black versus white have been found to produce different learning patterns (Dwyer, 1971).

Gertrude Whipple (1953) studied the interest appeal of illustrations in textbooks in order to determine the preferences of children as well as to determine which stimulated an interest in reading. Her studies found that students prefer illustration in color, chose illustration which centered on their interests. She found that themes in illustration which ranked high for both boys and girls were pictures of fire and fanciful characters. These indicated as high interest by boys and low

by girls were "war and fighting," "sea and ships" and means of travel. Boys also chose Indians more often than girls. Girls showed a preference for pictures indicating holidays and puppetry. French (1952) stated that first grade children like simplicity in pictures while older children showed a preference for complex pictures. His study showed that six year olds preferred those pictures that are understandable to them on the basis of their own artistic ability. Allen (1960) maintains that studies show that children prefer illustrations that are colored, contain action, tell a story, are related to previous experiences or can be associated with places, people, objects, events or animals about which they have read or with which they are familiar. Spaulding (1955) concluded that an illustration must be presented in terms of the past experience of the intended audience, simple, in color and captions used to generalize, modify, relate or extend the meaning of illustration. His research showed that pictures are an effective interest getting device, help the reader interpret and remember content. He found that realistically colored pictures were more effective but more significantly, illustrations preferred by children were not always those which the children had identified as most attractive. He further maintained that the past experience of the viewer largely determined how he will interpret object in the picture. Rudisill (1952) concurred with these findings. Miller (1938) found that children reported seeing relatively few items that make up pictures. Items of a picture are seen in isolation rather than the parts of a unified whole. He found that if pictures are to be an aid to learning, important items must be pointed out because they often escape notice of children.

Communication Process Research

As with visual illustration, audiovisual research has just begun to direct attention toward the effect of message design. The sender communication variable may include factors such as concepts to be communicated, intended outcome of the communication, psychological relationship to sender and to receiver as well as other factors. The message variable included knowledge, skills and attitudes, as well as content. Message design, to be effective, must have as its goal the nature of the message to be communicated, establishment of the desired behavior of receivers of the message, selection of the presentation elements which lead to desired behavior effects and arrangement of an effective presentation environment (Briggs, 1967). According to Krathwohl (1964) other message factors must also be considered. He cites the internal elements, arrangement and structure of message which offer additional possibilities with implication for selection. Research in educational media often fails to recognize that message code is a confounding variable for media presentation modes. Researchers have not sufficiently studied the effects of message codes used singly or in combination to attribute differences in learning effectiveness in the use of specific message components. Receiver learner variables are potentially the most important variable in education media research. Learned variables most commonly considered are factors such as age, grade level, mental ability and reading achievement (Haskell, 1971). Unique personal characteristics such as motivation level, extrovert-introvert tendencies, verbal tendencies, media preferences all affect learning effectiveness as they are receiver variables.

Two studies experimentally investigated learning from media and related the results to factors involved in the communication process. Allen and Russell and Daehling studies were reported by Hempstead (1973) in his research. He was critical of their work stating both had weaknesses in design because of the low reliability of the measuring instruments. He maintained that media selection and producing and message design must result in communication tools which effectively elicit desired learning behaviors. To accomplish the function of providing effective communication the unique qualities of media and predictable responses of learners based on the relationship of several variables must be accounted for.

In the literature of audiovisual instructional technology, much attention has been given to "systems approach" to instructional media research. The scope of this research is involved with the entire communication process. Communication process traditionally is considered to have three variables, sender, message and receivers. With the development of further study in communication technology, the variables increase to five, the sender, message, channel, receiver and effects with two additional variables for an educational model, source of message and medium. In educational practice, each of these variables has subfactors. The sender communication variable includes such factors as the message and the sender desire to communicate, the intended outcome, the psychological relationship of the sender to the receiver. If it is not recognized that the intended message and the message received are not identical, results are vulnerable to misinterpretation. The

message variable consists of content of communication, information, understanding, attitudes and skills. According to Mugge (1970) careful thought is required to devise the right message for the particular objective to be developed. She developed six criteria. It must attract attention, capture the essence of the main idea, pose a question, relate an idea concisely, personalize the use of the word "you" and involve children immediately. The message should be so short so that the passerby may take in its message at a glance. Not more than ten to fifteen words should be used. Finding a suitable message is difficult for it must be arresting, succinct and suited for the audience intended.

Sensory Experiences Research

Dale (1961) stated that audiovisual materials must be seen in relationship to teaching as a whole. He puts forth his idea of "cone of experience" in which direct purposeful experience is the basis of effective learning. This is an extension of Froebel's theories (1826) which he stated "to learn a thing in life and through doing, is much more developing cultivating and strengthening than to learn it merely through the verbal communication of ideas." People learn on the basis of what they have experienced and develop a series of relationships. When anything has meaning it has meaning because it is related to something else. Dale says that research in learning shows a high positive correlation between meaningfulness and rate of learning due to relatedness of other experiences transferring to new structures. He further states that direct purposeful experience must often give way to contrived experiences when the former is impossible due to time or

spatial limitations. Contrived experiences are an edited version of reality to imitate direct experience through the use of models, mockups, specimens or objects.

Mockups were used in Army and Navy training programs extensively and most of the research comes from that quarter. The military aim was to use mockups to assist instructors in demonstrating or explaining complex mechanism or abstract ideas. Denenberg (1954) compared mockups to actual tank equipment. He found mockups superior for teaching starting and stopping procedures. However, Swanson and Aukes (n.d.) and Torkelson (n.d.) reported no difference in the teaching effectiveness or retention test scores in mockups, charts or cutaway trainers.

Dale (1961), Weaver (1949) and Brown, Lewis and Harchleroad (1977) place importance on the role of sensory experience in learning. They note that specimens, objects and other realia permit learning that otherwise would be unobtainable. Students are permitted to build generalizations and draw inferences from them.

V. READING INTERESTS RESEARCH

Although Piaget sees motivation of cognitive behavior as intrinsic, many researchers see that there must also be external forces responsible for motivating cognitive behavior. It was once thought that the need to know would produce an automatic reading process that would be self motivating. Recent concern about sliding reading scores seem to point to the theory that today's children do not feel the need to read and are not motivated particularly by internal forces to try. Glasser

(1971) points out that children brought up on a diet of television do not find reading or the pleasure of reading as one of the goals portrayed on television and therefore do not find intrinsic motivation to read. The ultimate goal of reading instruction is to develop children's reading skills so that they can independently gain information and knowledge and gain pleasure and appreciation for reading. Hudon (1974) studied motivational techniques for promoting interest in reading among second graders. Her findings were that there was a significant relationship between motivational techniques and degree of interest in reading, especially a technique which favored audiovisual techniques. Jenkinson (1964) maintains that interest is one of the most potent motivating drives and should occupy a central place in a reading program. King (1967) felt that attitudes are general predispositions toward reading which are developed or modified with experience. The stimulus of activity is the individual's interest in reading. King also points out that reading interests are not necessarily the same as reading preferences. Getzels (1956) defines the difference. "Preference is relatively passive while interest is inevitably dynamic." A preference is a readiness to receive one object as against another, it does not induce us to seek out the object. In contrast, the basic nature of an interest, according to King, is that it does induce us to seek out particular objects and activities.

Many studies of the factors influencing reading preference have been accomplished using various methods, pupil's reasons for choosing books, kinds of reading materials, literary form style of writing,

type of print and illustrations. In studying reasons for selection, Cappa (1956) agreed with earlier findings that the teacher's enthusiasm for literature is an information factor in the development of reading preferences. Peer recommendations were also an important influence.

Studies of reading interests, which have been numerous, reveal that sex, social and cultural expectations determine what a child likes to read. There is a significant relation between children's reading interest and attitudes toward reading. Research methodology which has been employed varies widely, typically used library circulation records, questionnaires, interviews and pupil reading records. A child may prefer to read one type of material over another and at the same time have no interest in reading.

The first study of reading interests was reported to be made by M. B. C. True in 1893. He reported "What My Pupils Read." L. M. Terman and Margaret Lima (1931) did an early landmark study to determine that "there are certain well defined tendencies in reading interest that change as the child's experience grows and as his imagination and reasoning powers develop." Zimet (1970) reported that over three hundred studies of children's reading interests had been reported by 1969 and it is safe to guess that many more have been reported since. With the great number of studies about reading interest of children that have been reported through the years, it is not surprising that children's preferences change as society changes. The reading interest of children of the 1950's or the 1920's (Browman, 1959; Meisel and Glass, 1970) are not the interests of today. Research results indicate

reading interests vary significantly with times, sex, age, maturity, socioeconomic background and the availability of books. All the studies point to the fact that the importance of interest in reading material cannot be overestimated.

Gans (1965) in her study determined that interest in books develops at a very early age. She found significant interest in books at the preschool level. Oliver (1977) studied the reading interests of children in the primary grades and found that first grade children preferred stories with animal characters as well as realistic and fantasy characters. Third graders, however, preferred fantasy characters and fantasy story equally but rated animal stories lower. Recent studies reveal a trend that children of younger ages are maturing faster in their reading. A study by McAulay (1962) identified more mature interests among younger children as being probably due to the influence of television, radio, movies and travel.

Studies of children's interests find few differences between the sexes up to the age of nine. Terman and Lima (1925) identified the interests of boys and girls at each age level and determined definite differences in interests in boys and girls. Many studies have supported this finding (Norvell, 1950; Zimet, 1966). Several studies found that sex differences in reading interest were not as pronounced in the primary grades (King, 1967; Norvell, 1950). More recent studies, however, suggest that there is a theory of social conditions or sex stereotyping which causes the wide differences in reading interests of boys and girls (Chasen, 1974; Zimet, 1966). Studies invariably show that boys will

not read "girls'" books (Norvell, 1950) but girls will read boys' books. Moray (1977) reported studies by Katherine Steiert in which she reported that girls read more books and preferred fiction while boys read fewer books but preferred nonfiction over fiction.

Meisel and Glass (1970) reported on the voluntary reading interests of boys and girls and identified the ten highest ranked interests areas.

BOYS

- History and geography, nonfiction
- History and geography, biography
- Careers, biography
- Science, general
- Animal stories, nonfiction
- Sports, nonfiction
- Hobbies
- Mystery

GIRLS

- Adventure, personal
- Humor, stories
- Fantasy
- History and geography, biography
- Animal stories, fiction
- Mystery
- Animal stories, dogs
- Careers, biography
- Folk tales, myths, legends, tall tales
- History and geography, nonfiction

Feeley (1974) identified the interest patterns and media preferences of middle grade children to determine if there was a pattern which could be related to sex, race or socioeconomic status. Developing a literature type inventory, she analyzed the degree of interest responses. She found that boys preferred to read (1) sports, (2) information, (3) excitement-fantastic, (4) excitement-realistic, (5) recreational, (6) folk tales, modern fantasy, comedy, (7) social empathy-people and problems, and (8) artistic. Girls had as their reading preferences

(1) social empathy-people and problems, (2) hobbies and art, (3) social empathy-fun and excitement, (4) fantasy, (5) reactional, (6) excitement-realistic, (7) social studies, (8) science, and (9) sports. She found that culturally related variables of sex and social class are effective in shaping children's interests. Her findings also showed that middle grade boys and girls prefer watching television rather than reading which indicate, according to her findings, an interest in visual materials.

King (1967) summarized the factor influencing reading interests.

1. Reading interests tend to change as new interests are developed.
2. Reading interests do not necessarily reflect informational needs.
3. Audiovisual aids may play an important role in changing reading interests.
4. Primary grade children prefer fairy tales and realistic stories based on everyday activities and animal stories.
5. Intermediate grades children prefer mystery, adventure, animal stories, family life stories, biographies, sports, science and social science.
6. Children appear to be maturing faster in their reading interests.
7. There are few sex differences in reading interests up to the age of nine.
8. There are definite differences in reading interests among girls and boys after age eight.
9. The reading interests of children who are above average intelligence mature faster than those of slow learners.

King (1967) postulates that though many studies generally agree on the reading interests of children, current events influence book selection heavily. Current movies, television programs and disasters often cause children to read in an area that is relatively unknown.

Until recent studies, children's interests did not reflect the effect of television. Nancy Larrick (1960) states that urban and rural children may be developing interests more alike due to the fact that

they watch the same television programs. Howes (1962) believes that television viewing ranks first among preferred activities which he believes will have a significant effect on the reading interests, preference and tastes of young children.

None of the studies reviewed addressed themselves to the question of the effectiveness of library displays of various types on elementary school children's book selection. The present study addresses this issue.

VI. SUMMARY

A review of literature reveals no research into the motivational effects of library display. Garvey (1972) defines the educational function of library display as providing for direct learning, indirect learning and aesthetic appreciation. Many writers (Bowers, 1974; Brantlinger, 1963; Brogwardt, 1970) declare display is educationally valuable and important, however, no definitive study was found.

Because of the relationship between library display and advertising display in both content and methodology, a review of advertising research found significant studies dealing with communication, client behavior and consumer motivation which were applicable. Researchers (Starch, 1927; Krugman, 1975; Bass and Clarke, 1972) found that memory of and attention to the display are required of the client if the communication process is to be complete and the client is to respond in the desired manner. Researchers disagree, however, how long the communication remains in the clients memory and what delayed response it will affect (Palda,

1964; Tull, 1965; Griliches, 1967). Later studies suggest that advertising effects last for months rather than years as formerly supposed.

Motivational studies show that goods must appear to meet the needs of the consumer (Tolman, 1959; Allport, 1961). Consumers learn to respond to cues as well as needs and drives, both biogenic and socio-genic. Motivation is multiple and complex and changing according to attitudes, beliefs, habits and customs. Response to advertising is closely related to the consumers self experience if it is to be effective.

There is little research regarding the effects of different media on persistence of communication. Print is more enduring according to Krugman (1975), Preston (1970) and Bogart, Tolly and Orenstein (1970). Humor and pleasant messages facilitate persistence. There also appears to be a high correlation between persistence of communication and interest generating subjects.

Visual communication involves processes of varying complexity. Fleming (1962) found that effectiveness of visual communication was not related to sex but to knowledge. Research suggests that realism in visual communication and illustrations facilitate learning, however, Broadbent (1958), Jacobson (1951) and Miller (1957) did not agree. They found that even the use of color in visual, though preferred by children, did not improve learning. Spaulding (1955) concluded that visuals must be presented in terms of past experience of the intended audience, simple in design, in color and captions used to generalize, modify, relate or extend the meaning of the visual.

Reading interests studies show that sex, and social and cultural expectations determine what a child likes to read. Early studies of sex differences in reading interests (Terman and Lima, 1925) showed that in the primary grades little difference exists but after the age of nine, the difference is pronounced. More recent studies suggest the difference is due to social conditioning.

CHAPTER III

RESEARCH DESIGN AND PROCEDURES

I. INTRODUCTION

The purposes of this chapter are to state the research design and procedures used in the study, the selection of subjects, validation of displays, display procedures, the collection of the data and to present the statistical methods used to analyze the data.

The investigation was concerned with the motivational effects of various display techniques on the book selection of elementary school children. Factors of grade level interest were explored.

To determine the display preferences of pupils, a survey instrument was designed. The students were asked to identify the five best liked displays in order of preference and the favorite bulletin boards in order of preference and to identify books selected in relation to displays and bulletin boards. An interview guide was designed to facilitate personal interviews with a stratified random selection of students to determine preferences of display techniques, displays, bulletin boards, and their correlation with book selection.

A special study was conducted to determine if there was a significant difference in display technique when correlated with book selection of third and fifth grade students.

II. PROCEDURES

Selection of Subjects

The population for the study consisted of all the students enrolled in grades one through six at Rocky Hill Elementary School, Knoxville, Tennessee. The students were asked to answer a survey questionnaire during their library period in the school library. Grades three through six had forty-five minutes to complete the survey. The survey instrument (see Appendix A) was designed to determine the school library clientele's preferences as to display and the impact of specific bulletin boards on book selection as well as memory. Grades one and two were permitted to draw their preferences in order to eliminate writing or spelling limitations. The second grade students had forty-five minutes to complete the task and the first grade students had thirty minutes.

Five students in each classroom were selected randomly and interviewed by the librarian at a time other than their library period when the library was free from displays and general student activity. The interview instrument (see Appendix B) was designed to determine specific preferences of various displays, evaluate the effectiveness of various display techniques to attract attention, to evaluate various techniques to influence book selection and to determine if there was a grade level-preference relationship. A letter of explanation and a request for permission to include their child in the study was sent to the parents of each child interviewed (see Appendix D).

The total enrollment of the third and fifth grades was selected for a special study. Observations and circulation counts were kept

for the eighty-seven third grade students and the sixty-six fifth grade students on specific book selection as it related to a special display (see Appendix C). Teachers and the principal were contacted and their permission and cooperation for the study were secured.

Statistical Procedures

A survey instrument was used to collect data as to the range of display preference and bulletin board preference, utilizing recall as the measure of interest and preference and to determine if students could correlate a book selection with a preferred display. A numerical count was tabulated to determine first preference, second preference, third preference, fourth preference and fifth preference. Using a technique of summated ratings, a weighted scale was devised so that the qualitative attitudes could be analyzed. The preferences were arranged in the form of a five point scale. Weights were assigned to the categories, for each item the least favored response represented the lowest value.

Data from the interview were divided by display technique preference and examined to determine which technique was preferred, which display could be recalled, using recall as a measure of interest and to tabulate the number of books selected in relationship to a display technique. The data were grouped to determine if there was a preference according to grade level.

Data collected from the special study of third and fifth grade student book selection were analyzed utilizing the Statistical Analysis System 79 using the PROC FUNCAT procedure which has the property to fit

linear models to dichotomous data. The analysis was made to determine if there was a significant difference in book selection which could be attributed to a specific display technique.

Validation of Displays

A variety of display techniques were employed for this study (see Appendix F) and the displays were constructed to meet the guidelines and criteria of Marjorie East in her book *Display for Learning* (1952). She specified that displays should (1) concentrate interest and attention, (2) show basic structure of an idea, (3) explain abstract ideas in concrete terms, (4) bring scattered ideas together to form new concepts, and (5) turn ideas into words. The displays fall into two categories, two-dimensional and three dimensional, as defined by Brown, Lewis and Harclerod in *AV Instruction: Technology, Media and Methods* (1977). Two dimensional displays were identified as posters or bulletin boards usually attached to a wall. Three dimensional displays were identified as being either modified or unmodified realia. Modified realia are models (reproductions of real things), mockups (simplified versions of real things), diorama (miniatures of reality) and sandtables (miniature scenes of real things). Unmodified displays were real things as they are: specimens, live things and collections of real things such as tools, stamps, shells and insects.

