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A status study of the flannelgraph.

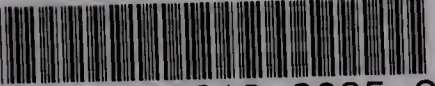
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A STATUS STUDY OF THE FLANNELGRAPH

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A STATUS STUDY OF THE FLANNELGRAPH

By
Frank P. Di Giammarino

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A problem presented in partial fulfillment of
the requirements for the Master of
Science Degree
University of Massachusetts
1956

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CHAPTER I

INTRODUCTION

Importance of the Study. American education today is designed mainly to assist the student in preparation for living. This living, however, is far more complex than the fathers of American education could ever have imagined, for life in an atomic age cannot even be compared to the life of twenty years ago. The technological progress has advanced beyond the nineteenth century so far that it led the late Mr. Einstein to comment that the war following the next one would be fought with bows and arrows. This comment gives the people a gruesome picture of what the future may hold for a careless world. This leads one to inquire what has been done to improve the educational processes so that future citizens will be ready with the tremendous amount of knowledge and skill required of an atomic age citizen.

It is a well known fact that the amount needed to be learned in our classrooms has increased many times. In the twentieth century, the world has been engaged in a number of struggles; wars have been fought, the atom has been smashed, and international organizations have been set up. Even though these facts must be so, the educational system is basically the same as it was in the Thirties. Leaders in the educational field are now realizing that something must be done to remedy the existing situation.

What can be done to improve the educational system so that the children of today will better be able to face

the world of tomorrow? One possible answer is to give the teacher better multi-sensory aids for teaching so as to increase the efficiency of the teaching-learning process. One such multi-sensory aid is the flannelgraph. Obviously the use of the flannelgraph will not entirely solve the problem of the learning process. However, the flannelgraph, efficiently used, can be one of the multi-sensory aids that will increase the efficiency of the teaching-learning process.

By definition a multi-sensory aid includes all materials which lead to learning through contact with two or more of the senses. These multi-sensory aids in the hands of the competent teacher, will succeed where verbal symbols failed; for by the use of such aids, learning will not only be made easier, but it will be remembered longer.¹ A method that does this can hardly be overlooked. Those in the teaching field of today must begin to realize what the leaders in the educational field have been expounding for years now. What the child learns, his skills, abilities, attitudes and appreciations is partly the result of his senses. The teaching process today must put the idea of integration into practice and begin to deal with the whole child.² The end result of such education may well mean that a much higher percent of the high schools' enrollment will continue on to graduation.

¹McKown, Harry C. and Roberts, Alvin B. Audio-Visual Aids To Instruction. New York: McGraw-Hill Book Co., Inc., 1949. pp. 23-24.

²Oberteuffer, Delbert. Physical Education. New York Harper and Brothers, 1951. p. 46.

Purpose of the Study. Multi-sensory aids then become one key to the future success of education in America. Even though Comenius, in the middle of the seventeenth century, started education in that direction with his "Great Didactic" and "Orbis Pictus" the educators that followed lagged far behind in the use of his methods. It is hoped that this study of the flannelgraph will suggest to teachers of all grades what can be done with a little cloth, scissors, coloring matter, cardboard, cement, and initiative.

Organization of the Study. Before concentrating on a study of the flannelgraph, it seems worthwhile to indicate the established place of multi-sensory audio-visual aids in education. Using this as a stepping stone, the next logical step would then be to move to a discussion of the value of unprojected pictorial materials. The known history of the flannelgraph will be given in Chapter III. Chapter III will also include pertinent information on the construction of the flannelgraph and the flannelgraph cutout. This information will be based on material received from educators and manufacturers of the flannelgraph. Chapter IV will consider two surveys dealing with the actual use of the flannelgraph in teaching. Chapter V will be concerned with summary and conclusions and a final evaluation of the study.

Procedure Used. The author initiated this problem with a study of pertinent educational literature to determine what the educators and manufacturers have learned about the flannelgraph as a teaching aid. The second step involved

the preparation of a simple questionnaire in order to gain knowledge of the flannelgraph in actual teaching situations. A sample questionnaire is included in the appendix. The questionnaire was given a trial run in the New Salem, Massachusetts, School System. The teachers in this school system answered the questionnaire with no difficulty. A reasonably representative sampling of Massachusetts School Systems was obtained by selecting the teacher-trainees from the University of Massachusetts as a means of distributing the questionnaires. The teacher-trainees carried the questionnaire to their respective school systems. A list of these school systems appears in the appendix. The analysis and reporting of results of the questionnaire is included in Chapter IV.

Additional information on the construction and use of the flannelgraph and the cutouts was provided by an analysis of the students in the Audio-Visual Course for beginners at the University of Massachusetts. The results of this analysis is also included in Chapter IV.

The study is culminated with a summary and conclusions based on the foregoing survey and analysis.

CHAPTER II

AUDIO-VISUAL AIDS IN TEACHING

Meaning of Audio-Visual Aids. "In this kind of communications climate, one in which radios, television, picture magazines, motion pictures, the outdoor billboard, and all manner of electric spectaculars flashing at youngsters as they go to and fro from their homes; young people face an unprecedented demand for their attention."¹ Teachers today are living in this kind of climate and competing with all these various stimuli. What are they doing about it? In too many institutions they are still using textbooks which are the results of 1935 curriculum planning, 1940 publication plans, 1945 evaluations and the last five years of classroom use. In spite of all the new learning devices, schools today are still about eighty percent reading schools.² If school instruction is to become more meaningful and to compete with this present type of communications climate, audio-visual aids must be used to make the pupils' experiences more varied and more interesting.

What are audio-visual aids, then? Most people would be quick to answer -- motion pictures. However, they are not the only audio-visual aids available to the classroom teacher, nor are they the most widely used.

