1988

The Need for Audio-Visual Curriculum

Barbara Arnold

THE NEED FOR AUDIO-VISUAL CURRICULUM

BY

BARBARA ARNOLD

Submitted in partial fulfillment of the requirements

for the Master of Arts in Education degree

Lindenwood College

1988

Abstract

The purpose of this project was to study the effectiveness of audio-visual aids in the classroom. To justify the use of audio-visual aids in the classrooms, an attempt was made to test the hypothesis that for audio-visual aids to be used effectively to teach details and comprehension of story and lesson content, they must be properly introduced with a study guide and followed by related activities and evaluation. Three hetergeneously grouped classes were regrouped for this project. Three units of literature, science and social studies were planned with three lessons for each unit. This allowed the teachers to rotate in teaching the different groups with the groups remaining the same. There was the control group that used the regular classroom method of reading and discussion. The modified experimental group that viewed the related film or video and the experimental group. The experimental group had the introduction with a study guide, viewed the film or

video, followed by related activities. All three groups received the same tests.

Due to a 20% difference between the modified experimental group's composite achievement test scores and the other two groups, it was necessary to use the analysis of covariance method to tabulate the results of the nine tests. With .05 predetermined as the level of significance there was no significant difference in the tests results.

Table of Contents

CHAPTER I

INTRODUCTION

The Need for Audio-visual Curriculum

In an age occupied with visibility, the need for a video curriculum seemed urgent as more and more audio-visual, especially videos, were being used in the classrooms.

The purpose of this project was to study the effectiveness of audio-visual aids in the classroom. The main question that was addressed in this study was, "How does the use of audio-visual aids compare in effectiveness over the traditional teacher-led discussion method in classroom instruction?" Some other questions were considered. Since television was so much a part of their lives, did the students get as much from audio-visuals aids as they did from reading aloud and discussions that included related books and related reading materials? Would the

students' learning be enhanced by watching a related film, followed by discussion and activities? This study was based on the effectiveness of AV aids in the areas of listening, comprehension, science concepts and social studies concepts. The major hypothesis of this research was: Audio-visual aids are more effective in teaching comprehension and details of story and lesson content if they are properly introduced with a study guide and followed by related activities and evaluation. Kinder (1957) pointed out that for AV to be effective, there must be a dynamic teacher, variety, active student participation, checking up on things learned, follow-up, and applications. Research showed that for any instructional materials to be effective they must be introduced and then followed by related activities.

Since there were six second grades in the building where this educator taught and the teachers worked very closely together, exchanging children for grouping, this study seemed feasible. The subject areas where audio-visual aids were already used, sporadically, were literature, social studies, and science. In our reading series the emphasis had been to follow each literary reading with

comprehension questions and discussion over the details, morals and values in each story. These seemed difficult skills for the second graders to acquire. Would AV aids help with these skills? Since our reading groups were grouped according to levels of reading ability, the best solution for the literary unit was to use the storytime immediately after lunch, to get the random grouping for this study. Since the major hypothesis was that audio visual aids were more effective when properly introduced, three classes were selected to participate in the experiment. Three classes that were hetergenously grouped were randomly grouped again into a control group, a modified experimental group, and the experimental group. This was done by taking a list of the students' names from the three classes and numbering them into three groups. The control group received the regular classroom instruction with the teacher reading and discussing related material. The modified experimental group viewed a related video or filmstrip. The experimental group had the full treatment of an introduction, discussion and related video or filmstrip. All three received the same test to evaluate the results. The groups remained the same

with the same students in the control group, the modified experimental group, and the experimental group. The groups rotated among the three teachers, so that each teacher taught each group, to allow for the different teaching personalities. There were three lessons in each unit to allow each teacher to teach all three groups.

The three teachers met to decide upon a block of time that could be used to exchange students and allow enough time to teach an adequate lesson. Allowing for music, physical education, art, and library, it was decided that Thursday afternoons were the best. A literary unit was planned on the stories: "The Magic Paint Brush" by Hisako Kimishima, "Peter Rabbit" and "The Little Red Hen" from a book written by Beatrix Potter. A unit of three lessons was planned over the science chapter dealing with the moths and butterflies, animals and plants getting ready for winter, and migration. A unit of three lessons was planned in social studies over the chapters on Mexico, community helpers, and citizenship. All three classes proceeded as usual, except on Thursday. On Thursday afernoon, the three classes divided into their three groups for their lessons for the study. The control group had a

regular lesson of reading and discussion with only the pictures that were in the books. The modified experimental group had a filmstrip or video related to the lesson. The experimental group had an introduction of active participation and discussion followed by watching the same filmstrip or video. All three groups received the same test over the details and concepts that had been taught in the lessons.