Bulletin boards were given special attention because of the fact that most of the readily available display materials and information centers on bulletin boards and though it was treated as a display technique, special questions were developed to determine the

effectiveness of bulletin boards as a separate entity. The bulletin boards were designed around reading interests and available book collections. Adhering to the elements and principles of bulletin board design specified by Mona Garvey in her book *Teaching Displays* (1972), each bulletin board was carefully constructed to satisfy educational goals. Criteria and evaluation of bulletin boards were those developed by Melvyn K. Bowers in his book *Easy Bulletin Boards of the School Library* (1966). The requirements he listed are:

1. The general principles of good graphic design, such as arrangement, color, balance and interest appeal must be given careful consideration.
2. The topic must not be so broad that it tends toward spottiness and yet not overemphasize any small portion of the topic.
3. The material being "sold" must be readily available to the patrons in the library.
4. There is little need to advertise material or services that are already in good demand.
5. The display must use related material, avoid time worn themes, and should be original and fresh in its approach.
6. Material selected for use in the construction must be those which are of interest to the patrons for whom the display is intended.
7. The entire board used in the elementary school should read from left to right to avoid confusion, and any caption must be comprehensive to the young patron.
8. The cartoon type design appears to be just as effective, or more so than a more accurate artistic rendering of the same theme. When realia can be used, such objects appear to be better attractors than a drawn representation.
9. The cool colors are apparently not as useful as attractors as warm tones and pastel shades are not as attractive to children as the bold pure colors.
10. Designs that suggested dimensions and used textured materials are generally more effective than flat surface design. The designs can use paper sculpture or other methods to create dimension.
11. Displays that are placed at or slightly below eye level will attract and hold the greatest amount of attention.

12. Borders around a design unless they are an integral part of the design are usually a waste of time and materials.
13. Humor and a positive approach in display appears to be more effective than satire or negativism.
14. The use of animated design, using small motors or power, is very effective when used only occasionally.
15. A display placed in an unusual or unexpected place was often more effective than one placed in an accustomed location. The use of free standing space was very effective for this purpose. Such displays should not be placed where they create a traffic hazard or where children normally hurry by.

Bowers (1966) developed a checklist to evaluate bulletin boards.

Included in his checklist were five points.

1. Check that the eye does not stray off the design into space but is pulled back to a central point of interest.
2. Check that all lettering should be read from a reasonable distance.
3. Check that there are no unnecessary words or objects in the display.
4. Check that the design is so attractive that it draws attention to itself.
5. The display should leave the designer with a personal feeling of satisfaction.

True evaluation of any display rests with its success, according to Bowers (1966).

Posters used for the library study were selected with certain standards in mind. These standards as discussed by Wittich and Schuller in *Audiovisual Materials* (1962) state that good posters must have a dynamic and impelling quality, dramatic simplicity, appropriateness, good design, color and pleasing to the eye. The posters were selected from recognized school library selection sources where they have been reviewed and recommended.

Displays which were designed and constructed for this study were varied and developed according to guidelines described by Brown, Lewis

and Harclerod in *AV Instruction: Technology, Media and Methods* (1977).

Collections were clearly and accurately identified and labeled and displayed in a manner suitable for their size and type. The displays were evaluated according to Dale's (1969) guidelines.

1. Do the displays meet instructional objectives?
2. Do materials give a true picture of the ideas they present?
3. Are materials appropriate to the age, intelligence and experience of the students?
4. Do the materials show the relationship of subject matter to needs and interests of students?
5. Do the displays bring freshness and variety to the learning experience?
6. Do the displays furnish a rich experience for which meaningful concepts will be developed by the students?
7. Do the displays widen student experience in a process that will foster nonverbalistic learning and the making of accurate generalizations?
8. Is the model or mockup necessary or can use be made of the original?
9. Is the idea appropriately represented in a model?
10. Are important details of construction correct?

Dioramas were evaluated according to Currie's (1962) evaluation checklist.

Display Procedures

The bulletin boards used in this study were located to the right and the left of the main library door in a conspicuous spot where classes pause before entering the library. The limitations of the two bulletin boards is that they are of a difficult size, fifteen feet long and thirty two inches high. They are about eye level for the average sixth grader. The bulletin board displays were changed alternately every week and were tied into a specific reading theme going on in the library at the time. Book jackets were always used as part of the bulletin board design.

Background materials were varied in texture such as burlap, foil, cellophane pop paper, egg cartons and tissue paper. Background colors varied from pastels to bright primary colors. Various captions were used, all developed to catch the students' attention. These captions were gleaned from advertisements, comic valentines, puns and sometimes, appropriate book titles. Most bulletin boards featured one or two major figures constructed of various materials and in different sizes. For instance, the cardboard elephant figures were covered in papertowels which had been dipped in white glue and then spray painted gray to give them a wrinkled leathery look. The whale was made of black shiny vinyl contact paper and the ghost was constructed of white string, dipped into white paste and wound around balloons until it took on a ghostly shape. When the paste dried, the balloons were popped and removed leaving a lacy three dimensional ghost. Other figures often featured paper sculpture hair or fabric bits to add visual variety. A log was maintained of all bulletin boards used in the past six years as well as a pictorial log of the thirty two bulletin boards used for this study. For a schedule and illustration of the bulletin boards displayed during the year of this study, see Appendix E.

Posters used in the library during this study as part of the two dimensional displays were selected from approved review sources. Those posters displayed were *The Twelve Months* by Brian Wildsmith, a well known children's illustrator, *Wild Animals* by Janusz Grabinianski, a noted illustrator of nonfiction books about wildlife and *Peter Rabbit and Friends* by Beatrix Potter.

Various types of displays were used in this study and a log was kept (see Appendix F). A log of all the displays exhibited during the past six years was maintained. The students had many choices for their preferences depending upon the number of years they had attended the school. The only displays which were duplicated more than once were the insect collections, the pioneer tool collection and the live animal collection. These collections were tied into literature units as well as curriculum units and, though they were used several years, the number of items and the main focus of the collection was changed yearly. For instance, the pioneer tools sometimes emphasized the cabin making tools and other times the housekeeping tools and still another time, the farming tools. The insect collections were mounted in illustrated cases and placed in shelf nooks at eye level. Other collections appeared in the library only once. Those collections were model cars, model airplanes, Japanese cultural artifacts, Indian cultural artifacts, army realia, houses from literature and Winnie the Pooh bear collections. All collections were displayed on shelves and table tops so that they were available for handling and viewing.

Mockups were used on three display units; a log cabin, a tepee and a castle. The log cabin was constructed of two cardboard refrigerator boxes joined together to make two rooms. The outside was painted to resemble logs and a pitched roof was painted to resemble wood shakes. A door and two windows were cut into the sides while the fourth side had a fireplace made of cardboard painted to resemble field stone, complete with mantel and chimney. There were a few furnishings, a

small table and rocking chair and students were permitted to enter the cabin to sit and read.

The castle was also constructed of cardboard refrigerator box. This mockup was designed to coordinate with a literature unit focused on fairy tales and knighthood. The castle was twelve feet tall, using three boxes, in graduated sizes, one on top of the other, to achieve the tower effect. There were four small circular turrets, made of ice cream cartons, at the corners of the larger box, a plastic "stained glass" window and a drawbridge which could be raised and lowered by means of a plastic chain. The outside was painted to resemble gray stone and inside was a gold "throne." Students were permitted to go into the castle and sit to listen to a tape recording of a fairy tale.

The third mockup, a tepee, was designed to coordinate with an Indian study. The tepee was made of a semicircle of tan burlap and six long poles. Indian designs were painted on the outside. Inside was an "Indian" rug and a feather war bonnet. Students were permitted to go into the tepee to read.

During this study, several groups of unmodified real things were used as display, such as collections of insects, specimens of spiders, collections of shells, specimens of crabs and sea animals, collections of pioneer cabin building tools such as a broad ax, froe, adz and auger, collections of pioneer housekeeping tools such as flat irons, quilting frames, looms, apple peelers, and cookware, Japanese cultural artifacts such as clothing, fans, dolls, books, art, cricket cages and kites, Indian cultural artifacts such as pottery, baskets, arrowheads,

beadwork, books and art work, aquariums of pond life containing turtles of several varieties, fish, salamanders, frogs and crayfish. Other unmodified real things used during this study were fossil collections, mineral and rock collections, Army realia, and a collection of small pets such as rabbits, guinea pigs, hamsters, gerbils and mice.

There were also collections of modified real things, model cars, model airplanes and horse models. Most of the models used in this study were from kits available in most hobby shops. Those displays were car models of various vintages, model airplanes, both war and domestic planes and horse models of the major breeds of horses. Each model was identified and labeled. Airplane models were hung from the ceiling in flight positions when it was feasible.

Dioramas and sand table constructions are also considered modified realia. During this study they were displayed as student made exhibits. The dioramas were constructed on the basis of several themes such as "Scenes from Winnie the Pooh" using only shoe boxes to control the size of the diorama and "Houses in Literature." The houses were constructed from any size container utilizing any materials preferably not purchased. The emphasis was on imagination and creativity. Examples of the student made dioramas in the "Houses in Literature" group were (1) a gingerbread house made of cardboard and painted gingerbread color with candy as the decoration, (2) Stuart Little's room with a cigarette box as a bed, (3) a log house with logs made of construction paper illustrating the story *The Cabin Faced West* by Jean Fritz, (4) Owl's house made from a piece of log, and (5) Tucker's drainpipe home complete with keys and

a shoeheel. Other dioramas were opensided and placed on tabletops. Some examples were (1) a scene from *Hitty* by Bailey using a china headed doll and a small needlework sampler, (2) a scene from *Horton Hatches an Egg* by Dr. Seuss in which a branch bent and supporting a nest and elephant figure, and (3) a circus with animals, tents and figures of performers.

In this study, the sand table was five feet long by three feet and contained building grade sand. It was used to reproduce various scenes such as a World War II infantry battle scene and a World War II tank battle scene, a farm scene and a dinosaur scene. The battlefield scenes were constructed to scale with "bombshattered" trees, foxholes, sandbags and soldiers in various battle situations. In the tank scene, tank models were constructed to scale and artfully dismantled and partially burned to obtain a realistic effect. Bits of trees, rocks and partially dismantled structures completed the scene. The farm showed the topography of farm land, divided into field and pastures with a barn, barnyard animals, models of tractors, balers and other farm machinery and growing plants. The dinosaur scene used moss, rocks, wild ferns, and bits of wood around a pond for a realistic appearance. Small plastic dinosaur models in scale were used to complete the scene. In all the sand table displays, the figures could be manipulated so that the scenes were always being readjusted. For each of the scenes, research was done to see that the project was authentic.

For Part II of the study, a special set of displays was designed using Stephanie Borgwardt's guiding principles of library display as listed in her book *Library Display* (1970). Those principles are

stated as (1) adaption to audience noting that exhibits intended for school children differ from displays for university students or the general public, (2) adequate book stock should be immediately available for reading when they have to do with the display, and (3) topic chosen to catch the reader's eye should be display choice. She further stated that books, objects and models should be arranged in the allotted space with simplicity and unity and attention given to avoid overcrowding and the display should center around one idea which can be immediately understood.

The subject of the three special displays was selected because of student interest and the availability of a suitable collection of books. The displays, in the form of dioramas, were constructed for this specific study, using the guidelines set up by Dorothy Currie in her book *Making Dioramas and Displays* (1962). Because the dioramas were to be displayed in an area accessible on all sides, an open table scene style diorama was utilized. This technique uses one object set in its natural surroundings in perspective usually showing an outside area. The scenes' only purpose is to show one item in its setting in detail and does not include extraneous objects. These dioramas were displayed on top of the card catalog cabinet which is chest height and located in the center of the library, accessible on all sides.

The first display featured Peter Rabbit's house. It was constructed of twisted pieces of driftwood and wire supported painted papermache. It was mounted on a 12 x 12 inch board and a light film of sand was glued over it all. The diorama was so constructed that inside the

rabbit hole there were visible four small labeled rabbit beds. Since the literature unit featured rabbits, five books about rabbits, fiction and nonfiction, of various reading levels, were displayed with the diorama. As a book was checked out another was put in its place.

A rabbit bulletin board was designed as one third of this special unit. This board used the caption "Hop into Reading." Figures of hopping rabbits were constructed using book jackets as the bodies of the rabbits and the heads and feet were made from white construction paper. Pink construction paper lined the ears and colored the eyes. The tail was a large cotton ball. Several of these book rabbits were placed in various hopping positions on a background of blue to pink striped tissue paper.

The second special display for the third grades was designed as an opensided diorama featuring dinosaurs. This display was a miniature scene contained on a 35" x 25" tray on which a 24" tall model of a Tyrannosaurus Rex was arranged among moss, growing vines and interesting rocks. Dinosaur books were arranged around the scene. As a book was checked out, another fiction or nonfiction book was put in its place.

The dinosaur bulletin board featured a large rather cartoonish Brontosaurus eating book jackets from books about dinosaurs. The Brontosaurus was made from light green poster board on a background of orange. The caption read "You'll go for these in a big way."

The third display for the special study was used not only for the third graders but also for the fifth graders with only a change in the reading level of the available books. This diorama, capitalizing on

the popular Star Wars theme, featured a 27" tall robot made of various odds and ends of hardware, spools, reels, boxes and painted with aluminum paint. It was set on a platform covered with white aquarium gravel and chunks of black lava arranged in a manner to bring balance and interest to the scene. Science fiction, space travel and nonfiction about the moon and planets were used to highlight the theme.

For the fifth grade special display, a horse unit was designed using a model of a well known character in children's literature, the burro Brighty, from a book by Marguerite Hentry entitled *Brighty of the Grand Canyon*. This model of Brighty was mounted on a piece of aged barn board with a few river run rocks of interesting configuration and two live cactus of suitable size. Horse books, both fiction and nonfiction, were arranged near by.

The sports display for the fifth grade was also an opensided diorama. A miniature football field was constructed using green felt for the playing field and white chalk marked the yard stripes. Wooden goalposts were placed at each end of the field with one wrapped in orange and white crepe paper and the other in blue and white. Plastic football figures were placed on the playing field. This diorama had parts which would be moved about, i.e., players could be moved to various positions. This feature brought a great deal of attention to the display. Sports books, fiction and nonfiction, as well as biographies of well known sports figures were arranged at each end of the "playing" field.

The bulletin boards which were coordinated with these three diorama displays for the study were all placed on the right hand side of the

library. The horse unit used the caption "Round up a good book." The board was covered with brown kraft paper and the main figure was a cowboy with a rope which made a large loop across the board. Inside the loop were book jackets of books about horses. The books on the board were available to be checked out in the library. As one of the books indicated on the board became unavailable, another jacket was put in its place.

The space bulletin board used black construction paper as its background. A robot was constructed in a 3-d manner using dress boxes covered in aluminum foil. Spring wire, colored pipe cleaners, and old tape recording reels were affixed to the robot for a mechanical effect. Books about space travel and science fiction were featured under the caption "Far Out Reading." The letters were cutout in the manner of a computer readout.

The sports bulletin board was designed using a purchased figure of a football player. This figure is available from most supply houses for about \$1.98. The figure was arranged on a green background. At the other end of the board was an orange and white goal post. Sports book jackets were arranged amid orange and white crepe paper shakers along the bottom on the board. The caption was "You'll get a kick out of these."

A complete listing of the displays, other than bulletin boards, is presented in Appendix F.

III. SUMMARY

Because of the nature of this study, it was necessary to gain the permissions of the parents and students with a minimum of information so as to limit group discussion which would influence recall of bulletin boards and displays. The sample selected for the study included 550 students in grades one through six who were surveyed as to their preference and recall of various displays used in the school library and their preference and recall of bulletin boards. Ninety five students were chosen at random, five from each class, and interviewed by the librarian. Their preferences for various display techniques, displays, bulletin boards, and book selection/display correlations were tabulated and recorded. Seven classes, in two grade levels, were selected for a special study of three display techniques. Circulation count was kept on specific book selection as they related to a special display. A chi square analysis was used to determine the statistical significance between the three display techniques.

CHAPTER IV

RESULTS

I. INTRODUCTION

The purpose of this chapter is to present an analysis of the data collected from the surveys, interviews and special study. This chapter includes a section on the treatment of raw data (Section II), the findings (Section III), and a summary (Section IV). A survey of all students was used to measure the display and bulletin board preferences as well as tabulate the recall of displays. The survey was divided into two types, a questionnaire form for intermediate grades and a free-response drawing for the primary grades. The questionnaire had three sections. They were:

Section I: List your five favorite library displays in the order you liked them beginning with your favorite.

Section II: List your five favorite bulletin boards in the order you liked them beginning with your favorite.

Section III: Did any of the displays or bulletin boards remind you of a book which you checked out? Please give title of book if possible and identify the display or bulletin board.

The primary grades were asked to draw their favorite display and bulletin board. There was no reference to book selection in this part of the primary grade survey.

Interviews with a stratified random sample of students were conducted to determine specific display preferences and the answers tabulated and grouped to determine if a grade level preference exists, to determine what display techniques motivated children to select books, and to determine which of the display techniques is remembered for a period of time.

The special study utilized library circulation records for the third grade and fifth grades over a three week period to measure the motivational effects of three display techniques on book selection.

II. TREATMENT OF RAW DATA

The tabulation of responses to the survey questionnaire for each grade level and for each preference produced multiple display categories. These were grouped and presented in numerical and graphic form for comparison. A technique of summated rating was used utilizing a weighted scale which gives reliable results in attitude measurement. In a five point continuum, weights of 5, 4, 3, 2, 1 were assigned in order to first choice, second choice, third choice, fourth choice and fifth choice. The results were then charted on a bar graph.

The interview produced three sets of data. These were (1) bulletin board recall and display recall, (2) display technique and bulletin board preference, and (3) bulletin board and display technique influence on book selection. These were not statistically tested since this type of information was not desired.

The special study of three display techniques for third and fifth grade classes utilized library circulation records which were treated

statistically to discover if a relationship existed between display technique and book selection.

III. FINDINGS

The results of the survey on display preference are presented by grade level.