¹Harclerod, Fred and Allen, William. Audio-Visual Administration. Dubuque: Wm. C. Brown Co., 1951. pp. 5-6.

²Ibid., p. 6.

In Visualizing the Curriculum a visual aid is said to be, "any picture, model, object, or device which provides concrete visual experience to the learner for the purpose of (1) introducing, building up, enriching, or clarifying abstract concepts, (2) developing desirable attitudes, (3) stimulating further activity on the part of the learner."³ Edgar Dale in, Audio-Visual Methods in Teaching, refers to audio-visual aids as all those "materials that do not depend primarily upon reading to convey their meaning."⁴ McClusky, states that "audio-visual instruction emphasizes the value of concrete or non verbal experience in the learning process."⁵ Even though the above definitions are seemingly different, basically they all agree on the same thing; namely, that audio-visual aids are more than motion pictures and filmstrips. With the exception of materials that depend primarily upon reading to convey their meaning, audio-visual aids include any device that assists an instructor in transmitting to a learner skills, attitudes, knowledge, understanding, and appreciation.

Although audio-visual aids are good supplementary materials, they are not ends in themselves. Audio-visual aids

³Hoban, Charles F., Hoban, Charles F. Jr. and Zisman, Samuel B. Visualizing the Curriculum. New York: The Cordon Co., 1937. p. 9.

⁴Dale, Edgar. Audio-Visual Methods in Teaching. New York: The Dryden Press, 1955. p. 3.

⁵McClusky, F. Dean. Audio-Visual Teaching Techniques. Dubuque: Wm. C. Brown Co., 1949. p. 1.

will furnish the stimulus to go to textbooks and to the teacher for information and help.

Importance of Audio-Visual Aids. One of the purposes of audio-visual aids in teaching is to do away with verbalism, which may be defined as the "term applied to the use of words without appreciation of the meaningful context in which they are used."⁶ Many teachers reject audio-visual education because they think it is new and a fad that will not last. There seems to be plenty of evidence to the contrary.

In the first place, audio-visual instruction is as old as man. The earliest primitive education was all multi-sensory and the child learned by observing with all senses and then tried to duplicate the work of the teacher. There were no books or lectures to help the teacher transfer the accumulated knowledge. Education might have continued to be largely audio-visual instruction had not the invention of the printing press tipped the balance toward the printed word. What audio-visual educators have been trying to do down through the ages is to tip the scales back to a more even balance. True, audio-visual aids alone will not teach, but put in the hands of an adequate teacher, the results will be impressive. Recent research shows that audio-visual aids will do the following:⁷

⁶Hoban, Hoban and Zisman, op. cit., p. 3.

⁷Henry, Nelson (ed.). Audio-Visual Materials of Instruction. Forty-Eighth Yearbook of the N.S.S.E. Chicago: University of Chicago Press, 1949. p. 255.

1. They supply a concrete basis for conceptual thinking and hence reduce meaningless word responses of students.
2. They have a high degree of interest for students.
3. They supply the necessary basis for developmental learning and hence making learning more permanent.
4. They offer a reality of experience which stimulates self-activity on the part of the students.
5. They develop a continuity of thought; this is especially true of motion pictures.
6. They contribute to growth of meaning and hence to vocabulary development.
7. They provide experiences not easily secured by other materials and contribute to the efficiency, depth, and variety of learning.

The leaders in the field of audio-visual education now have scientific research to prove the effectiveness of this type of education. Any school which is given trained personnel, adequate equipment, and appropriate conditions can achieve results that would not be possible otherwise.

Unprojected Pictorial Materials. From the beginning of time man has used pictorial material as a means of expressing ideas or conveying meaning. The first pictures were daubings on rocks used by primitive man as a means of expression. Then through the years came pen, ink, printing, paint, paper, and photography, until today it would be difficult to imagine life without pictures.

Emmert defines the flat picture or unprojected pictorial material as "a cross section of a visual experience at the instant it occurs. It stops motion, shows line and color, indicates spatial relationships, and portrays people, objects, and scenes in which motion is not essential."⁸

This material, as described by Emmert, is one of the most universally used aids in learning today. One of the reasons for this is that unprojected pictorial materials can be used repeatedly. However, the universality of this material causes people to value it too lightly. For this reason two simple criteria should always be observed by teachers in the selection of unprojected pictorial materials. The pictorial materials selected should pertain to the subject and there should be only enough material to illustrate the point clearly.⁹

Unprojected pictorial materials do not possess powers to teach in themselves. The skill with which a teacher selects the pictorial material and uses it determines its effectiveness. When the teacher shows the pictorial material alone, that is, without an explanation, three days later eighty percent of the efforts of the teacher have been wasted. When the teacher employs a blend of telling and showing, three days later only thirty-five percent of the efforts of the

⁸Emmert, Wilber. "Standards for Selecting and Evaluating Still Pictures," Educational Screen, XVI (December, 1937), pp. 317-18.

⁹Kinder, James and McClusky, F. Dean. The Audio Visual Reader. Dubuque: Wm. C. Brown Co., 1954. p. 82.

teacher have been wasted.¹⁰ Educators cannot scorn a method that results in sixty-five percent recall three days later.

One type of multi-sensory audio-visual aid that makes use of this method is the flannelgraph. The flannelgraph, in education today, is known by many names. Flannelgraph, felt board, flannel board, magic board, slap board, and visual board are all synonymous. Many of these terms will be used interchangeably throughout the remainder of the problem.

¹⁰"Master Lesson Plan For Instructor Training"
(Virginia: United States Army Engineer School,
1955), p. 3. (Printed.)