The purpose of having the three groups; the control group with no treatment, the modified control group with the modified treatment of the visual-aid, and the experimental group with the full treatment of introduction, student participation, and visual-aid, was to test the hypothesis that for audio-visual to be more effective than regular classroom instruction, it must be carefully selected and introduced with some student participation. Unlike some of the studies that were researched that tested comprehension of story content presented by television versus the radio (Hayes, Kelly and Mandel, 1986), this study attempted to test the effectiveness of videos and filmstrips properly selected and introduced over videos and filmstrips that were used, sporadically, to enhance a lesson.

Upon searching through the local public libraries, school libraries and video stores, it soon became apparent that while several good filmstrips were available, there were hardly any good videos that related to the second grade science and social studies curriculum. This lack of available videos made it necessary to use more filmstrips in this experiment than originally planned. The need for video curriculum appeared to be urgent in areas other than proper utilization.

With more and more modern technology, such as televisions, VCRs, calculators, and computers being placed in our educational systems, the need for good programming and proper utilization seemed important. Carlisle (1987) stressed that the effective use of video involved three important variables: equipment, programming, and support. Equipment didn't seem to be a problem as VCRs and filmstrip projectors were already in the schools and committees were in the process of selecting calculators and computers to put in the schools. Since programming and proper utilization were also important, according to Carlisle, these were areas to be concerned about next. Being a classroom teacher, proper utilization was a major concern of this educator. This concern

resulted in this hypothesis for this research: Audio-visual aids are more effective in teaching comprehension and details of story and lesson content if they are properly introduced with a study guide and followed by related activities and evaluation.

CHAPTER II

REVIEW OF LITERATURE

Historical Background

In the United States there were 4015 commercial radio and television broadcast stations on the air in 1957 and 76 percent of all households had at least one television by August, 1956, according to the figures Kinder (1959) took from the Statistical Abstract of the United States, 1957. Then (1957), as today, it was easy to overemphasize the evil and forget that the same mass media could be used to promote social good.

> The committee of the National Society for the Study of Education which reviewed the accumulated research in audio-visual education in 1949 reported that research supports the following claims for properly used materials.
> 1. They supply a concrete basis for conceptual thinking and hence reduce meaningless word responses for students.
> 2. They have a high degree of interest for students.

3. They supply the necessary basis for developmental learning and hence make learning more permanent.
4. They offer a reality of experience which stimulates self-activity on the part of pupils.
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 experience not easily secured by other materials and contribute to the efficience, depth, and variety of learning. (Kinder, 1957, pp. 11 & 12)

In separate studies by Rulon at Harvard and Arnspiger at Columbia, not only were 22% gains found in groups using films in science, social studies, and music; over groups taught without films, but the information was retained longer. Other studies cited, but in lesser detail, involved influence on attitudes, motivation and interest, habits and skills, and increases in voluntary reading. Kinder pointed out that for AV to be effective, there must be a dynamic teacher, variety, active student participation, checking up on things learned, follow-up, and applications. Research showed that for any instructional materials to be effective they must be introduced and then followed by related activities. To simply show a film without orientation and some follow-up, violates all learning principles.

As for the growth of audio-visual education, Kinder (1957) reported that St. Louis had the first audio-visual center in the United States in 1905. By the early twenties, organized AV centers existed in Cleveland, Detroit, Pittsburgh, Sacremento, Berkeley, New York, Oakland and Newark and some six hundred doctoral dessertations in that area were completed between 1923 and 1957.

In Pennsylvania and California, there were required course credits in audio-visual education as a prerequisite for teacher certification. Even with the emphasis on AV at that time, Kinder (1957), stated that teachers needed to know more and that there was the problem of convincing some teachers of the values of AV equipment. He went on to predict that twenty-five years from then, (1957) utilization would still be the number one problem.

Advantages of Educational Television

By 1963, the Federal Communications Commission had established a closed-circuit principle through the Instructional Television Fixed Service (ITFS) where schools with special receivers could bring

instructional programs directly into the classrooms (Dale, 1969). According to Dale, with the proper use, the educational values of this closed-circuit principle could be unlimited. Instructional TV could bring the models of excellence such as the able scientist, the creative teacher, the great poet, and the significant dramatist, directly into the classroom. It would bring real-life events into the class. What would be more exciting or enlightening than watching the final count-down of an American astronaut's first orbital flight in space? Television was inclined to be the most believable. Television made some programs understandable and appealing to a wide variety of age and educational levels. The versatility of the television camera could help a class of 300 see the smallest details of a demonstration that wouldn't be visible otherwise. Television could save time for the student and teacher and give more time for individual conferences and projects. So, over all, television could be both instructional and enjoyable while adding the variety that is needed in education.

Disadvantages of Educational Television

As with every new development there were always disadvantages as well as advantages. Television, as other teaching methods, was usually a one-way communication device and teachers forgot to be concerned about student interaction. Television moved ahead at a constant speed and it was difficult to review a television program. The small screen put a television at a disadvantage when compared to a projected motion picture screen. There was always the danger of learner passivity, but this could happen with a teacher or a book for that matter. The problem of having fewer persons preparing instructional material for our schools, also existed in educational television. Another disturbing problem was the loss of personal contact with a teacher this type of teaching could cause.