Display

Sixth grade. Seventy-six sixth graders identified twelve different displays as "favorite" (see Appendix F for total list of displays). The students were asked to identify their favorite five, listing them in order of preference. In the top category, 18 percent listed model airplane collection as the best liked. The second highest rating of 13 percent was given to a collection of Pooh bears. War scenes and model car collection both were cited as favorite by 11.5 percent while 7 percent identified horse model collection and 7 percent mentioned the live animal collection.

The second favorite choice identified a list of eighteen displays. Seventeen percent named the model airplane collection and 16 percent listed the model car collection. The live animal collection was mentioned as second favorite by 9 percent. Pioneer tools collection, Pooh bear collection, Japanese artifact collection and the mockup of the log cabin each received mention by 6 percent.

Third favorite display cited twenty-two separate units of display. The model airplane collection received 18 percent of the votes, the

war scenes 9 percent and the model car collection and the Pooh bear collection received 8 percent. At this level was the first mention of a bulletin board or poster though the students had been instructed that bulletin boards and posters were considered as displays. The bulletin board which was mentioned as a favorite display was a Charlie Brown figure flying a book jacket kite with the caption "High Flying Books."

Twenty-two displays with the war scenes cited by 10 percent were listed as the fourth favorite. Model car collection and Pooh bear collection were noted by 9 percent with the dinosaur scene and the pioneer collection receiving 7 percent each.

Fifth place favorite display identified as the pioneer collection by 15 percent, 10 percent identified the dinosaur scene and 10 percent the model airplane collection with 9 percent identifying the war scenes.

The sixth grade overall favorite was the model airplane collection selected by a total of forty-eight identifications. Using a weighted scale, the top five favorite displays were (1) model airplane collection, (2) model car collection, (3) war scenes, (4) Pooh bear collection, and (5) live animal collection. Of the top five favorite displays, the techniques which were used were varied. Two were unmodified realia collections, two were modified realia collections and one was a sand table technique. The model airplane collection, the model car collection and the war scenes were displayed within three months of the time of the survey, the Pooh bear collection was displayed 7 months prior to the survey and the live animal collection was a permanent display.

Fifth grade. In the survey of the sixty-six fifth grade students, they cited only fifteen displays as their first favorite and 41 percent specified live animal collection. Twelve percent noted the Pooh bear collection and 11 percent cited the model car collection, 9 percent mentioned the model airplane collection and the pioneer tool collection.

Second favorite display cited only fifteen displays as well, with a rather even distribution of interest. Eighteen percent mentioned the model airplane collection while 12 percent mentioned the model car collection and the story toy collection was cited by 9 percent.

The third favorite display identified twenty-four display units. Fifteen percent noted the pioneer tool collection while 12 percent cited the model car collection closely followed by 11 percent for the model airplane collection. The display preference became less grouped with a wide number of displays briefly mentioned.

The fourth position had twenty six specific displays recalled. The Pooh bear collection received 12 percent of the notations. However, pioneer tool collection when grouped with "antiques" received 17 percent of the votes. It is noted that at the fifth grade level, quilts, which were displayed at the same time with the pioneer realia, were identified by the students as a separate collection.

By the time the fifth grade cited their fifth choice, their selections were wide and difficult to categorize. Mentioned were several items not considered as a display such as the plants which are part of the library decoration. Eleven percent of the fifth grade students could recall the tepee and together the three mockups accounted

for 15 percent of the citations while Paddington, a story toy, was mentioned by 6 percent.

The fifth grade overall favorite was the live animal collection. Model airplane collection, model car collection, pioneer tool collection and Pooh bear collection were the next identified favorite displays using a weighted scale.

Fourth grade. The three fourth grade classes were surveyed (79 students) to determine their preferences in library displays. Their identifications of the various displays were wider in range and more specific in items than either the fifth or sixth grade students. Nineteen percent identified the war scenes as the favorite while the collection of Pooh bears and the model airplane collection received only 11 percent each. The live animal collection and the Japanese artifact collection were cited as favorite by 7.5 percent. Story toy collection and the model car collection received 6 percent of the votes. The fourth grade students cited more variety in their first preferences identifying twenty-four separate displays ranging from dioramas, individual specimens, collections of modified and unmodified realia and mockups.

They were just as eclectic in their second choices identifying not only story toy animals as a group but selecting specific characters as Curious George, the Happy Lion as well as Paddington and Winnie the Pooh. The selections were spread evenly over twenty-five identified displays with 12.5 percent citing the model airplane collection, 11 percent the model car collection, 10 percent citing the live animal collection,

7.5 percent mentioned the war scenes and 7.5 percent mentioned the Pooh bear collection.

The third favorite again was a wide variety with twenty-seven identifications and again, selection of specific specimens such as the shark, the tarantula or specific story toy from the larger collections. The Pooh bear collection was cited by 15 percent as the third favorite display while 11 percent mentioned the model car collection and 9 percent mentioned the model airplane collection.

The fourth favorite category continued the wide trend with the identification of thirty-four units of display. Again individual items were specified from larger collections as the live rabbit, tractor models and crabs from the sea collection, for example. Of the four most mentioned displays in the fourth favorite category, three were collections; insect collection 11 percent, live animal collection 10 percent, pioneer tool collection 10 percent, while the dinosaur scene received 9 percent.

The fifth favorite category kept the same pattern as before. Fourth grade students named the live animals (7 percent), Japanese artifacts (7.5 percent), dinosaur scene (7.5 percent). Houses in literature, the pioneer tool collection, war scenes, farm set (meaning tractor models) and tepee mockup, all received about 5 percent of the notations each.

The fourth grade students rated two displays equally in their overall preference using a weighted scale. They chose the Pooh bear collection and the war scenes equally. The next three choices were

model airplane collection, model car collection and the live animal collection. The recall pattern was similar to that of the sixth grade.

Third grade. The third grade classes which were surveyed had eighty seven students. Thirty-nine percent of these stated that their favorite display was the live animal collection. They did not specify any particular animal in large numbers but did mention the rabbit more often than the others. Well below the animal collection, the third graders preferred the model airplane collection (8 percent), the castle mockup (6 percent), and the war scenes (6 percent). They identified twenty-seven displays with books mentioned as a display for the first time. The Pooh bear collection and the model airplane collection were both cited as second favorite by 15 percent of the third grade students surveyed. Live animals and the war scenes were mentioned by 7 percent and the dinosaur scene and model car collection were mentioned by 6 percent. The third grade students identified twenty-six displays and, like the fourth graders, tended to take individual parts out of a collection, for example, the shark from the sea collection or the turtle from the pond collection. They did cite a live snake, the only class to do so, which had been on display in the library eighteen months before this survey was taken. The young rat snake stayed in the library for about eight weeks.

The third favorite display listed by this class was the houses in literature collection. This unit was one in which the fourth grade had participated but had not mentioned. However, it is noted that it was cited by 15 percent of the third grades as third favorite. The model

airplane collection was mentioned by 9 percent and the live animal collection by 8 percent. Thirty displays were identified, three of which were bulletin boards.

The third graders listed twenty-nine displays in the fourth favorite category. The Pooh bear collection accounted for 11 percent of the mentions, model airplane collection 10 percent, and the live animal collection 9 percent. At this level, the students tended to list the displays in categories, and unlike the fourth grade, with little mention of specific items in the collections.

The fifth favorite listed the live animal collection by 10 percent of the students in this grade. The Pooh bear collection was cited by 9 percent and the circus diorama was mentioned by 8 percent with the twenty seven other identified selections divided rather evenly. The story toy collection, one specific miniature house (the gingerbread house) and the shark all received 6 percent of the votes. Posters were mentioned but no bulletin boards were specified.

The third grade students showed a great preference for the live animal collection. Using a weighted scale, their other preferences in order of preference were: model airplane collection, Pooh bear collection, war scenes and the story toy collection. This class had the only mention of a specimen which had been in the library eighteen months earlier.

Second grade. In order to eliminate writing and spelling difficulties which might tend to inhibit students, the second graders were asked only to draw their favorite display. Displays were defined

as anything put in the library or outside the library doors which was placed there to catch their interest and attention. It was further defined as groups of things, pictures of things, pretend things or real things. They were instructed to do their own remembering. They were also instructed to draw no more than five displays that they liked in the library in the amount of time scheduled. Paper and crayons were passed around to each child.

At this grade level, the mockups of the tepee, castle and log cabin were outstanding favorites. Fifteen percent selected the tepee, 15 percent selected the log cabin and 12 percent selected the castle. The model airplane collection also was mentioned by 15 percent of the students. The model car collection received 10 percent of the citations. The second graders identified thirty one displays including specimens from collections. The live rabbit from the animal collection, the butterfly section from the insect collection and the houses in literature all were cited by 6 percent of the students while the Japanese flag from the Japanese artifact collection, the fish from the pond collection, the turtle also from the pond collection all received 5 percent of the student vote. The drawings were vivid and the recollections quite clear. In many cases, the items noted were drawn in their setting. For instance, the tepee was drawn with a background of books in the bookcases just as it was placed in the library. Posters which had been fastened above the bookcases were also drawn in great detail. One child drew the "whale" bulletin board, many children drew all five choices, often labeling or numbering them. The second graders took very few

liberties with their drawings being careful to note the decorations on the tepee, the turrets on the castle and the water bottles in the animal cages.

First grade. Ninety four first graders provided this study with pictorial preference as to library display. As with the second grade, they were instructed as to the meaning of display and were then given paper and crayons to use. Their drawings were at times more fanciful than the second graders in that they drew exhaust from model airplanes, bullets firing from guns in the war scenes, however, they also tended to be precise in other details. Winnie the Pooh bear was always shown with a red sweater and Paddington, always had on a big yellow hat. The first graders identified thirty displays which included some specimens, which caught their attention. The children drew replicas of a poster by Brian Wildsmith of woodpeckers on a stump. The poster had been in the library several weeks before but had been removed before this survey. The most drawn display was the model airplane collection with 23 percent of the first graders identifying it. The tepee was indicated by 15 percent, the story toy, the Happy Lion, was mentioned by 12 percent while the war scenes, the Pooh bear collection, houses in literature all received 7 percent of the notations. Six percent of the students drew the live mouse, Ralph, and one student also drew the cover of the book he checked out, *The Mouse and the Motorcycle* by Beverly Cleary. The carefully and correctly colored rabbit was cited by 5 percent of the students.

Weighted Data

In order to measure the survey data and determine the true preference in display in the school library, a Likert technique was used to produce a scale based on item analysis. Numerical values were assigned arbitrarily to the item responses and these values were summed to secure scores which were then interpreted as indicating the attitude of the respondents. This utilization of a weighted scale produces a reliable result in attitude measurement (Young, 1966). In a five point continuum, weights of 5, 4, 3, 2, and 1 were assigned in order to first choice, second choice, third choice, fourth choice and fifth choice. The results were then charted on a bar graph. The display preferences were consistent across the four grades (Grades 3-6) with the most positive response given to the live animal collection. Model airplanes, Pooh bear collection and model cars were also given favorable response in all grade levels as seen in Figures 1-4.

Bulletin Board

The students were asked to describe or identify their favorite bulletin board and additional space was given with the notation that if the student had more than one favorite board, to note them in order of preference. This was to determine recall as well as preference.

Sixth grade. The sixth grade students identified twenty-seven bulletin boards. All but one had been displayed during the school year of this study. Fifty two students could describe the bulletin boards using the main figure as their reference while twenty students could

Display

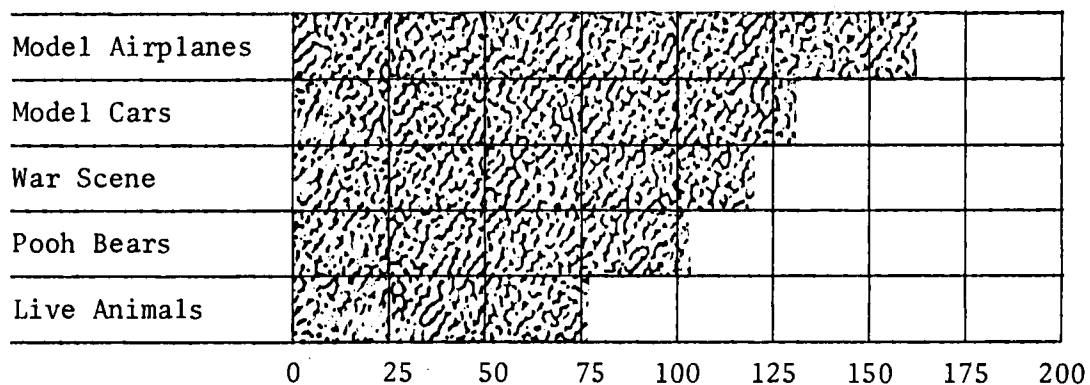


Figure 1. Sixth grade display preference using weighted scale.

Display

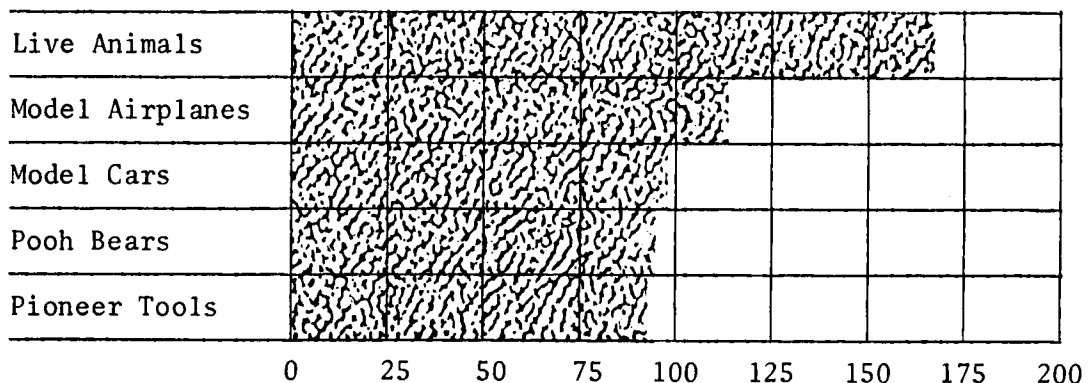


Figure 2. Fifth grade display preference using weighted scale.

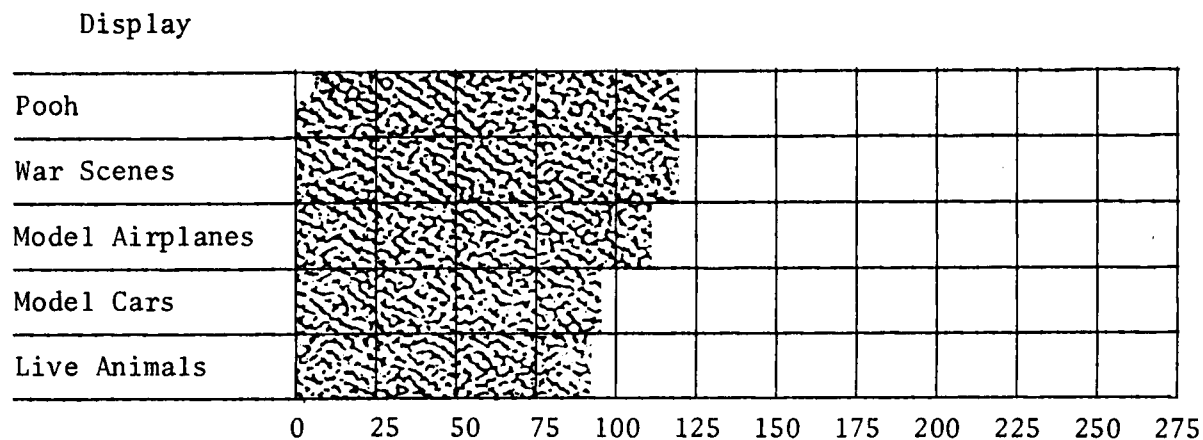


Figure 3. Fourth grade display preference using weighted scale.

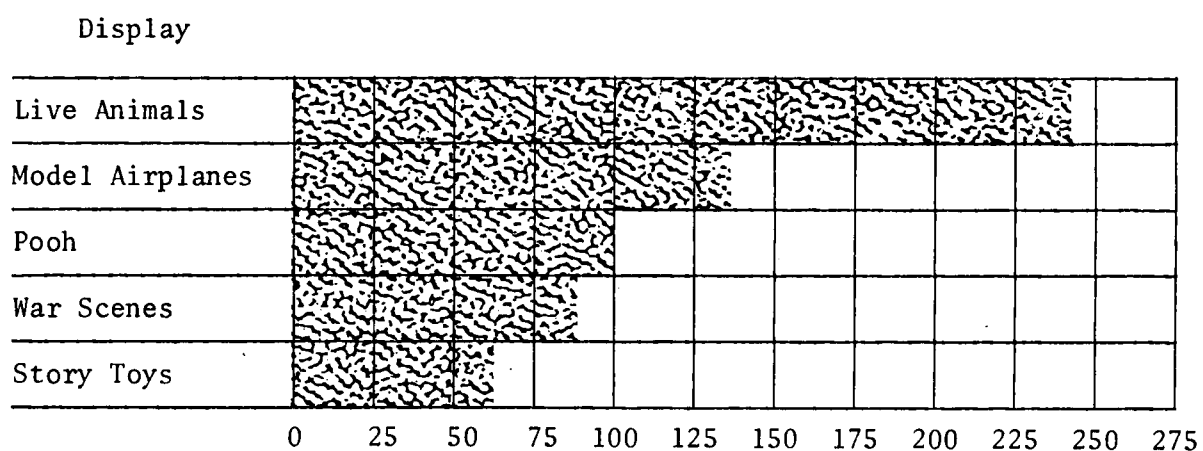


Figure 4. Third grade display preference using weighted scale.

recall one or more of the captions. Four students could not remember a single bulletin board while twenty four students cited only one. Table 1 shows bulletin board preference and time elapsed before recall.

Table 1. Sixth grade bulletin board preference and recall time.

Bulletin board	Recall time	Percentage student responses
Dragon	20 weeks	31
Memories	1 week	16
Whale	2 weeks	16
Pooh	28 weeks	14
Alice in Wonderland	12 weeks	13

Fifth grade. The fifth grade students identified twenty-two bulletin boards which were shown during the year of the study. They also identified three boards which were used in the preceding year. When asked to describe their favorite bulletin board, four students did not answer the question. However, the class averaged 2.3 citations of bulletin boards remembered and preferred. Seven students could not identify a single board. Forty-five percent could recall three or more boards. Only seven students could recall captions. The others identified the boards only by the main figure. Table 2 shows the bulletin board preference and time elapse before recall.