CHAPTER III

THE FLANNELGRAPH IN TEACHING

History of the Flannelgraph. As far as can be ascertained, fathers, grandfathers, and great-grandfathers if they ever went to Sunday School knew about the flannelgraph technique of visualizing a story. The early missionaries were probably the first to employ the idea of the flannelgraph when they supplemented Biblical stories with picture stories improvised on the spot with the crudest material.¹ These missionaries would take from the hospital compound any piece of rough nappy fabric, even flannelette pajamas from the native patients, and this flannelette against a chair back became the first vertical backboard. Cutouts from printed religious literature formed the symbols. The very first cohesion used is still being used by many today. A piece of sandpaper patiently pasted on the back of the picture cutouts made the symbols cling to the rough nap of the fabric.² Then, about 1900 a toy manufacturer introduced an educational unit for tiny tots which used the felt on felt process. This unit started the slow process of the return of the flannelgraph in education.

The flannelgraph technique received some impetus in World War I. Many veterans of World War I will recall the instructors stringing a G.I. blanket across the wall of the

¹Helser, Ray B., "The Blannelboard" (Detroit: Inter-Office Memorandum Media Series, 1951), p. 1. (Dittoed)

²Ibid., p. 1.

barracks to explain the fundamentals that every good soldier should know. Again in World War II the technique of the flannelgraph played a vital role in the success of military operations. Just before an assault on the enemy the blanket board would be set up and the whole attack would be rehearsed for the men.³ As a field expedient it still occupies an important place in the instructional program of the United States Army.

Even though religious organizations and the United States Army used the flannelgraph with success, the educational field was slow in realizing its potential. The first time the flannelgraph received adequate mention in an educational textbook was in 1952, in Display for Learning by Marjorie East and Edgar Dale. However, in the short span of four years the flannelgraph has made great strides, and today there is hardly an Audio-Visual Instruction textbook that does not give the flannelgraph adequate treatment.

The flannelgraph is a simple device to construct. However, for those whose sources of materials are rather limited, a flannelgraph and cutouts for the flannelgraph may be purchased from a number of educational suppliers. A list of companies making flannelgraphs and flannelgraph materials appears in the appendix. For those who desire to construct their own, the materials involved in the flannelgraph techniques consist of: (1) the flannelgraph backing, (2) the flannelgraph covering,

³Kinder and McClusky, op cit., p. 10.

(3) the cutout, (4) the cutout backing, and (5) the flannelgraph supports. Each one of these items will be explained in the remainder of the chapter. A photograph of a flannelgraph with cutouts is included in the appendix.

The Flannelgraph Backing. The backing is the part of the flannelgraph which is used to support the flannel covering in a permanent type of flannelgraph. A permanent type of flannelgraph may be obtained by the selection of a material that is light enough to be portable and strong enough to prevent warping for the backing. For this purpose a number of materials are available. Plywood, heavy cardboard, wood veneer, pressboard, masonite, or wallboard are a few examples of the materials that can be used for the backing.

Since at the time of this study there has been no statistical work done on the sizes of flannelgraphs, a look at the results of Table IV of Chapter IV might well serve as a guide for the size of this backing material.

The Flannelgraph Covering. After the selection of the desired backing, the next step involves the choosing of an appropriate covering for the backing. The material selected for this purpose is known as the flannelgraph covering. In this phase of construction, the two things to keep in mind are the color and the type of material selected. Since there has been no research correlating colors with the flannelgraph, the color selected may still be left in the hands of the teacher. Additional information may be obtained on this subject by referring to Table V of Chapter IV.

There are a number of nappy surface materials available to use for the covering. However, for longer use and more economy, flocking and flannel are not satisfactory, as they do not wear as well as other materials. Wool felt or part wool will stand the wear and tear; sandpaper can even be used on the latter to clean it and rough up the nap for improvement of cohesion.⁴

There are, also, a number of ways of adhering the selected material to the stiff backing: paper hanger's paste, rubber cement, tape, staples, brads, and tacks, are only a few of the examples.⁵ If paste or cement is used, the teacher must first coat the stiff backing evenly and then spread the cloth over the entire surface. Always making sure that the cloth is smooth in the final product, as the wrinkles that may occur in this method may cause the cutout to fall from the board. If any of the others (staples, tacks, brads, or tape) are used, then the material to be used for the covering should be cut so as to allow a four inch overlap around the edges. Then by stretching the cloth and fastening tightly one edge at a time to the back of the board, a smooth front will result. When making a flannelgraph it is a good idea to mitre the corners of the stiff backing before the covering is

⁴"The Visualboard of Detroit" (Detroit: Visual Specialties Company), p. 2. (Printed.)

⁵Dent, Charles and Tiemann, Ernest. Felt Boards for Teaching. Austin: University of Texas Press, 1955. p. 2.

added to prevent any tearing of the covering.⁶ The flannelgraph is now ready to frame if the maker so desires, but a frame is not essential.

The results of the foregoing steps will provide a long-lasting flannelgraph for the teacher. However, for a temporary flannelgraph, "...use a double-board art easel for a back." "Wrap the flannel lengths around each side and pin or staple firmly at side."⁷ Another temporary method is to "...cut two pieces of flannel a little longer than a selected stiff backing and machine stitch the flannel on three sides only, which will leave one end open for the insertion of the stiff backing."⁸

The Cutout. The cutout is the name given to the pictorial material that is used to present the story on the flannelgraph. Cutouts such as objects, animals, symbols, numbers, letters, musical notes, fractions and figures present no problem. They are readily available to teachers through school supply companies, bookstores, and audio-visual aid dealers. A list of companies making cutouts appears in the appendix.

⁶The Flannel Board" (Hollywood, California: Teaching Tools, Teacher Service Department, 1955), unpagged. (Mimeographed.)

⁷Dent and Tiemann, op. cit., p. 2.

⁸Cypher, Irene. "How to Make a Flannelboard," The Instructor, LXIII (January, 1954), p. 22.

However, for the teacher with initiative, the sources of cutouts are numerous and varied. They may be cut from magazines, newspapers, picture story books or may even be drawn by the teacher with either a paint brush or a felt pen. An idea from these sources that is too small for flannelgraph presentation may be traced on tracing paper by the teacher or pupil and then enlarged to the desired size with the use of an opaque projector and then retraced on desirable material.