Fourth grade. Twenty-four bulletin boards were remembered and identified by fourth grade students with the favorite being the "whale" board. Thirty-four percent of the fourth grade students recalled this

Table 2. Fifth grade bulletin board preference and recall time.

Bulletin board	Recall time	Percentage student responses
Whale	2 weeks	14
Pooh	28 weeks	12
Alice in Wonderland	12 weeks	12
Memories	1 week	7
Charlie Brown	13 weeks	5

board. Of these, 83 percent remembered the caption exactly, "Catch a Whale of a Tale." Ten percent identified the main figure. One board was identified which had been displayed the previous year. Seven students indicated they could not remember any of the bulletin boards. Table 3 shows bulletin board preference and time elapsed before recall for the fourth grade.

Table 3. Fourth grade bulletin board preference and recall time.

Bulletin board	Recall time	Percentage student responses
Whale	2 weeks	34
Pooh	28 weeks	16
Alice in Wonderland	12 weeks	14
Memories	1 week	9
Dragon	20 weeks	9

Third grade. Third grade students identified twenty bulletin boards but appeared to have some difficulty in describing them. The students either had the caption in mind or a vague idea of the figure. The "whale" board brought a large variation on the caption such as

"Catch a Tale of the Whale" or "Catch a Whale by the Tale," "Whales Tales" and "Catch a Whale for a Tail." However, this board was cited by 35 percent of the third grade students as their favorite. No boards were identified from the previous year. Table 4 shows bulletin board preference and time elapsed before recall for the third grade.

Table 4. Third grade bulletin board preference and recall time.

Bulletin board	Recall time	Percentage student responses
Whale	2 weeks	36
Alice in Wonderland	12 weeks	28
Pooh	28 weeks	28
Memories	1 week	13

Book Selection

Only 18 percent of the sixth grade students said that they had checked out at least one book and could recall specific titles. Those displays which were most motivating for book selection at the sixth grade level were the ones focused on war scenes and the horse model display. Though the model horse display was cited as a first favorite by only 8 percent, it consistently placed at all five levels of preference. When asked for the books checked out because of a bulletin board, 21 percent said that they had. A bulletin board on Newbery Medal winning books captioned "Key to the Good Life—Reading" and the Winnie the Pooh board were cited as motivating specific book selection at the sixth grade level.

In determining the effects of the display and bulletin boards on book selection, nineteen fifth grade students did not answer the question. Ten indicated that they had not selected a book because of a display or a bulletin board. Six indicated that they had selected a book but could not remember the title and sixteen students cited titles selected due to a specific display. Twenty students cited bulletin boards which had influenced their book selection. The display which motivated the most books was the collection of live animals; especially cited was the rabbit. Twelve Pooh books were reported as checked out because of the "Pooh's News—Reading's Fun" board which was displayed seven months before the survey was taken. *Chitty Chitty Bang Bang* by Fleming was a title most checked out by those students who were influenced by "You 'Auto' Read These" bulletin board. A survey of the circulation figures show that three times more nonfiction books about cars were checked out than fiction on this subject. However, the boys who habitually read nonfiction materials about cars did not make the connection with the bulletin board or could not remember exact titles. They, more likely, are motivated to check out those materials solely on the basis of personal interest even though they cited that board as a favorite.

Fourth grade students identified thirty-four titles as having been selected due to a bulletin board or display. More titles were selected because of a story toy, Paddington, with Winnie the Pooh books second most chosen. Four books were selected because of the model car collection, and one fiction book selected because of the "You 'Auto'

Read These" board. The whale bulletin board was the motivator for the selection of books about the sea and the war scenes sparked interest in books about World War II. Thirty-five students made no reply to this question and three admitted that none of the displays or boards had encouraged them to check out specific books.

Pooh appeared first as a collection of bears and later as a bulletin board. The third graders were able to separate the two display techniques and specifically identified the Pooh bear collection as the motivation for selecting Pooh books. Seventeen books were selected because of the collection while four were selected because of the bulletin board. The dinosaur scene was cited as the motivator for selecting dinosaur books. Five students could not remember the titles of their books precisely although they could identify them. War scenes were responsible for four specific books being checked out although the students couldn't recall the titles, they remembered the author, C. B. Colby, who is well known for his books on weaponry. In all, forty-eight books were identified as having been selected because of a display and six because of a bulletin board. Three students answered that they had not selected any books because of the display or the bulletin boards and sixteen did not answer the question.

In determining the effects of the various displays and bulletin boards on student book selection, a chi square analysis was performed on numbers of books checked out because of a bulletin board or a three dimensional display. The data were compared to determine the effect of the two techniques (two dimensional display and three dimensional display) on book selection. The results are shown in Table 5.

Table 5. Analysis of comparison of two dimensional display and three dimensional display effect on book selection.

Grade	Total number of books checked out		Chi square
	Two dimensional display	Three dimensional display	
6	12	16	
5	20	22	
4	12	22	
3	6	48	
	mean 12.5	mean 27	17.317*

*p < 0.05

The value of chi square is 17.317 which indicates a significant difference between the effects of the two dimensional and three dimensional displays.

Interviews

The results of the interview are presented in terms of the questions on the interview guide.

Question 1: How many years have you attended Rocky Hill School?

The average length of time of the sixth grade student to attend the school was 4.8 years. Due to the fact that kindergarten classes were added to our school in 1973, the average length of time the fifth grade students had attended was 4.7 years. The average for the fourth grade was 4.0, the third grade was 2.9, the second grade 2.6 and the first grade average was 1.9 years.

Question 2: When you look at the bulletin boards on either side of the library door, what do you notice first, captions, figures, book jackets, background, overall idea or do you notice them at all?

The figure was most cited as the attention center with only the third grade students preferring the caption. Table 6 tabulates the answer to this question.

Table 6. Identification of preferred parts of bulletin boards.

Grade	Caption	Figure	Book jackets	Background	Overall idea	Do not notice
6	3	11	0	0	1	0
5	2	11	0	1	1	0
4	1	8	4	2	1	0
3	4	3	3	0	1	1
2	4	6	3	3	0	1
1	1	5	1	2	0	1

Question 3: What is the first bulletin board you remember?

Twenty-one of the students answered that they could not remember any board which had been displayed, eighteen students could remember bulletin boards which were displayed the previous month. Eight students could remember bulletin boards which were displayed two to three months previously. Eleven students recalled bulletin boards four to six months old and seventeen students recalled bulletin boards displayed seven to nine months before. Seven students recalled boards which were over one year old. The first grade was the only class which did not recall at least one year old board.

Question 4: Have you ever checked out a library book because of something you saw on a bulletin board?

The sixth grade group had checked out a total of eleven books which were identified by either title or subject. The fifth grade

students recalled twelve books and the fourth grade also recalled eleven books. The sixth grade and fifth grade students recalled a larger number of books by title, however, the total number selected by the fourth grade equaled that of the sixth grade. The third grade students were equally divided on book selection and no book selection due to the influence of a bulletin board. Second grade students recalled a large number of books selected by title and the first grade students were the only group which had more responses that reported that they had not checked out books than those that had checked out books because of a bulletin board. See Figure 5 for graphic representation of book selection as related to bulletin boards.

Question 5: What is on the bulletin board today?

The correct answers indicated that students are aware of the bulletin boards. The first grade students were less aware of the bulletin boards, however, the other grades showed a consistent awareness. Table 7 shows the pattern of recent bulletin board recall.

Question 6: What display technique do you like best?

To this question, the first and second grade students had difficulty in grasping the difference between display and display technique so that their preference in display was recorded only. Students in the other grades showed a greater preference for unmodified realia collections. The answers in these grades were tabulated as illustrated in Table 8.

Question 7: What display that you have ever seen in the library did you like best?

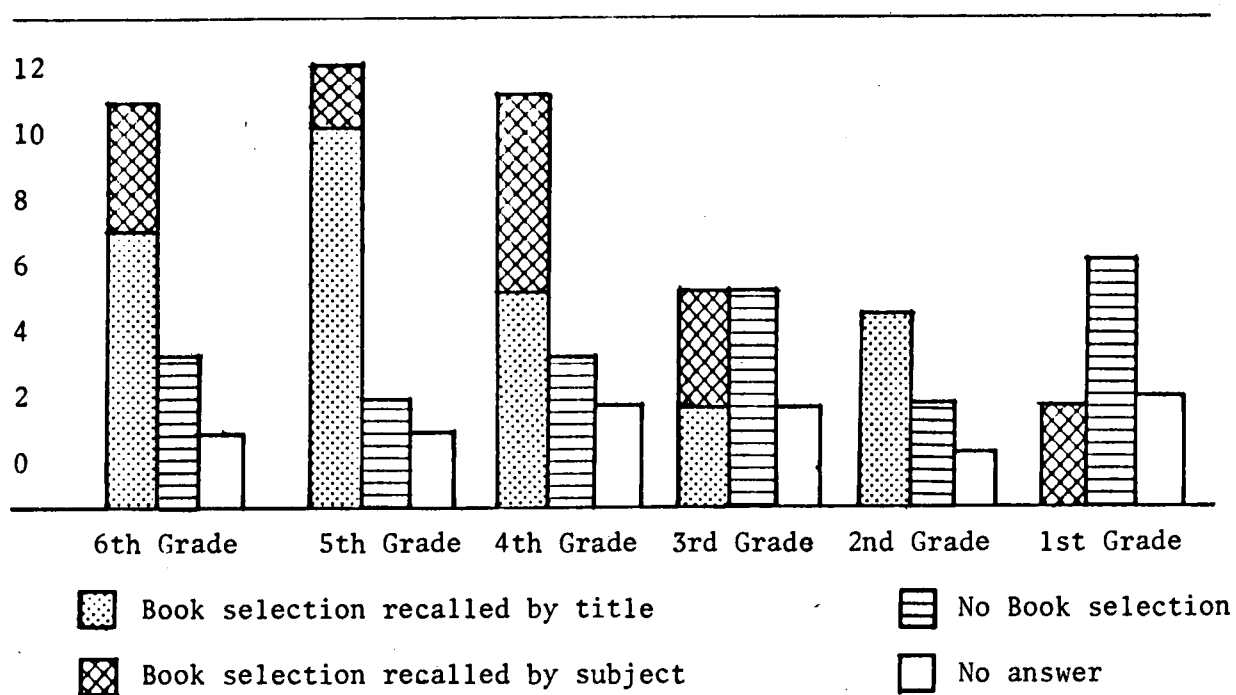


Figure 5. Book selection as related to bulletin boards.

Table 7. Bulletin board recall

Grade	Don't know	Correct	Incorrect
6	1	13	1
5	4	9	2
4	3	9	4
3	3	10	2
2	8	9	0
1	5	1	4

Table 8. Display technique preference

Grade	Collections					Bulletin boards	Books
	Modified realia	Unmodified realia	Sandtable	Mockup	Diorama		
6	3	9	2	0	0	1	0
5	0	7	3	3	0	2	0
4	4	7	3	1	0	0	1
3	1	4	2	4	0	1	0

The total number of answers in each grade level was tabulated and grouped for comparison. The display preference shows greatest response across grade levels for live animals, followed by war scenes, model airplane collection, Pooh bear collection and the log cabin mockup. Table 9 displays the answers numerically.

Question 8: Have you ever checked out a library book because of a display you liked?

Sixty percent of the sample of sixth grade students indicated that they had checked out at least one book because of a display and could recall either title or subject. They identified twelve books. About

Table 9. Display preference by grades.

Display	Grade					
	6	5	4	3	2	1
Live animals	5	3			7	3
War scenes	2	2	4	1		
Model airplanes	4	1	2			1
Pooh bears	1	2	2	1	2	
Log cabin		2	1	1	2	
Castle				3	1	
Japanese artifacts	1		1		1	1
Houses in literature		2	1	1	1	
Model cars			2	1	1	
Dinosaur scene			2			1
Pioneer tools	1	1			1	
Story toys			1			
Books only			1			1
Horse models	1					
Whale bulletin board		1				
Shark specimen				1		
Memories bulletin board				1		
Pooh bulletin board			1	1		
Tepee						1
Posters						1
Gingerbread house						1

the same percentage of fifth grade students checked out books, identifying ten by title or subject. Eighty-eight percent of the fourth graders interviewed indicated that they had checked out books specifically due to a display citing fifteen books. Forty-seven percent of the third graders had selected books citing eight specific titles and subjects. The second grade students had only 52 percent selecting books because of a display. They identified nine books by title and subject while 30 percent of the first grades identified only 3 books by subject only. Figure 6 presents this data graphically.

Special Study

The special study of the book selection of third and fifth grade students as it related to display techniques produced data which were tested to determine if there was a significant difference due to display techniques. A linear model analogous to an analysis of variance was used to test statistical significance using a chi square analysis for third grade classes. A similar analysis was performed for the fifth grade level. The results are presented in Table 10 and Table 11.

The results of the analysis show that there was no significant difference on book selection due to theme of the literature unit or class but there was a significant influence due to display technique.

The results of the analysis for fifth grade book selection shows that there was no significant difference due to theme or class but there was a significant difference due to display technique.

Since difference between display techniques were significant, estimated means for three displays were calculated by the logit process.

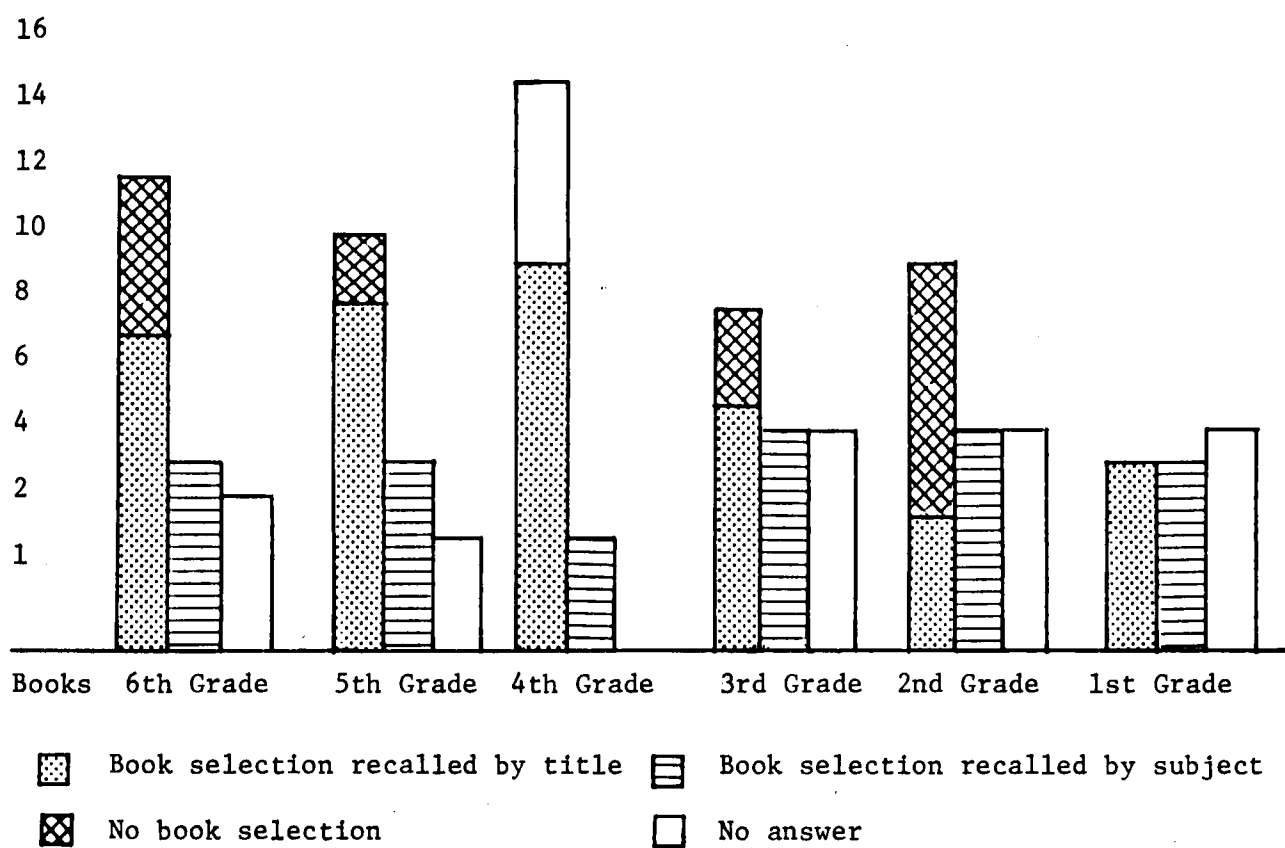


Figure 6. Book selection as related to three dimensional display.

Table 10. Analysis of display technique on book selection of third grade students.

Variable	df	Chi square
Intercept	1	92.51
Theme	2	0.40
Class	2	1.67
Display	2	5.64*
Residual	2	4.38

*p < .05

Table 11. Analysis of display technique on book selection of fifth grade students.

Variable	df	Chi square
Intercept	1	114.77
Theme	2	3.92
Class	2	4.92
Display technique	2	14.22*
Residual	2	4.44

*p < .05

The results showed that means for the third grade level display 1 (dioramas) were .178, display 2 (bulletin boards) were .149 and display 3 (books only) were .067. At the fifth grade level the estimated means for the three displays were .264 for display 1 (dioramas), .080 for display 2 (bulletin board) and .124 for display 3 (books only). In both cases, dioramas or three dimensional displays, are significantly influential on book selection.

IV. SUMMARY

The survey instrument was designed with three sections to study student preference in library display, to determine student preference of bulletin boards and to determine if and which displays or bulletin boards were instrumental in the selection of books to read. The listing of preferences was also utilized to determine if the student could recall displays used in the previous year and thereby determine if three dimensional displays are retained in the memory for longer than one year. The findings were that students in grades three through six preferred the same displays. They selected the (1) live animal collection, (2) model airplane collection, (3) the Pooh bear collection, (4) war scenes, (5) model car collection, (6) pioneer tool collection, and (7) story toy collection. Grades one and two also listed these as top favorite displays adding the log cabin and tepee.

The survey asked for the students' preference in bulletin boards used in the library. This list was also to be a measure of recall. The students in grades three through six could recall twenty-seven of the thirty-five bulletin boards displayed during the year of the study. They could recall three boards used the year previous to the study and none before that time. The students selected six boards consistently as their favorites. They were the (1) whale board, (2) Pooh, (3) memories, (4) Alice in Wonderland, (5) the dragon board, and (6) the robot board. The findings were that there is no difference in bulletin board preference according to the grade level.