The Cutout Backing. Since the flannelgraph technique is based on the ability of materials to cohere to each other, the cutout may be directly cut from any nappy material. When this procedure is followed, the need for a backing is eliminated. However, should the cutout be on material that does not have a nappy surface, then a nappy backing has to be supplied by the maker. In the absence of nap, any material that accomplishes the same purpose may be used.⁹ The following is a list that will give some idea as to what in the past has made a pattern cling to the flannelgraph:¹⁰

sandpaper	suede
cloth	emery paper
blotters	corduroy
balsa wood	duvetyn
construction paper	(similar to flannel but with
sponge	nap only on one side)
colored cellophane	felt
wool	velvet
"chore girl"	flannel
cotton	steel wool

⁹Fox, Marion. "Try Putting a Flannel Board to Work," The Instructor, (January, 1953).

¹⁰Dent and Tiemann, op. cit., p. 4.

In the event the material is cut from lightweight material similar to a book or a magazine, the most suitable way to prepare the cutout for flannelgraph presentation is to mount it on cardboard of the type available at most stationery or art stores and then back it with a nappy surface.¹¹ When making cutouts in this manner, the cutout must be dried under a weight and then stored in a place which will allow them to remain flat.¹² Failure to follow this last step may result in the curling of the cutout and present a hazard to the effective presentation of a story. For a more permanent cutout, the use of a rubber base adhesive is recommended.

The Flannelgraph Supports. The flannelgraph may be supported in various ways, however, to insure an effective presentation the flannelgraph should be tilted, that is, the bottom of the flannelgraph should be extended slightly outward. This is the reason why the two most satisfactory supports are the easel and the chalk tray. When either one of these two methods are used, the flannelgraph assumes the desired position. Wall hooks and similar devices may be used also. When a device of this nature is selected to support the flannelgraph, the slight angle may be obtained by placing a small piece of wood or an eraser between the bottom of the flannelgraph and the wall.

¹¹"Flannel Board Technique" (St. Petersburg: Oravisual Company, Inc., 1955), unpagged. (Printed.)

¹²Stoops, Betty, "Facts and Fun on Flannel Boards" (Michigan: Audio-Visual Materials Consultation Bureau, Wayne University, 1955), unpagged. (Printed.)

Presentation of Stories. The flannelgraph has definite physical advantages over the usual charts the teachers used in the past. "The charts are fixed, unchangeable, call for much labor, are consumable, and at best clumsy. The flannelgraph is compact, durable, ever neat, always growing, easily storable, and lends itself to creative work limited only by the teacher's capacity for creativeness."¹³ Although the feltboard is unequaled in flexibility, this teaching aid should be used where its own unique possibilities can be best realized. An attempt to use the feltboard without discretion and without following the vital steps will almost certainly mean failure.

There are four very vital steps to success in using the flannelgraph technique. They are preparation, presentation, application, and testing.¹⁴ Following these four steps will give the teacher the chief advantage of the flannelgraph -- flexibility. For the purpose of this study emphasis will now be placed on the preparation phase, since the remaining steps are consistent with good audio-visual aids techniques. The preparation phase consists of arranging the materials in order before presentation. However, this is not all. After having arranged the material in its proper order of sequence, the

¹³Fidelis, Miriam, S.S.J. "Flannelgraph Method of Visual Teaching," Catholic School Journal, XLIX (May, 1949), p. 157.

¹⁴Hass, Kenneth and Packer, Harry. Preparation and Use of Audio-Visual Aids. New York: Prentice-Hall, Inc, 1955. p. 120.

user should try out the layout, being sure it fits the space, and seeing that there is good lighting; the user should also place the flannelgraph at a slightly inclined angle and have a final check on contrast of colors and eye appeal.¹⁵ Materials may be moved about, used one at a time or with other items. However, the teacher should "...use a minimum of objects together, permitting the students to focus on one or a very few items at a time."¹⁶

The flannelgraph knows no age level in its varied use. The author has read of its being used for reading readiness in grade one to teaching logic to college students. The flannelgraph has many latent possibilities and when some consideration is given to contrasting colors, making materials large enough, improving their adhering qualities and building up a file of materials, many of these possibilities can be realized.

In closing this chapter, it is worthy to note that there has been a definite increase in the demand for more flannelgraph information. The flannelgraph is making progress as a valuable audio-visual aid in the classroom. Teachers and pupils enjoy the ease of construction and ease of preparation involved in the flannelgraph technique. Looking like a fuzzy bulletin board, the flannelgraph is an excellent multi-sensory audio-visual aid that can be readily adopted to classroom use.

¹⁵Dent and Tiemann, op. cit., p. 5.

¹⁶Ibid., p. 5.

CHAPTER IV

TEACHER USE OF THE FLANNELGRAPH

Procedures Used. In order to achieve a complete picture of the flannelgraph technique as a teaching aid, it was decided to devise a questionnaire and then distribute it to a selected group of school systems. It was hoped that the answers received on this questionnaire would furnish the author with pertinent information about the flannelgraph in actual teaching situations. Colors and materials used on the flannelgraph, sizes of flannelgraphs in use, what grade levels and subject fields make use of the flannelgraph are a few of the examples of the type of information that could be gained from a survey of this type.

The questionnaire was devised from knowledge received from educational literature and also from material published by commercial concerns. However, before the final distribution was effected, it was necessary to conduct a trial run in order to make possible revisions. As a result of a trial run made in the New Salem School System, it was found that no revisions were necessary. The teacher-trainees from the University of Massachusetts had been selected as a means of conveying the questionnaire to the different institutions. Because of the variety of secondary and elementary schools, urban and rural, large and small, new and old, it was felt that these institutions presented a reasonably representative sampling.

Table I indicates that there were fifty-three questionnaires distributed among thirty elementary schools and twenty-three secondary schools. Forty questionnaires, twenty-three elementary and seventeen secondary schools, were returned. From the total number of forty questionnaires that were returned, fifteen elementary and six secondary schools indicated that they had used the flannelgraph. These latter figures translated into percentages indicated that sixty-five percent of the elementary schools and thirty-five percent of the secondary schools surveyed made use of the flannelgraph technique.

TABLE I
NUMBER AND DISTRIBUTION OF FLANNELGRAPHS
INCLUDED IN THE STUDY

	Questionnaires Sent Out	Questionnaires Returned	Number Reporting Flannelgraphs	Percent Reporting Flannelgraphs
Elementary Level	30	23	15	65
Secondary Level	23	17	06	35
Totals	53	40	21	

It is evident from Table I that the elementary school levels have been using this technique somewhat more than the secondary levels.

Flannelgraph Covering. Table II indicates to some extent the varying materials that may be used to cover the board. From the large numbers of users that selected flannel as the

type of material they preferred to work with, it might be deduced that it is this type of material that may be easier or cheaper or more available.

TABLE II

PERCENTAGES OF RESPONDENTS USING CERTAIN MATERIALS FOR FLANNELGRAPH COVERINGS

	Flannel	Suede	Felt
Elementary Level	74	13	13
Secondary Level	100	00	00

Backing of the Cutout. Table III gives a good idea of the variety of materials that can be used for this purpose.

TABLE III

PERCENTAGES OF RESPONDENTS USING CERTAIN MATERIALS FOR BACKING CUTOUTS

	Flan- nel	Sand- paper	Suede	Felt	Flock- ing	Blotter Paper
Elementary Level	42	33	10	05	05	05
Secondary Level	00	100	00	00	00	00

It is very evident from Table III that sandpaper was chosen the most popular of all the materials listed. A word of caution may be in order here. The use of this sandpaper may be due to two factors (1) its economy (2) its proximity.

These two reasons could be the answer to the high percentages that this material received. Perhaps a follow-up study could be done to clear up this question and find out why the teachers use the materials they do.

Size of the Flannelgraph. In the absence of more research in this field such a section as this could be used to suggest to teachers just what sizes other teachers preferred. This is shown in Table IV. It is to be especially noted that perhaps the grade level the user is working with will be the determining factor as far as the size is concerned. It would take another study to determine the final answers relative to questions in this area.

TABLE IV

PERCENTAGES OF RESPONDENTS USING CERTAIN
FLANNELGRAPH SIZES IN FEET

	2 x 2	2 x 3	3 x 3	3 x 4	4 x 4
Elementary Level	33	33	07	27	00
Secondary Level	00	50	00	33	17

While Table IV indicates the sizes in use, perhaps the answers to whether the teachers have been satisfied with these sizes or not will prove significant. Sixty percent of all the questionnaires returned on the elementary level indicated that they were satisfied with the present size board. The remaining forty percent let it be known that they would have preferred working with a larger size. On the secondary level

similar results have been indicated. Fifty percent of the secondary teachers are satisfied, while the other fifty percent all indicated a desire for a large size. It would appear then, that the trend is in the direction of the larger sizes: namely, the three feet by four feet and the four feet by four feet.

Color of the Flannelgraph. Table V indicates the various colors used by the teachers.

TABLE V
PERCENTAGES OF RESPONDENTS USING CERTAIN COLORS
FOR THE FLANNELGRAPH COVERING

	Black	Red	Light Blue	Light Green	Dark Green	Light Yellow	White
Elementary Level	33	26	20	07	07	07	00
Secondary Level	17	00	50	00	00	00	33

This aspect of the flannelgraph technique seems to be left entirely in the hands of the individual teachers. Although the advocates of this technique in school systems today state that a dark color is the best, Table V serves as an indication of what is actually the case. There is no general agreement on this matter. Even though one can see the variety of colors used by the teacher, when asked, "Are you satisfied with the color selected?" sixty percent of the elementary school teachers answered in the affirmative. The results on this matter were a little different as far as the secondary

school systems were concerned. For although only seventeen percent actually use a dark color, fifty percent indicated a desire for a darker color.

Subject Matter and the Flannelgraph. Table VI serves as an indicator of the wide range of subject matter to which the flannelgraph technique can be put.

TABLE VI
PERCENTAGES OF RESPONDENTS USING THE FLANNELGRAPH
IN CERTAIN SUBJECT FIELDS

	Arith- metic	Read- ing	Spell- ing	Art	Health	Science	Music	Home Econ- omics
Elementary Level	45	27	08	08	04	04	04	00
Secondary Level	00	00	00	00	00	17	00	83

However, Table VI also makes it very evident that there are a number of subject fields in which this technique is not used.

Grade Level and the Flannelgraph. Table VII gives an indication of the number of elementary teachers that use the flannelgraph technique in their classrooms. It is interesting to note in Table VII that not one of the returned questionnaires mentioned Grade Five. On the secondary level, the teachers of the Ninth Grade were the ones to use this aid the most.

TABLE VII

PERCENTAGES OF RESPONDENTS USING THE FLANNELGRAPH
IN THE ELEMENTARY GRADES

	First	Second	Third	Fourth	Fifth	Sixth
Elementary Level	20	40	26	07	00	07

The Teacher and the Flannelgraph. Table VIII states the results of question one of the questionnaire distributed to the various school systems.

TABLE VIII

PERCENTAGES OF RESPONDENTS RATING THE FLANNELGRAPH

	Very Important	Important	Not so Important	Unanswered
Elementary Level	60	26	06	08
Secondary Level	00	66	33	01

Tables VI, VII, and VIII make it evident that the elementary teachers have begun to recognize the significant values of the flannelgraph technique. It is evident that they are the pioneers. However, the situation is encouraging on the secondary level, for sixty-six percent of the secondary teachers who use this technique indicated that they thought it was an important aid to use.