Section III of the survey asked for book selection as it related to bulletin board or three dimensional displays. The findings were that three dimensional displays were significantly more influential on book selection than bulletin boards.

The interview of a random sample of the school enrollment found that:

1. Students are attentive to bulletin boards.
2. The main figure of a bulletin board attracts the most attention.
3. Bulletin board recall is selective and there appears to be a high correlation between interest and recall.
4. Unmodified realia is the preferred display technique.
5. There does not appear to be a relationship between display preference and grade level.
6. There appears to be a high correlation between display preference and reading interests.
7. Three dimensional display recall is short term; a matter of months, not years.
8. Three dimensional displays are significantly more effective in motivating book selection.

In the special study of third and fifth grade students, it was found that three dimension display techniques are significant in book selection.

The interviews with a stratified random sample of students indicate that children do look at bulletin boards but their impact on memory depends on elements other than artistic design. The main figure used

in the bulletin board design was most cited as the attention gathering device. Student recall spans several months and is selective but not conscious of the time span. Most students could remember the bulletin boards which were displayed within a month of the survey, but the interest in the topic of the board seemed to be the major component in recall.

The concept of display technique was difficult for the first and second grade students to understand, therefore, that question was limited to the third, fourth, fifth and sixth grades. They showed a preference for unmodified realia collection with second preference for sandtable technique. The favorite display replicated the findings of the survey with the live animal collection being the favorite.

A special study was made of third and fifth grade book selection as it was related to display technique using two-dimensional bulletin boards, three dimensional dioramas and books. The findings were that there is a significant difference in the selection of books through the influence of techniques. The three dimensional technique was significantly more successful as a motivator for the selection of books at both grade levels.

CHAPTER V

CONCLUSIONS AND DISCUSSION

I. SUMMARY

The purpose of this study was to determine which of the commonly used library display techniques is more effective in motivating children to select books to read, which of the display techniques is more effective in evoking interest and to determine if there is a relationship of preference to grade level and which of the display techniques is remembered for a period of time. To investigate the effects of various display techniques, a survey instrument was developed to determine recall as well as preference of student at the six grade levels. The major areas of the survey questionnaire were:

1. Recall of various displays used in the library in the past years.
2. Recall of various bulletin boards used in the library in past years.
3. Book selection as it is related to various bulletin boards and displays.

These data were tabulated and grouped using the "Likert technique" (Young, 1966) of attitude scale procedures which is a technique of summated ratings.

An interview was conducted with a stratified random sample of students to provide supplementary data. A special study comparing the

motivational effects of three display techniques at the third grade level and the fifth grade level were statistically analyzed to determine any significant differences.

The sample was selected from the student population of Rocky Hill Elementary School, Knoxville, Tennessee. It was composed of 550 students in grades one through six. The students were asked to answer a survey questionnaire during this study about their preferences for various displays in the school library and their preferences for various bulletin boards. The third section of the survey asked for information about their book selection as it related to bulletin boards and displays. Students in grades three through six were given forty-five minutes to complete the survey in the library which had no displays in view. Students in grades one and two were permitted to draw their preferences in order to eliminate writing or spelling limitations. The survey was designed to determine the school library clientele's preferences as to display in the library and the impact of specific bulletin boards on memory and to determine which technique had an influence on book selection. The data were categorized, tabulated and grouped for study. An interview with a stratified random sample of the student population was used to provide supplemental information. These data were charted and graphed to present a visual representation of the preferences of displays, display techniques, bulletin boards, length of time for recall of bulletin boards and impact on book selection.

Circulation counts were kept for the special study of the book selection of the third grade and fifth grade classes as they related

to three display techniques, three dimensional, two dimensional and books only. The data were statistically analyzed utilizing the Statistical Analysis System (SAS) 79 using PROC FUNCAT, a procedure for fitting linear models to dichotomous data.

II. FINDINGS

The major findings of this study may be summarized as follows:

1. There was no wide difference in display preference according to a grade level. The findings of the study indicate that students in grades three through six were consistent in their display preferences. The most preferred display was the live animal collection, followed by the model airplane collection, Pooh bear collection, war scenes, model car collection, pioneer tool collection and the story toy collection. Grades one and two concurred with this listing adding as their top favorite, the tepee and the log cabin.

2. Bulletin boards are remembered longer than other display techniques. The primary grades were not asked to answer this part of the survey. The third, fourth, fifth and sixth grade students recalled 77 percent of the bulletin boards which were displayed during the year of the study. They also recalled three bulletin boards which were displayed during the previous school year. All of the displays which were identified were exhibited during the year of the study indicating that the recall of display is a matter of months and not years.

3. Unmodified realia collections evoked most interest as a display technique. The concept of display technique is difficult

for children to grasp. However, students in grades three through six identified unmodified realia collections as most interesting. The favorite display replicated the findings of the interview, with the live animal collection (unmodified realia) selected.

III. CONCLUSIONS AND DISCUSSION

Within the constraints and limitations of this study, the data seemed to justify the following conclusions:

1. Realia collections, modified and unmodified, are most effective in evoking interest, however, there does not appear to be a relationship of preference to grade level. The live animals, an unmodified realia collection, were most specified as display preferred by most students, regardless of grade level. Live animals appear to have universal appeal as an interest catching device, which in turn appears to create a favorable atmosphere for book selection. No research or articles were found which discussed the role of animals in libraries or classrooms. The results of this study tend to support the fact that small shelf pets have an educational role which has been overlooked to date. Although the live animal collection data showed clearly that it provided effective atmosphere for favorable attitudes, other realia collections were also very important to the school students. Modified realia, model collections, were specified as capturing student attention. It is noted that the model collections were, for the most part, student made. Another popular display technique which students identified as preferred, the war scenes in the sandtable, were also student prepared. It seems to

follow that student-made projects evoke much student attention. These data would indicate that perhaps student involvement precludes student interest. It should also be noted that the preferred displays also coincided with illustration preferences as listed by Gertrude Whipple (1953). Five displays were consistent favorites with the students across the grade levels. Only the second grade placed mockups in their list of preferences above the live animal collection, airplane collection, car models, war scenes and Pooh bear collection. The mockups provided a vicarious experience which appears to have been important in extending the boundaries of educational and life experiences. The first grade classes expressed an interest in mockups but not to the same extent evidenced by the second grade. The Pooh bear collection was identified as a favorite with all grades. The Pooh bear bulletin board attracted interest as did the books for selection. It is postulated that the figure of Pooh has become so popular through merchandizing by Disney Productions that it may present a convenient cue to recall and interest.

2. Two dimensional display are more readily recalled than three dimensional displays. No displays which were listed as preferred, were exhibited previous to the year of the study while three bulletin boards were remembered from the previous year. The data seem to suggest that two dimensional figures stay in the memory longer than three dimensional figures. It was determined that each of the identified bulletin boards in the favorite category had been displayed at various times throughout the year so that a consistent display pattern was not evident. The preferred and therefore remembered bulletin boards produced a response

among the students which interacted with their perceptual and attitudinal framework. Each of the main figures in the favorite category provided a cue to recall a previous personal experience. For instance, a musical play entitled *Alice in Wonderland* was performed at the school. Although the bulletin board and the play were not scheduled at the same time, it is possible that one influenced the recall of the other. The personal experience precluded a favorable attitude toward the bulletin board and aided its recall. This supports Krugman's theory (1975) that there is selective perception and input to retrieval from memory and that associated stimuli can trigger stimuli stored. These findings also show that "pretty" bulletin boards may visually enhance the learning area, but to be remembered and to have an impact, a bulletin board must have an associated stimuli or meaningful cue to produce a favorable attitude and response. This finding concurs with those of Watts and McGuire (1964). Displays, on the other hand, though they produce a more intense interest, attitude effects are likely to decay more quickly, perhaps due to the lack of reinforcing activity or repetition.

3. Three dimensional displays (dioramas) are significantly better motivators of book selection of elementary school children. Although school children are attentive to bulletin boards and can recall them for a longer period of time, they lack a personal connection with the student. As with Krugman's studies (1965) the lack of involvement seems to interrupt the personal involvement in book selection. The hands-on experience of students and three dimensional display permits a correlation between meaningfulness and learning attitude as suggested by

Dale (1961). The three dimensional display provide a "look and talk" focus to book selection in that it is a social endeavor rather than a solitary experience. The three dimensional seem to provide an aesthetic function which is important psychologically as its impact on the decor of the library permeates the learning environment.

This study has confirmed that children's interests and current affairs are an important consideration in motivating book selection. They play an influential role in both three dimension and two dimension display effectiveness. Therefore, librarians must become more aware of these interests if the library displays which they construct are to perform adequately and meet their educational goals. It should be noted also that the involvement of children in the construction of displays is an important experience which provides impact on their book selection.

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APPENDICES

APPENDIX A

LIBRARY DISPLAY SURVEY

The library has used many displays other than book displays. Can you list your five (5) favorite displays in the order in which you liked them best, beginning with your favorite.

1. _____
2. _____
3. _____
4. _____
5. _____

Can you describe your favorite bulletin board? If you have more than one favorite, list them in the order you liked them.

1. _____
2. _____
3. _____
4. _____
5. _____

Can you give the title or subject of a book you checked out because of one of the displays?

- | | |
|-----------------|-----------------|
| 1. (book) _____ | (Display) _____ |
| 2. _____ | _____ |

Can you give the title or subject of a book you checked out because of one of the bulletin boards?

1. (book) _____ (Display) _____
2. _____

APPENDIX B

INTERVIEW GUIDE

The library has used many types of displays to promote books and reading over the past six school years. It would help in planning other displays to find out what you liked best in displays and bulletin boards.

1. How long have you attended this school? _____
2. When you look at the bulletin boards on either side of the library door, what do you notice first, captions, figures, book jackets, background, overall idea or you don't notice them at all?

3. Searching back in your memory, what is the first bulletin board you can remember here at the library? _____

4. Have you ever checked out a library book because of something you saw on a bulletin board? _____
If so, what book? _____
5. What is on the bulletin board today? _____
6. What display technique do you like best? _____
7. What display that has been shown in the library in the past six years did you like best? _____

8. Have you ever checked out a library book because of something you saw or were reminded of by a display? _____
If so, what book? _____

APPENDIX C

SPECIAL STUDY

THEME	Grade 3 CLASS	DISPLAY TECHNIQUE
Rabbit	1	Diorama
Rabbit	2	Bulletin Board
Rabbit	3	Books only
Dinosaur	1	Bulletin Board
Dinosaur	2	Books only
Dinosaur	3	Diorama
Space	1	Books only
Space	2	Diorama
Space	3	Bulletin Board

	Grade 5	
Sports	4	Bulletin Board
Sports	5	Diorama
Sports	6	Books only
Space	4	Books only
Space	5	Bulletin Board
Space	6	Diorama
Horses	4	Diorama
Horses	5	Book only
Horses	6	Bulletin Board

APPENDIX D

5405 Riverbend Drive
Knoxville, Tennessee

Dear Parents:

In the library at Rocky Hill School, I have created many displays in order to attract children's attention to reading. At the present time, I am trying to determine what display or displays the children liked best and which motivated them to select books from the library.

I would like your permission for your child to help me determine the effectiveness of the displays by answering a questionnaire. This is a voluntary activity and your child is free to withdraw if he wishes and without prejudice. The questionnaire is anonymous. The results of the questionnaire will be used in my dissertation and no names will be used.

Please sign and return the form at the bottom of this letter. If you have any questions, please feel free to call me at home or at school. My home phone is 588-6284 and the school number is 691-0123. Thank you very much for your cooperation.

Sincerely,

Belva B. Holleman, Librarian
Rocky Hill School
1200 Morrell Road
Knoxville, Tennessee

I hereby give permission for my child, _____,
to answer a questionnaire about library displays. I understand my child
is participating in a voluntary activity and may withdraw without
prejudice.

Parent _____

Date _____

APPENDIX E

BULLETIN BOARD SCHEDULE

9/12/78	Elephants	Tons of fun
9/19	Tiger	Hunt a good book
9/26	Lion	These books are gr-r-reat
10/3	Bears	These bear looking at
10/10	Ghosts	Haunting books
10/17	Witches	Bewitching books
10/24	Cats	Cat tales
10/31	Dogs	Doggone good
11/7	Mouse	Mouse tales
11/14	Pooh	Pooh's news-reading's fun
11/28	Insects	Books to drive you buggy
12/5	Mouse	Ralph elected Santa Mouse
12/19	Mouse	Ralph wishes you a Merry Cristmas
1/2/79	Snowman	Frostie's favorites
1/9	Dragon	Draggin'?-Relax and Read
1/16	Japanese kites	From the land of the Rising Sun
1/23	Fairy tales	Books fit for a king
1/30	Tall Tales	Tall tales — long on fun
2/6	Patriotic	Many faces of February
2/13	Hearts	You'll love these
2/20	Key	Key to a good life — Reading
2/27	Charlie Brown	High flying books
3/6	Alice-Rabbit etc.	Join us in wonderland
3/13	Clowns	Don't clown around — Read
3/27	Rabbits	Hop into reading
4/3	Ducks	Foul weather friends
4/10	Pioneer	Horse and Buggy Daze
4/17	Indians	Tepee tales

4/24	Horses	Round up a good book
5/1	Robot	Far out reading
5/8	Car	You "auto" like these
5/15	Whale	Catch a whale of a tale
5/22	Photos	Memories
5/29	Dinosaur	You'll go for these in a big way
5/29	Tiger	Still hunting books!

9/12/77

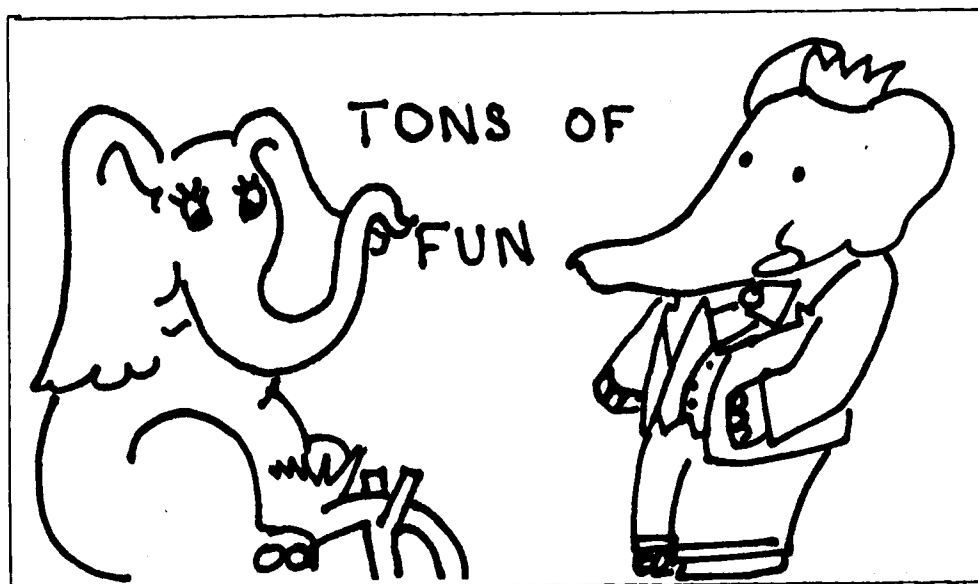
Background: Yellow

Figure: Gray textured paper

BABAR — green suit, gold crown

HORTON — yellow nest, brown branch

Caption: Bright blue



9/19/77

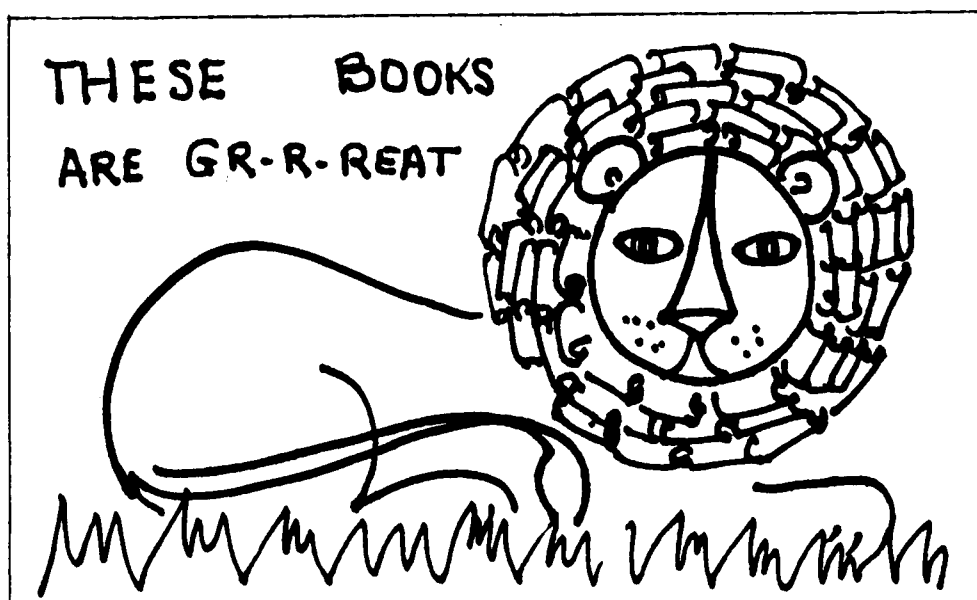
Background: Medium green

Figure: Orange with black stripes, white hat

Caption: Leopard contact paper



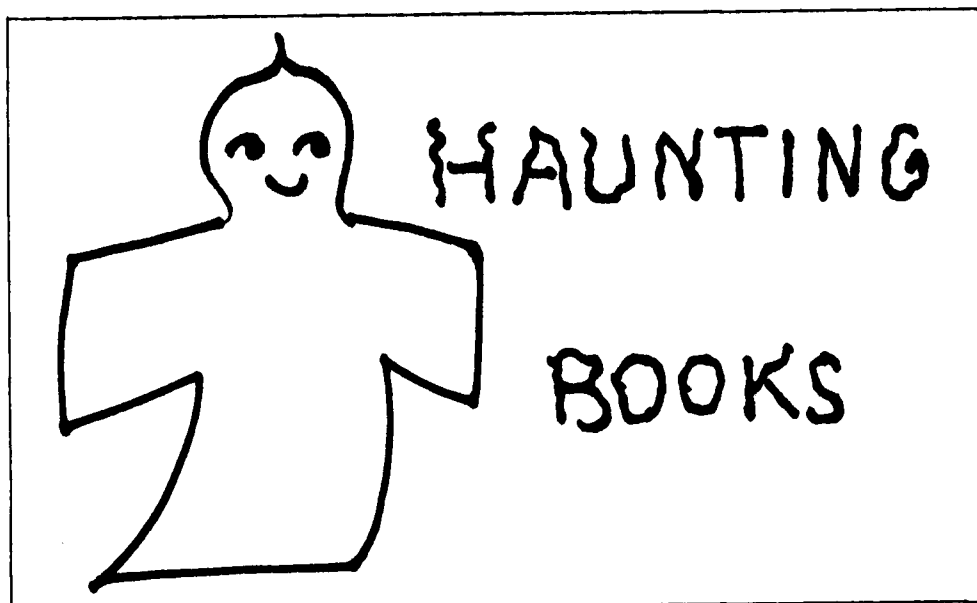
9/26/77 Background: Light blue with green grass
 Figure: Orange with mane paper sculpture, green eyes
 Caption: Green