Where the Flannelgraph Technique was Learned. Table IX indicates the type of course which gave to the teachers the knowledge of the flannelgraph technique.

TABLE IX

PERCENTAGES OF RESPONDENTS INDICATING WHERE
THE FLANNELGRAPH METHOD WAS LEARNED

	Audio-Visual Aids Course	Methods Course	Principles of Elemen- tary Ed.	Classroom Observa- tion	Another Teacher
Elementary Level	53	20	13	07	07
Secondary Level	100	00	00	00	00

It is interesting to note that the Audio-Visual Aids course leads all other courses in the teaching of this technique. It might be assumed that as this course reaches more teachers, the more the value of this technique will be realized. Perhaps the main reason for the lack of interest in this aid is the lack of knowledge the teachers have of it. Perhaps, too, this section might serve as a reminder to people in curriculum design, that there may well be more ways through which this aid could be brought to the attention of more teachers.

Analytical Results. Before drawing any conclusions from the preceding section, the author would like to submit another report. The people chosen for this report represent the Audio-Visual Aids Course for beginners in the Spring of 1956 at the University of Massachusetts. There were ninety-eight students who took part in this analysis. Since the flannelgraph technique was relatively a new medium to most of them, it was

felt that this class could furnish some additional information on this technique.

The only part of the experiment that was closely controlled was the selection of the color of the board. The Audio-Visual Aids laboratory has four different color boards: black, light blue, dark blue, red. The students were told to choose the color they desired and then were exposed to a demonstration of the flannelgraph by an audio-visual aids instructor at the University. The end result of the demonstration was to show the students not only the vast amount of material that may be used in conjunction with this technique, but also the versatility and flexibility of the flannelgraph (size was not considered a factor in this experiment).

The following is a list of the results of this experiment.

When the group of ninety-eight students was given a choice of the four colors, black, red, light blue, and dark blue, fifty percent of the students chose the black. However, the second most popular color as rated by the students was light blue. Twenty-seven percent chose the latter color. The red color was favored next with sixteen percent while dark blue was last with only seven percent.

The college student of today is a very busy person and as such, he tends to select whatever material is at hand to accomplish the particular job on which he is working. With this idea in mind, it is of no surprise to find that eighty-five percent of the students backed the cutouts with sandpaper.

Only thirteen percent chose to work with flannel, while two percent worked with Kleenex, a make of facial tissue. One person in the class chose to work with blotter paper. However, although only thirteen percent chose to work with flannel, it was a pleasure to watch the ease and grace with which these people demonstrated the flannelgraph technique over those people who chose to work with the other materials.

The materials that the students tended to work with most were the paints, crayons, felt pen, construction paper, and a medium weight cardboard. Of the ninety-eight students in the class, only six chose to use magazines as a source of cutouts. The remaining ninety-two all chose to work with various combinations of the above named materials. All through the experiment it was very noticeable that whenever anyone had any trouble at all, it was due to one of two things or sometimes the two combined. The two factors that gave the students the most trouble are the following:

1. The use of glue or mucilage proved to be unsatisfactory.

This glue or mucilage has a water base, and when it dries it causes the material that it is on to shrink and curl, thus pulling the pattern away from the nap of the flannelboard. The use of rubber cement is highly recommended to overcome this difficulty.

2. The use of construction paper without any cardboard backing proved very unsatisfactory to handle. Construction paper has a tendency to wrinkle after being handled a number of times; and when wrinkling occurs,

the pattern becomes unstable on the flannelgraph and usually falls off. If this same construction paper is backed with a medium weight cardboard, this difficulty will be eliminated.

One thing was clearly shown to the author in the final analysis of this class. The grade level that puts a limitation on the use of the flannelgraph does not exist. Flannelgraphs were presented depicting lessons from a trip to the fire station on the elementary level, to the Battle of Gettysburg on the secondary level, and the tracing of what is involved in the growing, transportation, and selling of flowers on the adult level. One factor that was evident was the idea that the quality of the flannelgraph depended mostly upon the nature of its author. In the hands of the interested person with initiative, it was an effective device -- an aid to learning. However, in the hands of the person lacking interest and initiative, the flannelgraph technique was a failure. On the whole, those students that had the qualities mentioned enjoyed making a flannelgraph and had fun presenting the lesson. To those individuals who were lacking the essential qualities, it was nothing more than a tedious assignment.

CHAPTER V

SUMMARY AND CONCLUSIONS

Restatement of the Problem. It is a well known fact today, that the amount needed to be learned in our classrooms has increased many times. Though this is the atomic age many people have wondered whether or not the electrical age has entered the classrooms yet. The educational system has not kept pace with the changing times. This situation cannot go on indefinitely for life in the technological atmosphere of the world today requires that a person must have the best education possible. Without this education, the workers in this increasingly competitive world are destined to fill the ranks of the unemployed.

What can be done to improve the educational system in this highly competitive world? There are a number of possible suggestions. Among them being lengthening the school year, lengthening the school day, getting better teachers, or giving the teachers better multi-sensory audio-visual aids for teaching so as to increase the efficiency of the teacher-learner process.

Although most of these suggestions are under consideration in some manner or other, it is with the development of the latter idea that this problem is concerned. This possibility of giving the teachers better multi-sensory aids seems to be the one that is more practical at the present time. The teachers given these multi-sensory aids and instruction in the proper use of these aids so that the efficiency of teaching is

increased might well be on the road toward solving a segment of the overall educational problem.

One of the multi-sensory audio-visual aids which the author thinks can be put to good use and aid in the solving of this problem is the flannelgraph. It is hoped that this study will serve two useful functions:

1. To display the flannelgraph as a flexible medium that can be adapted to many classroom uses.
2. To present the results of a survey that depicts the present status of the flannelgraph in the classroom.