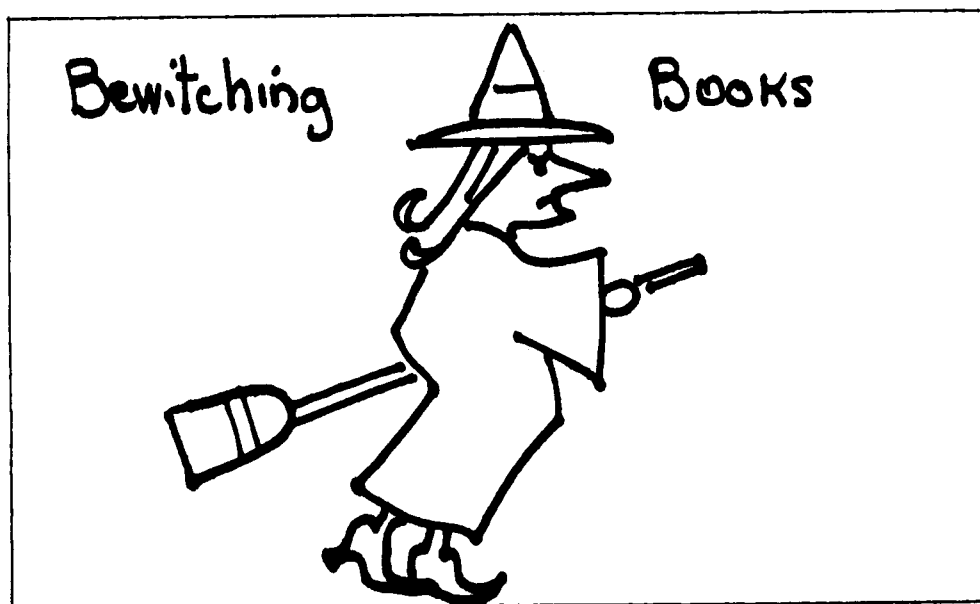
10/3/77 Background: Light green
 Figure: Two shades of brown and buff, black nails and nose
 Caption: Yellow



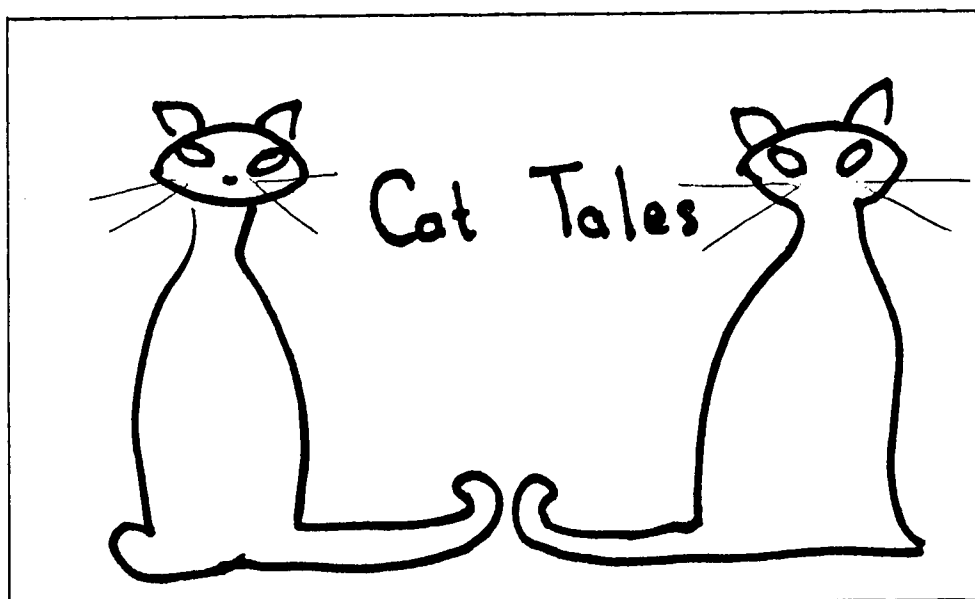
10/10/77 Background: Black
Figure: White string sculpture
Caption: White



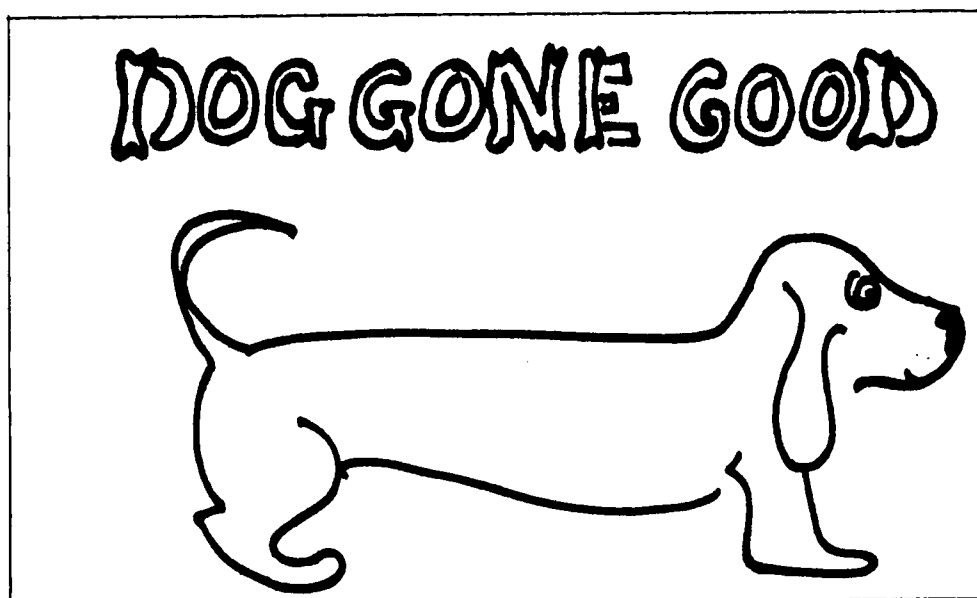
10/17/77 Background: Medium blue
Figure: Black with yellowish tissue skin, orange paper
sculpture hair
Caption: Orange



10/24/77 Background: Orange
Figures: Black shiny vinyl, green eyes
Caption: Green



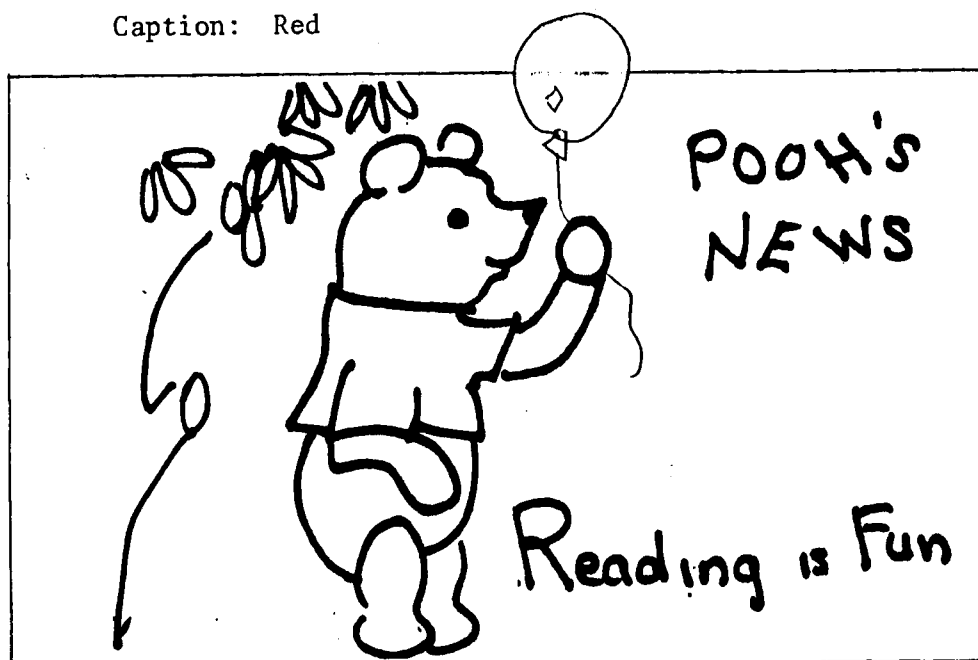
10/31/77 Background: Medium blue
Figure: Light brown fake fur
Caption: Off-white



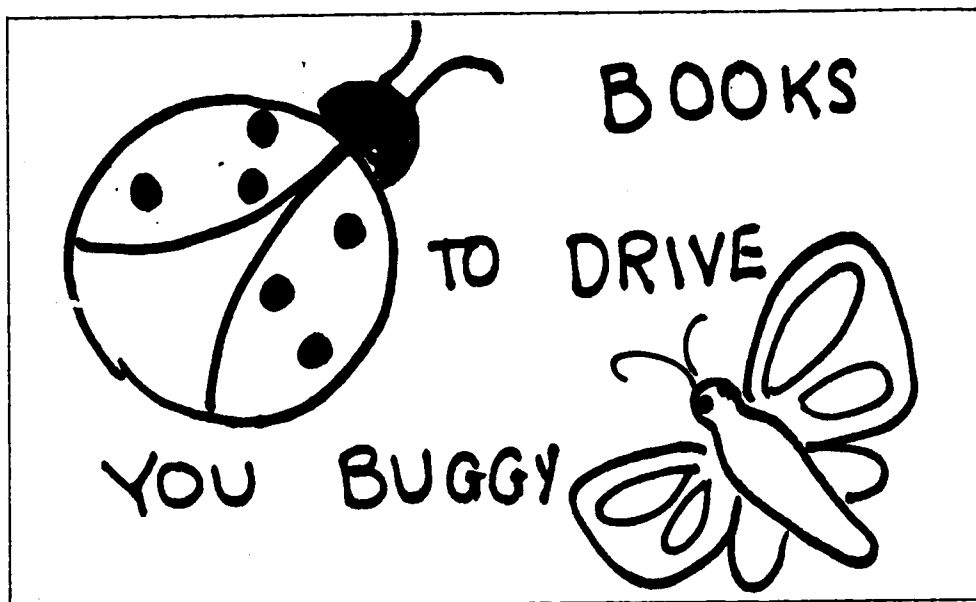
11/7/77 Background: Olive green
 Figure: Medium brown
 Caption: Orange



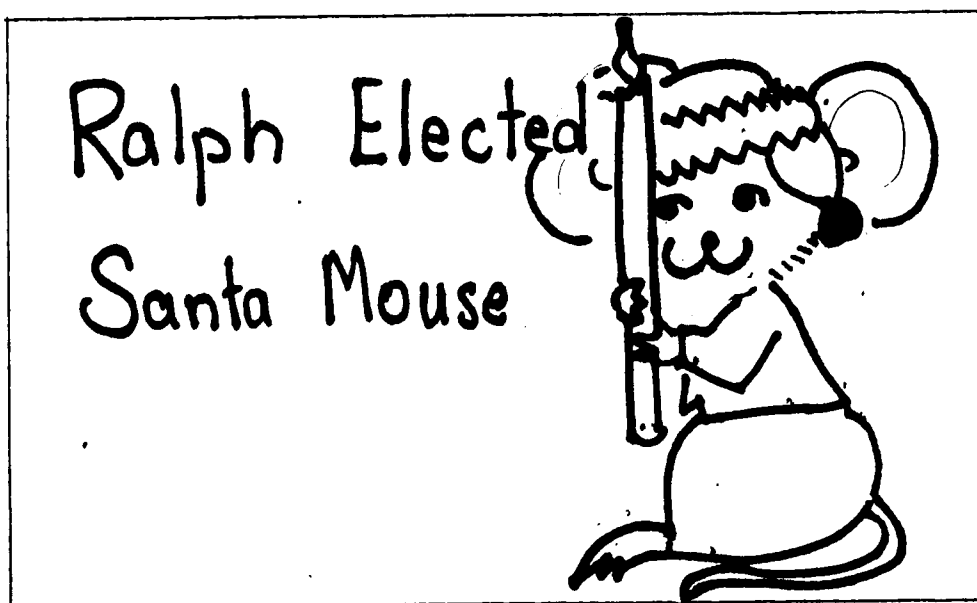
11/14/77 Background: Light blue, brown tree, green leaves
 Figure: Orange with red sweater, blue balloon
 Caption: Red



11/28/77 Background: Dark blue
 Figure: Lady bug, red with black spots
 Butterfly, pink with purple
 Caption: Yellow



12/5/77 Background: Red and white striped paper
 Figure: Light tan with red hat, green candle
 Caption: Bright green