Conclusions. The flannelgraph has been used in a variety of situations, some more than others. The survey of the institutions and the analysis of the audio-visual aids classes produced some significant results.

The conclusions arrived at from the survey were:

1. The elementary levels of education are the more frequent users of the flannelgraph technique.
2. Within the elementary levels of education Grade Two is the prime user of this technique.
3. The elementary teachers have much more initiative in the construction of the flannelgraph both in the materials to be used for board coverings and for backing the cut-outs.
4. The size that appears to be the most popular on the secondary level of education is the one whose dimensions are two feet by three feet. The sizes that appear to be the most popular on the elementary level of education

are the ones whose dimensions are two feet by two feet and three feet by three feet.

5. The range of colors was so wide that no important results can be recorded.
6. The teachers of elementary Arithmetic were the prime users of this aid, while on the secondary level, the teachers of Home Economics were the prime users of the flannel-graph technique.
7. An audio-visual aids course is the main source of information on the flannelgraph technique.

The conclusions arrived at from the analysis of the Audio-Visual Aids classes were:

1. The flannelgraph technique can be applied to all levels of learning.
2. The subject matter is definitely not a limiting factor in the use of this technique.
3. The limiting factors in the use of this technique are the incentive and initiative of the individual teachers.
4. When the students had to choose from four colors red, black, dark blue, and light blue, black was the color that was most frequently selected.
5. Construction paper alone will not suffice; the construction paper should be mounted on material that will not have a tendency to curl, such as the cardboard available in stationery stores.
6. A glue with a water base is inadequate due to the shrinkage caused when the water evaporates. Rubber cement was found to be very satisfactory.

7. The students selected sandpaper not because it was the best to work with, but because the sandpaper was more readily available.

8. When the flannel is used or some other nappy substance for the backing, the results are far more satisfactory than one can achieve with sandpaper.

Evaluation. The main purpose of this study was first to discover the present status of the flannelgraph in education today and secondly to reveal to both users and non-users the flexibility of this technique; not only in subject matter and grade level, but also the versatility of various materials which can be used with this aid. However, it would be well to note for the readers of this problem some of the limitations of a study of this type.

Some of the important limitations to this study stem from the subjects themselves. The degree of ability and the degree of sincerity with which the teachers answered the questionnaire are not known. It can only be hoped, however, that the teachers involved answered the questionnaire with a degree of accuracy and sincerity sufficient to make the generalizations of the study valid.

Finally, since the study was concerned with presenting the status of the flannelgraph and materials in use with this technique, it did not attempt to determine the "Why" of the situation. It is conceivable that every section reported on in Chapter IV could be followed up with a qualitative study. Such a study would be necessary to ascertain any true and

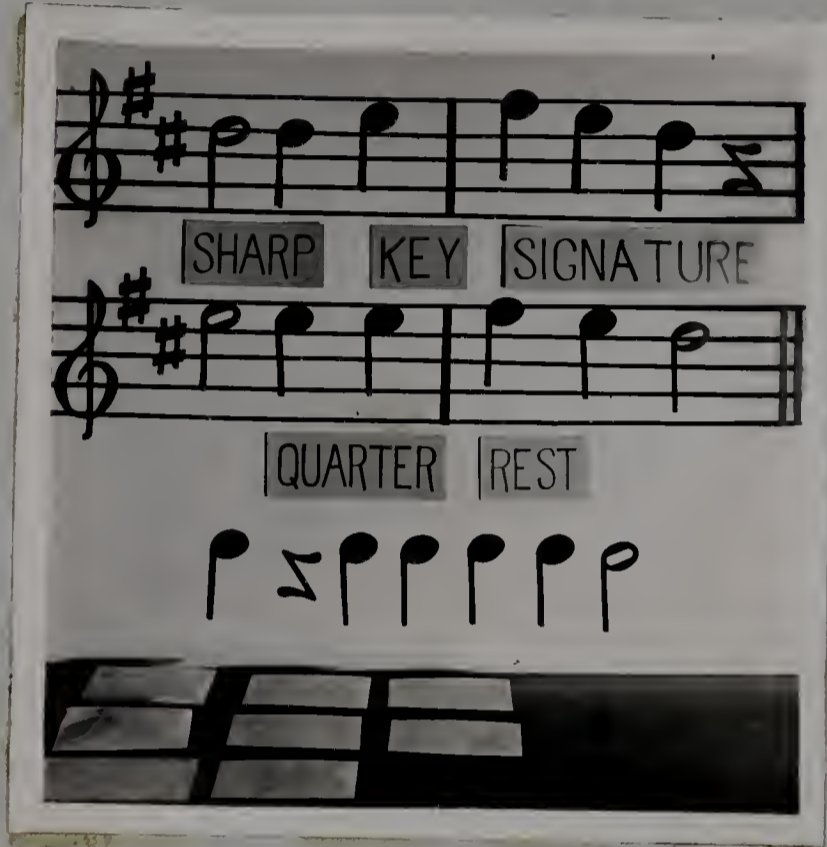
complete evaluation of the materials involved in the flannel-graph technique.

Although the flannelgraph has had a long and erratic history as an audio-visual aid, it now appears that the flannelgraph technique is becoming a recognized teaching aid. The materials and techniques used in instruction are constantly changing. The flannelgraph technique can be applied to many classroom situations and teachers should become familiar with this audio-visual aid and avail themselves of it whenever the opportunity arises.

APPENDIX A

APPENDIX A

PHOTOGRAPH OF FLANNELGRAPH WITH CUTOUTS



APPENDIX B

APPENDIX B

FORM LETTER SENT TO INDIVIDUALS AND MANUFACTURERS

University of Massachusetts
Amherst, Massachusetts
February 6, 1956

Dear Sirs:

As a graduate student at the University of Massachusetts in the Department of Education, I am very interested in Audio-Visual Aids in teaching. I am now doing a project on the felt board (flannelboard) as an Audio-Visual Aid for teachers. Since this is a fairly new teaching method, I have had some difficulty in obtaining information on it. Your company was recommended to me as a source for information on this matter. I would appreciate any material you could send me on this subject; especially its history, the former and present materials used for its backing, the best levels at which to use it, the proper construction, etc.

Thank you for your kind attention.

Yours very truly,

Frank P. Di Giammarino

APPENDIX C

THE QUESTIONNAIRE

A Flannelgraph Survey of School Systems
 Having Teacher Trainees From The
 University of Massachusetts
 Spring - 1956

Name of School _____
 Grade Level _____
 Color of Board _____
 Address _____
 Subject Field _____

(If Elementary state the subjects in which you make use of the flannelgraph)

Teacher: M F

Approx. Size of Bd.		S.M. Comm.	Board Material			Backing Material			Cutout Mat.					
2x3	3x3		Ft.	Fl.	Fk.	Se.	other	Sp.	Ft.	Fl.	Fk.	Se.	other	S.M. Comm.

Questions:

1. Do you consider Flannelgraphs Very Important Important Not So Important?
 (Underline one)
2. In what subject field(s) do you consider the Flannelgraph best suited as an aid? Why?
3. Are you satisfied with your present Flannelgraph? Yes _____ No _____
4. Would you prefer a lighter or darker color Flannelgraph than the one you have indicated?
5. Would you buy the same size Flannelgraph again? Yes _____ No _____
 - a. What size would you buy or make? _____
6. Did your first contact with Flannelgraphs come in an Audio Visual Aids course that you had? Yes _____ No _____
 - a. If not where did you learn about the use of the Flannelgraph?

Code: _____

S.M.	-	Self Made	Fl.	-	Flannel
Comm.	-	Commercial	Se.	-	Suede
		(Purchased)	Sp.	-	Sandpaper

APPENDIX D

APPENDIX D

GENERAL DIRECTIONS ACCOMPANYING THE QUESTIONNAIRE

General Directions: I would like at least one return from everyone even if it states - No flannel-graph. If in any case there is more than one board in the classroom then I hope you will seek it out and fill out a sheet on it.

Specific Directions:

Color of Board - This refers to the hue of the material used to cover the flannelgraph. I would further like to clarify it by adding the shade of the color. (See ex.)

Ex. Instead of saying just blue - I would prefer to have you say dark blue.

The next section of this survey is just a simple check off list. Each main topic requires a check unless you mean to fill in the block marked, other. In this case I would like to have you fill in the appropriate material. (Abbreviations are explained under section marked Code.)

The next section consists of a series of six questions.

- Question 1. Requires only that you underline the appropriate words or word.
2. Requires 2 answers. First the subject field(s) which they consider best suited to the flannel-graph. Secondly a brief notation as to why they think so. (They may use the reverse side of the sheet if necessary.)
3. Requires you to simply check off the appropriate answer.
4. If the answer to number 4 is "yes" then I would like another notation as to just what color the teachers prefer.
5. If the answer to number 5 is "No" I would like to have you fill in the desired size, choosing from the sizes above.

APPENDIX D (continued)

6. If the answer to number 6 is "No" I would like to have the teacher indicate where the knowledge of the flannelgraph came from. Suggested list of answers: College courses other than AVA, In Service Teachers, Practice Teachers, Professional publications, Others _____.

The last section of this sheet consists of a code which explains the abbreviations used on the survey sheet.

APPENDIX E

APPENDIX E

CITIES AND TOWNS WHERE QUESTIONNAIRE WAS DISTRIBUTED

Agawam	Ludlow
Amherst	Montague
Athol	Northampton
Belchertown	Orange
Greenfield	Palmer
Hadley	Springfield
Hatfield	Turners Falls
Leverett	Ware
	West Springfield

(All these cities and towns are in Massachusetts)

APPENDIX F

APPENDIX F

LIST OF SUBJECT FIELDS IN AUDIO-VISUAL AIDS CLASS

ELEMENTARY

Arithmetic	Language Arts	Safety
Art	Music	Social Behavior
English	Nature	Social Studies
Health	Reading	Spanish

SECONDARY

Chemistry	History	Physics
English	Home Economics	Recreation
French	Mathmatics	Zoology
General Science	Physical Education	

ADULTS

Animal Husbandry	General Business	Religion
Conservation	Public Health	Vocational Agriculture
Extension	Radio	Wildlife
Floriculture	Railway Transportation	

APPENDIX G

APPENDIX G

MANUFACTURERS OF FELTBOARDS AND FELTBOARD MATERIALS

Audio-Visual Supply Co., 959 North La Cienega, Los Angeles,
California.

C-It-Told, Box 929, Bristow, Oklahoma.

Florez, Inc., 815 Bates St., Detroit 26, Michigan.

The J. L. Hammett Company, Kendall Square, Cambridge 42,
Massachusetts.

Jacronda Manufacturing Company, 26-28 South 42nd Street,
Philadelphia 4, Pennsylvania.

The Judy Company, 310 North Second St., Minneapolis 1, Minne-
sota.

Oravisual Company, Inc., Box 609, St. Petersburg, Florida.

School Crafters, Inc., North Adams, Massachusetts.

Self Teaching Aids, 9819 So. Normandie Ave., Los Angeles 44,
California.

Techni-Craft, Box 1024, Petersburg, Virginia.

Visual Crafts Supply Co., 640 North Willow St., Kent, Ohio.

Visual Specialties Co., 7501 W. Vernor, Detroit 9, Michigan.

John C. Winston Co., 1010 Arch St., Philadelphia 7, Pennsyl-
vania.

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Approved by:

Raymond T. Lyman
Chas. J. Oliver

Date: Aug. 9, 1956.