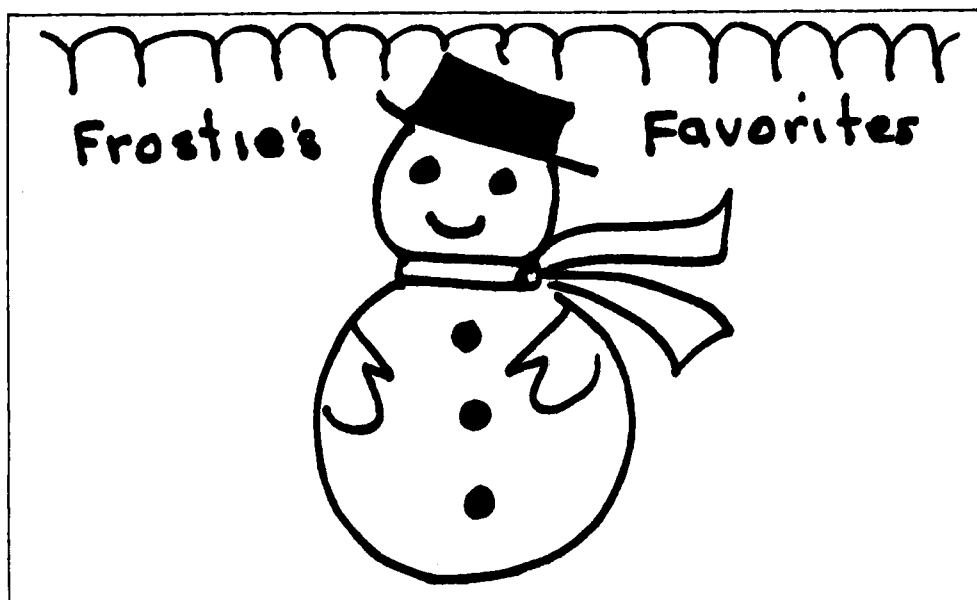


1/2/78

Background: Royal blue

Figure: White styrofoam, black hat, red scarf and mittens

Caption: Aluminum foil

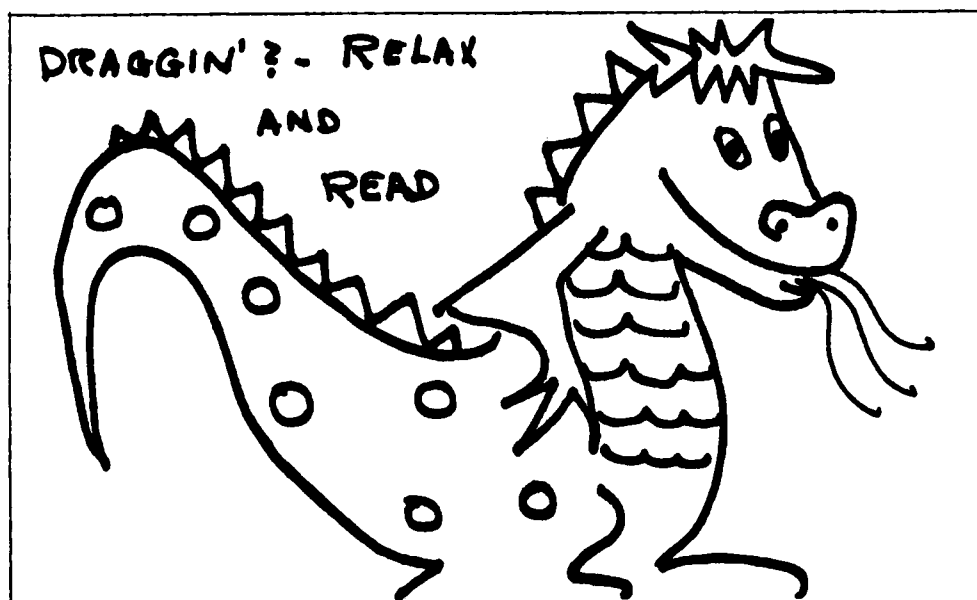


1/9/78

Background: Orange

Figure: Green scales, orange spots, pink yarn hair

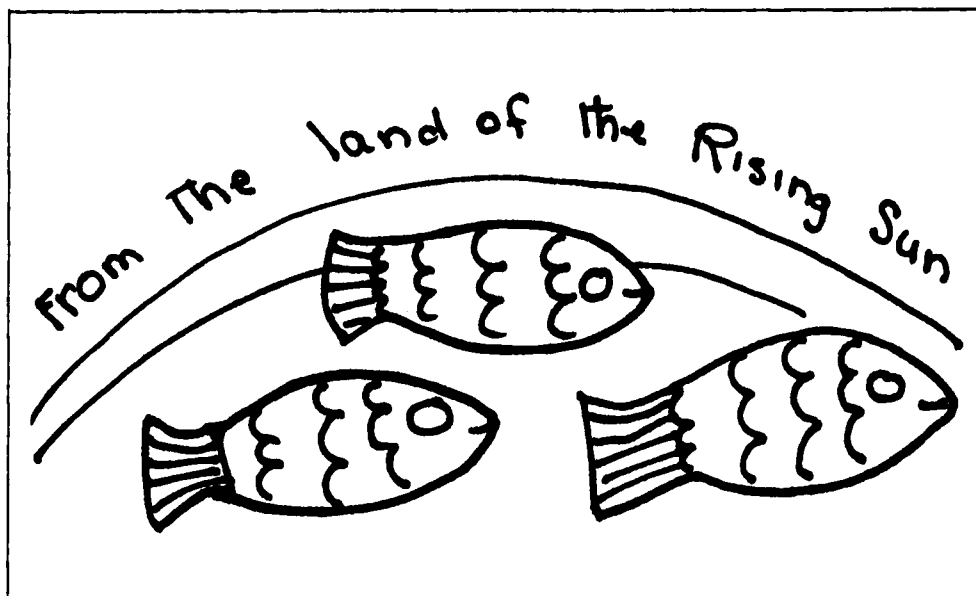
Caption: Bright green



1/16/78 Background: White with wide curved stripes of red and yellow

Figure: Purchased fish kites

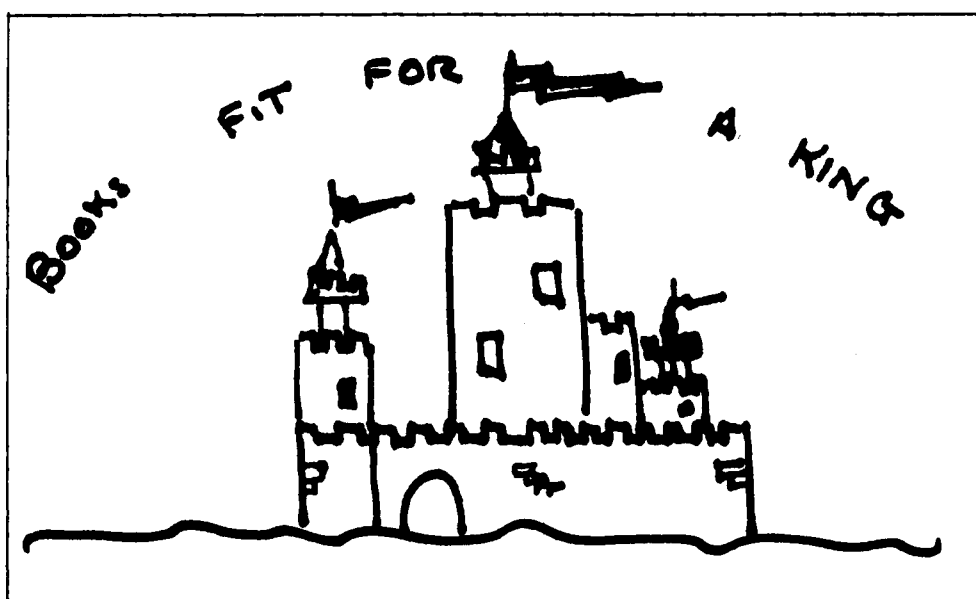
Caption: Bright blue



1/23/78 Background: Purple

Figure: White castle, red flags

Caption: Gold



1/30/78

Background: Light tan

Figure: P. BUNYAN — Red shirt, blue pants
 PECOS BILL — Brown pants, green shirt
 BABE THE OX — Bright blue

Caption: Dark Brown

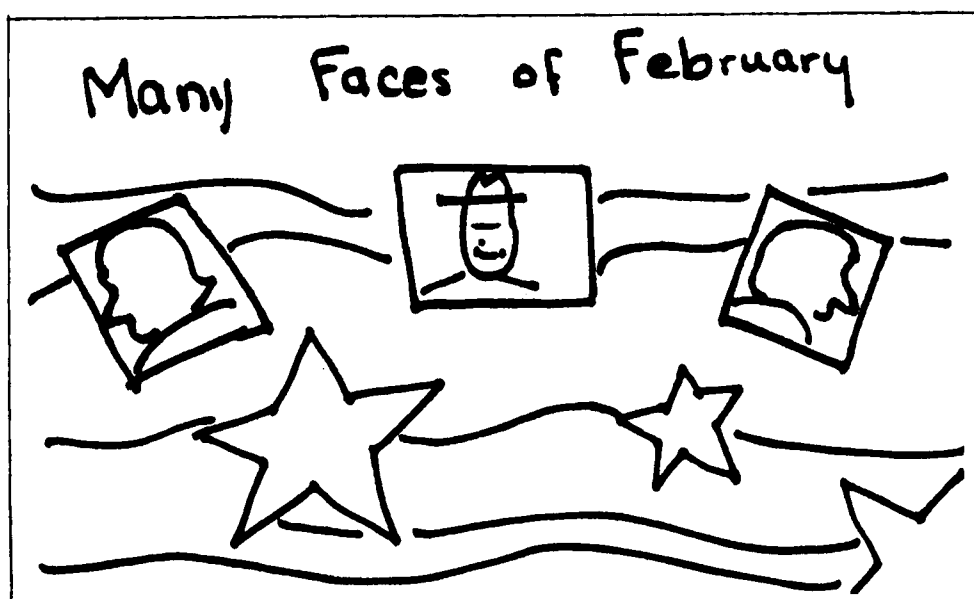


2/6/78

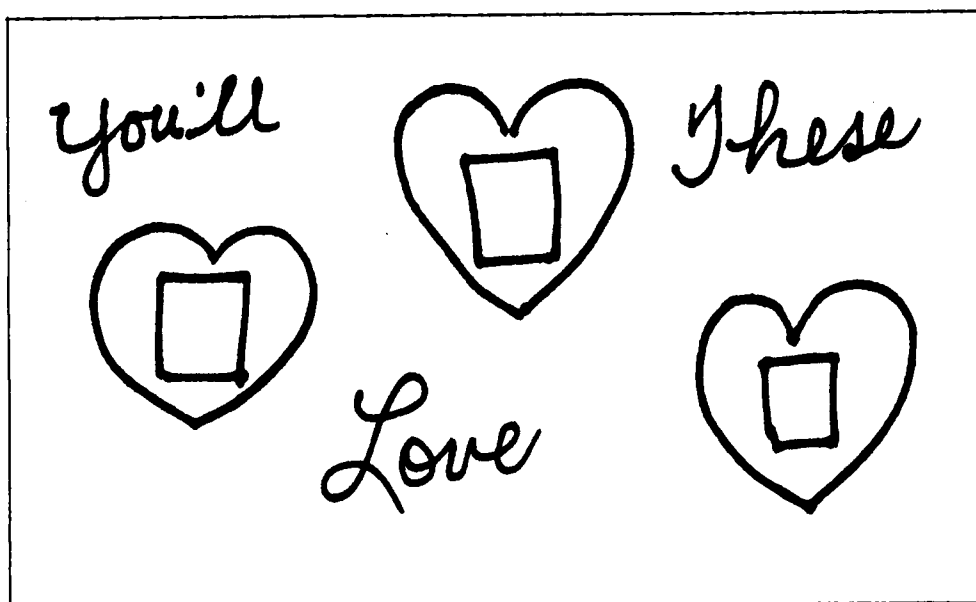
Background: Red and white stripes

Figure: Black on light blue

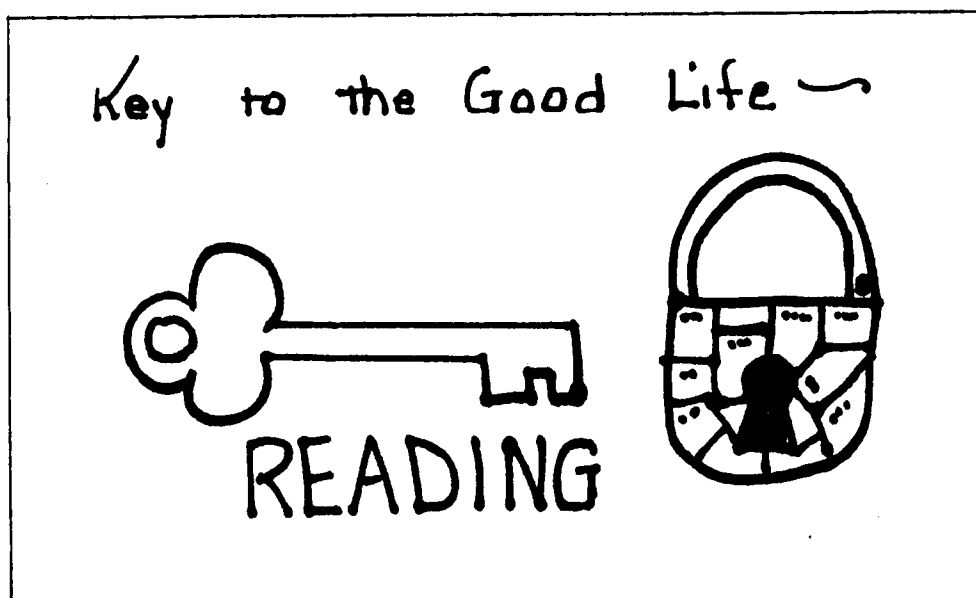
Caption: Royal blue



2/13/78 Background: Red and white striped paper
 Figure: Red with white lace
 Caption: Red yarn



2/20/78 Background: Purple
 Figure: Aluminum foil, lock covered with book jackets
 Caption: Pink

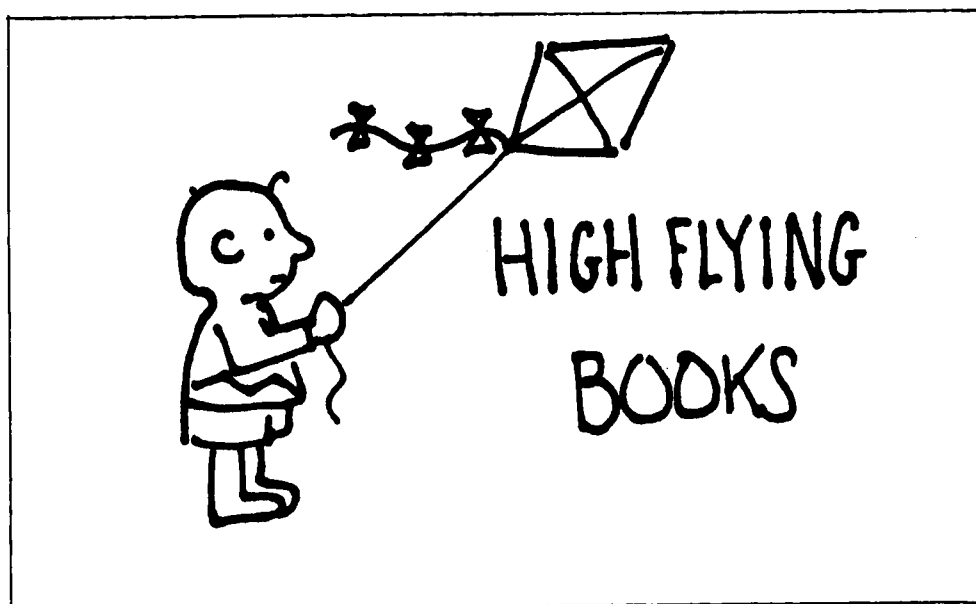


2/27/78

Background: Olive green

Figure: Yellow sweater, kite covered with book jacket,
tail red

Caption: Yellow



3/6/78

Background: Pale green

Figure: ALICE - Blue dress, yellow hair

WHITE RABBIT - Black coat

MAD HATTER - Green suit, green hat

Caption: Royal blue

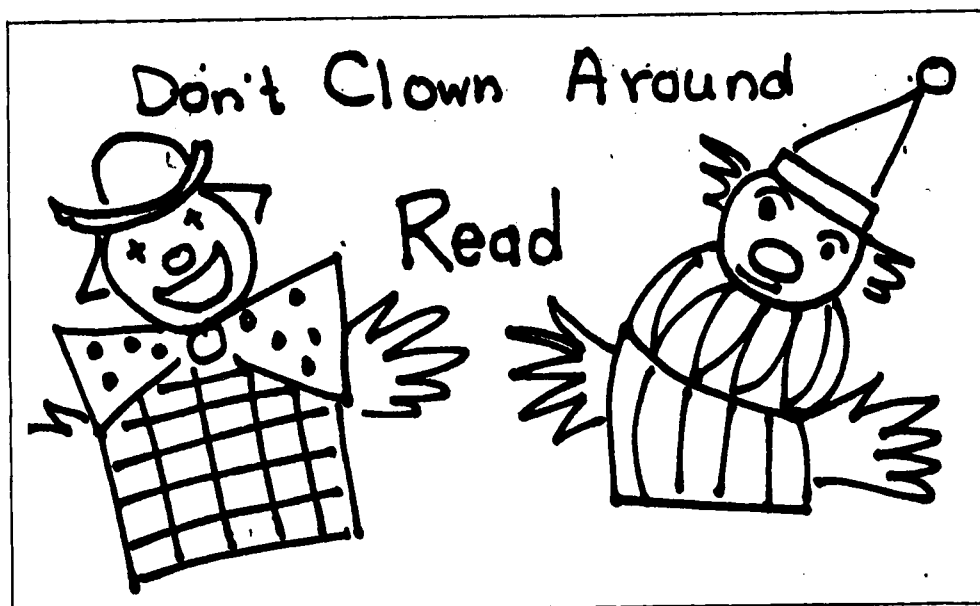


3/3/78

Background: Light blue, red and white tent border

Figure: Red and white makeup with black accents

Caption: Yellow

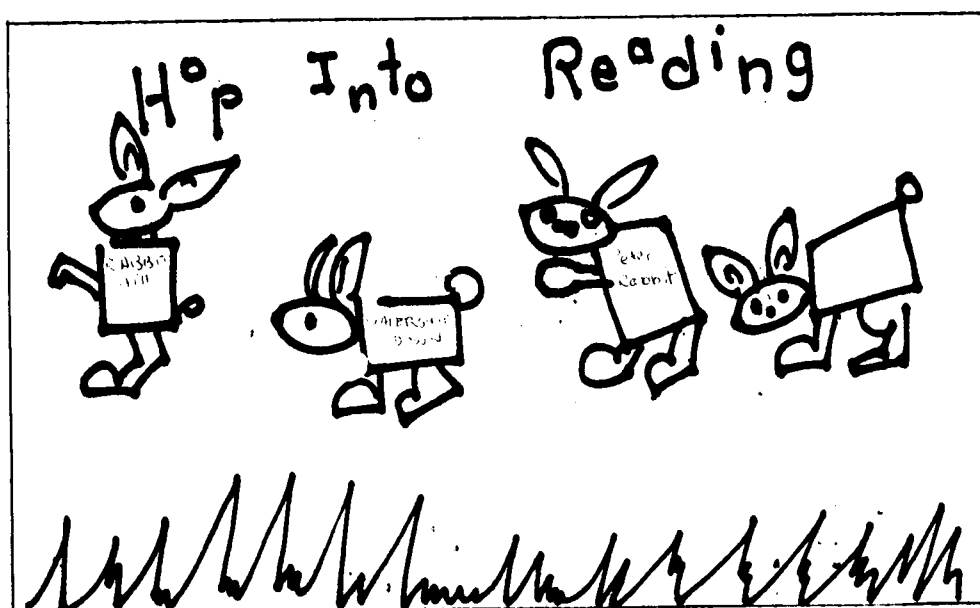


3/27/78

Background: Blue to pink striped tissue

Figure: White heads and feet, book jacket bodies,
white cotton tails

Caption: Pink

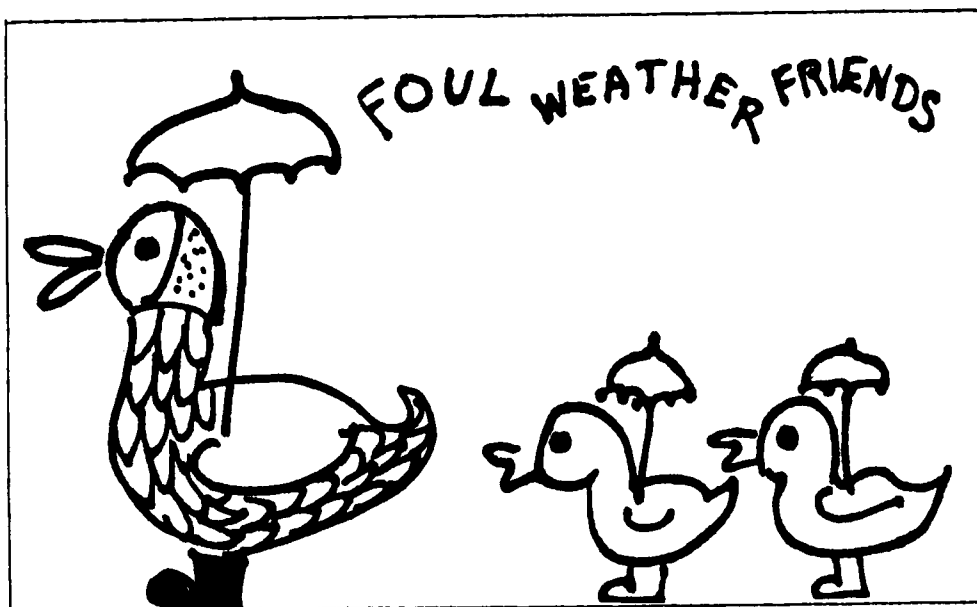


4/3/78

Background: Aqua striped tissue

Figures: White tissue feathers, small ducks, yellow umbrella red

Caption: Dark royal blue

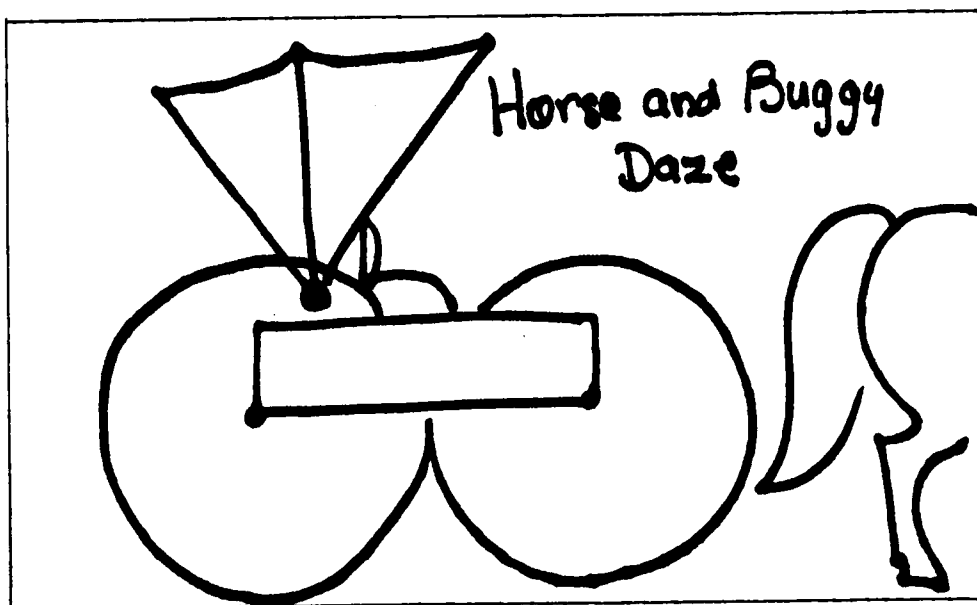


4/10/78

Background: Lavender

Figures: Black

Caption: Dark purple



4/17/78

Background: Orange

Figure: Kraft paper tan, decorations red, yellow and blue

Caption: Dark brown

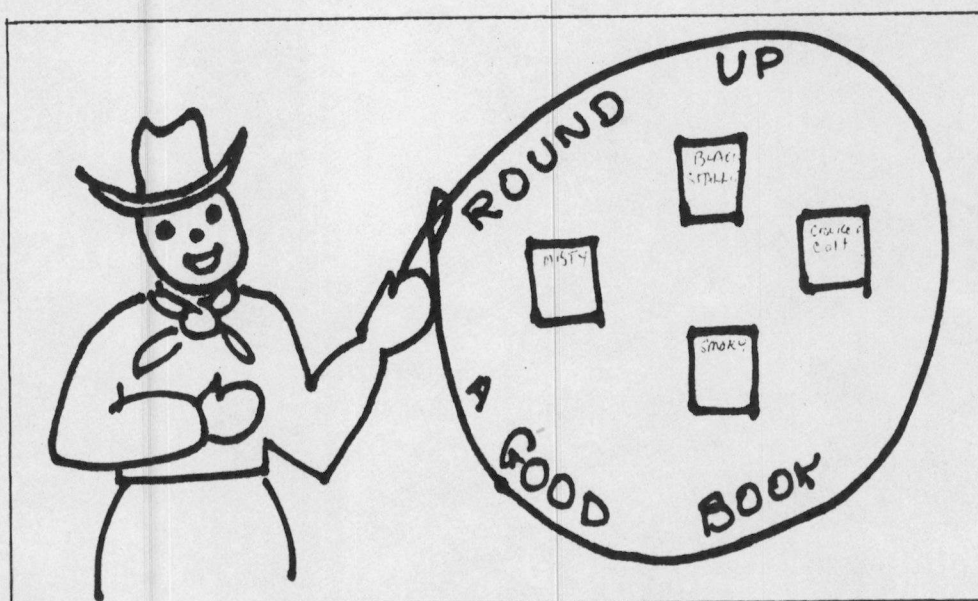


4/24/78

Background: Brown kraft paper

Figure: Red checked shirt, blue pants, white hat

Caption: Red

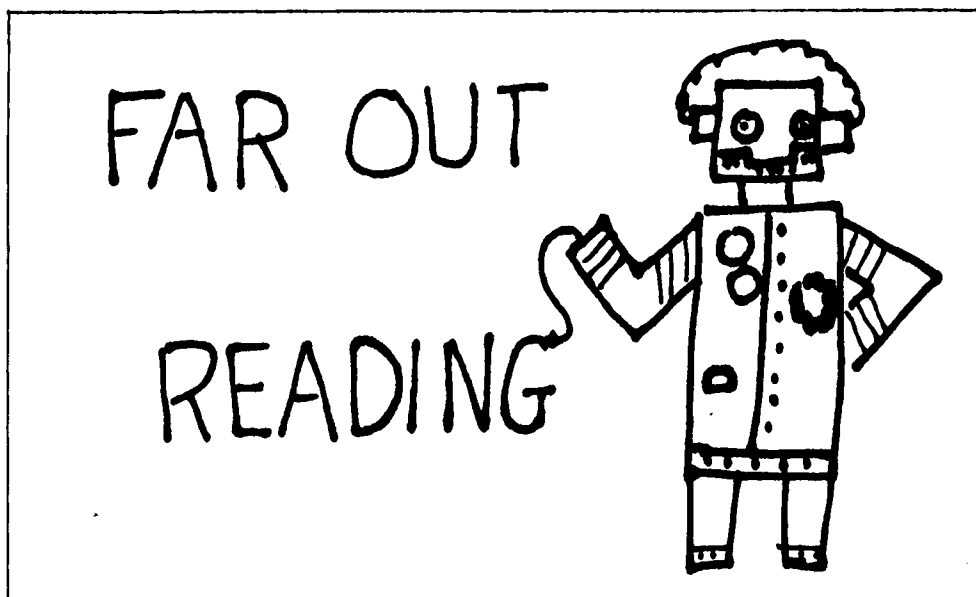


5/1/78

Background: Navy blue

Figure: Aluminum

Caption: White

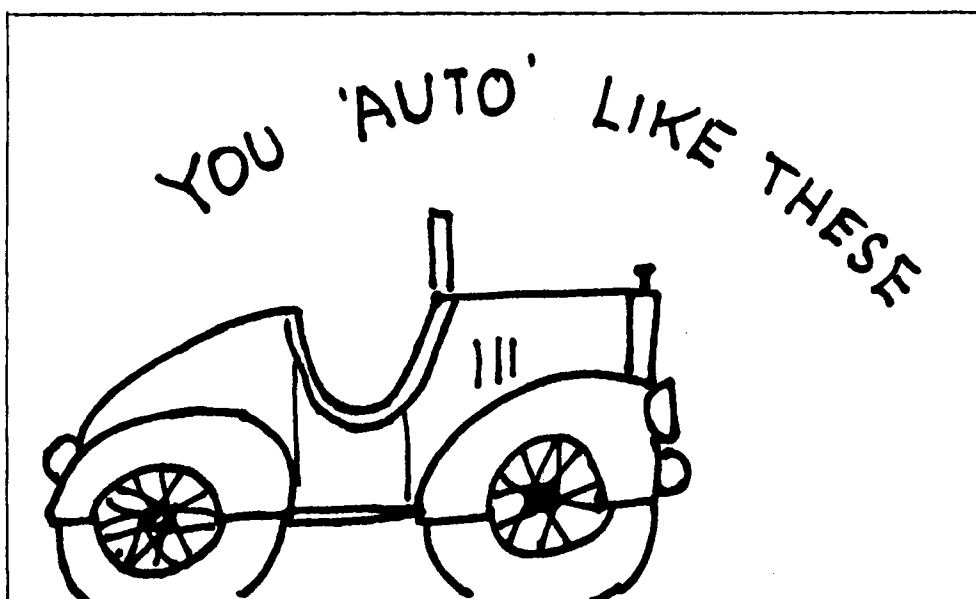


5/8/78

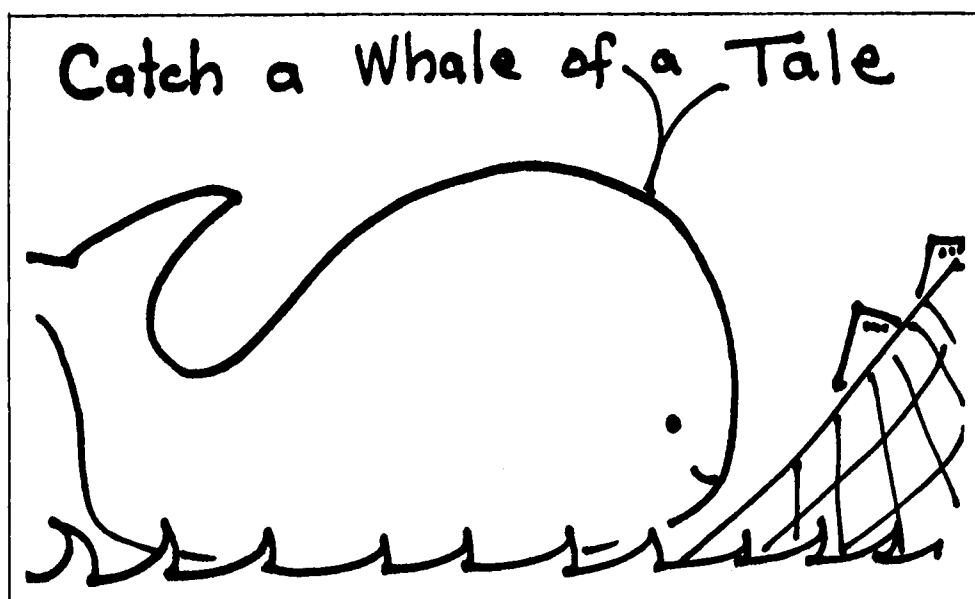
Background: White

Figure: Red with aluminum foil bumpers

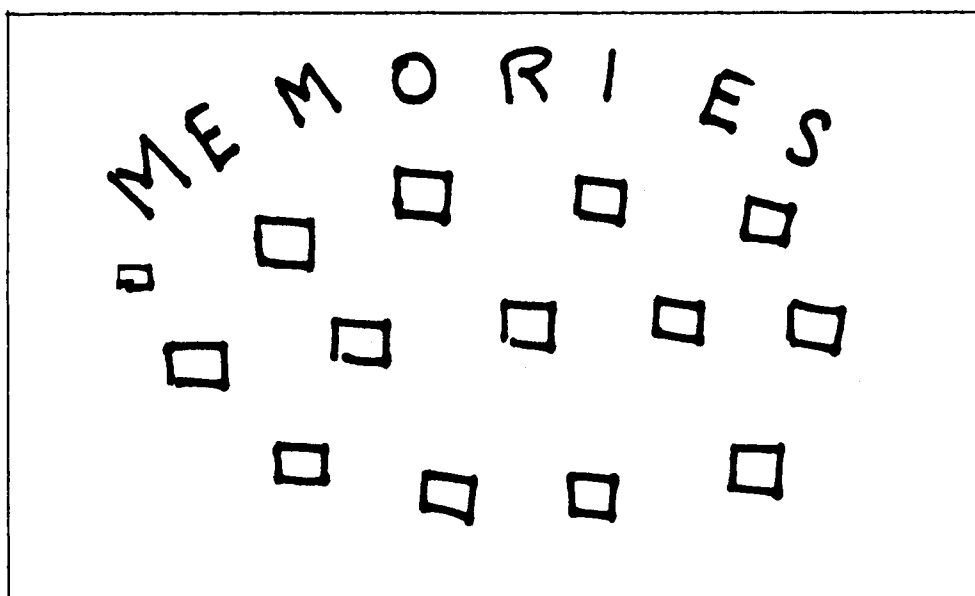
Caption: Black



5/15/78 Background: Aqua tissue, dark blue waves, orange net
 Figure: Black shiny vinyl
 Caption: Dark blue



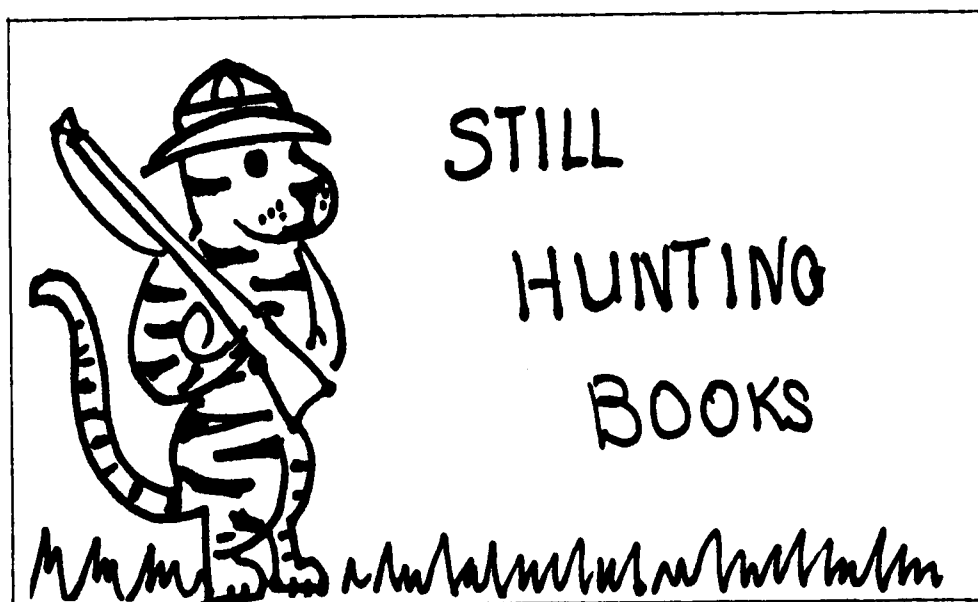
5/22/78 Background: Medium blue
 Figure: Colored photos
 Caption: Dark blue



5/29/78 Background: Orange
 Figure: Green stripes
 Caption: Aqua blue



5/29/78 Background: Green
 Figure: Orange with black stripes, white hat
 Caption: Black



APPENDIX F

THE DISPLAYS IN THE LIBRARY DURING THE STUDY

COLLECTIONS

Modified Realia

1. Model airplanes
2. Model cars
3. Horse models
4. Houses in literature

Unmodified Realia

1. Indian artifacts
Arrowheads, baskets, pottery, rugs, dolls, beadwork,
books written in Sioux and Cherokee
2. Pioneer artifacts
Building tools: broad axe, froe, adz, auger, block
sanders, horse shoeing equipment, corn grinders
Household tools: flat irons, sad irons, looms, quilt
frames, apple peelers, cherry pitters, bakers,
spinning wheels, yarn winders, churns
3. Quilts
Twenty three quilts of various patterns including the
Dutch Doll, Double Wedding Ring, Dresden Plate, Log
Cabin, Fan, Bow Tie and Crazy Quilt
4. Japanese artifacts
Fans, shoes, cricket cages, dolls, tea service, saki
jugs, clothings, currency, kites, kamishibai, toys
5. Pooh bear collection
Ninety two replicas of Winnie the Pooh. The oldest
Pooh on display was 36 years old.
6. Story toys
Stuffed toys of story characters: Curious George,
Peter Rabbit, Mrs. Tiggy Winkle, Jemima Puddle Duck,
Cat in the Hat, Jeremy Fisher, Babar, Celeste,
Paddington, Uncle Remus, Brer Rabbit, Happy Lion.

7. Live animals
Mouse named Ralph, Mouse named Miss Bianca, two Hamsters, two gerbils, two guinea pigs and a rabbit
8. Pond collection
Aquariums of turtles (red ear, painted and snapping), frogs, salamanders, crawfish, blue gill fish, tuffy minnow and a carp.
9. Sea shore collection
Twelve specimen bottles containing crabs of various kinds including fiddler, horseshoe and hermit, lobsters, shrimp, a sand shark, shark teeth and a sea turtle rib
10. Shell collection
Twenty four specimens of shells such as conch, sand dollars, starfish, sea urchins and augers
11. Insect collection
Two cases, illustrated and containing 50 of the most common insects in Tennessee. Thirteen specimen bottles containing spiders, scorpions, ticks, centipeds and tobacco grubs.
12. Fossil collection
Fifty pieces of fossil rock containing vegetation, shells and trilobites
13. Witch collection
Eighteen witches collected from four countries ranging in size from 24" to 3" and hanging mobiles.

Mockups

1. Log House
2. Castle
3. Tepee

Dioramas

1. Circus
Open sided diorama — tents, performers and circus animals
2. Clown
Figure of a clown holding balloons

3. Horton hatches an egg
A scene designed to match an illustration of an elephant sitting on a nest in a tree
4. Madeline
A box scene showing an adaptation of an illustration from Madeline of little French girls and their teacher executed in a bead and cone technique
5. Charlotte's Web
A triangular scene with web made of thin black wire, words "terrific" woven in the web and spider made of a stone fastened in the center
6. Cinderella
A scene using a purchased coach and horses
7. Hitty
A china headed doll and a sampler arranged to match an illustration
8. Egg Tree
A branch painted white and planted in a large pan of sand with decorated eggs hanging from the branches to match an illustration in a book
9. Covered Wagon
A scene showing a camp site and covered wagon to depict a typical pioneer moving west
10. Cheshire Cat
A branch planted in a large pan of sand with a china Cheshire Cat in the branches
11. 'Twas the Night Before Christmas
A scene made in a nail keg showing the elements of the famous Christmas poem complete with a tiny china mouse
12. Mayflower
A scene using a model of the ship Mayflower and two pilgrim figures
13. Paddington
The figure of a story toy coupled with a doll suitcase and a marmalade jar to illustrate a story

Sand Tables

1. War scene
Infantry-fox holes, bits of trees and soldiers in various battle poses

Tank scene-model tanks in various states of destruction, wire tank traps, bits of trees
2. Farm scene
Barn, farm house, fences, models of farm machinery, pond barnyard animals and growing plants
3. Dinosaur scene
Jungle terrain with ferns, moss, rocks and bits of wood, a pond with growing aquarium plants and seven plastic dinosaurs of proportionate size

Posters

1. Brian Wildsmith's Twelve Months — 12 posters
2. Grabianski's Wild Animals — 8 posters
3. Beatrix Potter's Peter Rabbit and his Friends — 8 posters

VITA

Belva Bise Holleman was born in Uniontown, Pennsylvania, on October 22, 1928. She attended elementary school in Jenkins, Kentucky, and was graduated from Warren Harding High School in Bridgeport, Connecticut. She attended Washington State University, Pullman, Washington, and later attended the College of St. Francis, Joliet, Illinois, where she received a Bachelor of Arts in English in 1970. In 1974, she received a Master of Science in Library Science from The University of Tennessee, Knoxville.

In September of 1972, she accepted the librarianship of the Rocky Hill Elementary School, Knoxville, Tennessee, and was responsible for the library program for 620 students in grades Kindergarten through six. In 1975, she received the John Cotten Dana Award for public relations for Outstanding Elementary School Library Program. She entered the Graduate School of The University of Tennessee, Knoxville, and received the Doctor of Education degree with a major in Curriculum and Instruction in December, 1979.

She is married to R. Gordon Holleman and they have three children, R. Gordon III, Belva Elizabeth and John Marshall.