There was the extreme difference between entertainment and education. Entertainment was to pass the time agreeably and enjoyably with little purpose or objective. To teach with television there must be a purpose, a goal, and some careful selection of appropriate materials.

Dale (1969) stressed the special qualities of

television teaching in three basic ways; total television with no teacher or only slight assistance; as a complimentary basic resource as a part of the curriculum; and as supplementary enrichment. Some specialists believed that for instructional television to be used only as enrichment would fail or be a limited success but it could still make an important, regular contribution to education. As with any innovative instructional method, there must be some discrimnation as to what was good and what was bad. Since most children spent as much time in front of a television as they spent in school, there should have been some guidelines as to what was selected for viewing at school, whether for entertainment purposes or for instructional purposes. As educators, teachers should have been aware of the fine programs available and should have supported the creative, the inventive, and the artistic. In evaluating some of the weaknesses of educational television such as lack of developing creative and critical thinking, helping students become problem-framers and problem-solvers; there was, also, a lack of testing and research in exploring educational television's unique contributions to the classrooms. Dale (1969)

closed his chapter on educational television (ET) by addressing some of the limited values of ET such as not providing individual and group activities, not appraising individual progress, and no counseling for boys and girls with special problems, but still believing that the medium could lighten the responsibilities now assumed by overburdened teachers (Dale, 1969).

In 1968, when the Children's Television Workshop (CTW) began to test the power of television as an educational instrument, two decades of research in instructional television existed by that time. A review of the studies and literature relevant to research in instructional television prior to this time provided vague guidelines as to any sigificant results of instructional television. Barbatis' (1978) pointed out that through an examination of the research from 1950-1964 by the Institute for Communications Research there had been more than 350 studies on how television could be used to teach. The main difference between the earlier studies and this one was the approach to the research question. The approach before could be categorized as summative, based on scientific validation, whereas the approach by CTW was

formative, based on interpretation. There were four types of studies reported of the summative model: comparative effectiveness, utilization, basic, and attitude. Of the 35 studies reviewed by the Institute that related to programming for children, 17 were the comparative effectiveness type. The research question of these 17 studies compared the effectiveness of TV and face-to-face instruction in various subjects.

> The results show non-significant differences in ten studies, significant differences in ten studies, significant differences in favor of television in five cases, significant differences in favor to face-to-face instruction in one case, and significant differences for parts of the sample for both televised and face-to-face instruction in two of the studies. (Barbatis, 1978, p. 400)

In the utilization studies there were so many variables involved that even though the studies tested similar variables and were generally consistent, they rarely showed significance. There were not enough studies in the basic category to comment on consistency of results and the results of the attitude studies did not show statistical significance. The studies reported here from the formative model, however, provided a pattern of consistent and statistically significant results.

The initial Sesame Street studies were examined here and also the succeeding research on Sesame Street, the Electric Company, and the Appalachia Preschool Program. The Sesame Street studies were the first large-scale attempt at formative research in instructional television. The research questions in these studies were concerned with the identification on program design techniques that attract and hold the attention of children. Using a distractive method, small groups of childern were observed and evaluated according to visual, verbal, and motor activity.

In the summative studies, a situation was hypothesized and then tested which limited the results to either acceptance or rejection. In contrast, the formative studies posed research questions in terms of context, accepting the natural range of variables, and attempted to identify those that were important to the research question. Many studies were cited from 1959 to 1972 that identified the need for a change of focus in instructional television research. The consistent conclusions were that further research needed to be done to identify the many variables involved which affected learning. In Kinder's (1959) study, the conclusion

was that comparative effectiveness studies should be avoided as needless duplication of previous research. Thirteen years later, the recommendations were still similar. According to Barbatis (1978), the formative approach finally came up with a testable theory based on the activity producing potential as the basis for its instructional value. Support of this theory is seen in four CTW achievement studies where learning was increased when programming provided for activity, such as motor and verbal response. According to Barbatis (1978), summative research was premature and accomplished little in the history of research in instructional television in contrast to formative research that was concerned with a wide range of variables and with making broad, speculative interpretations of the results.

In Houser's (1978) article on the use of audiovisual media in reducing prejudice, she cited numerous studies that supported the ability of television and films to alter childern's behavior. These studies not only correlated aggressive behavior with the viewing of programs displaying violence but indicated that prosocial behavior such as obeying rules, tolerating delays, sharing,

cooperating, and self-control could also be communicated through television.

Since few studies, were available in 1978 on the effects of television upon children's attitudes, Houser investigated the immediate effects upon young children of a single exposure to film designed to reduce prejudiced attitudes. The children were divided into three groups. All of them were shown crayon drawings, of children identical except for skin and hair color. There were six sets of pictures with each set accompanied by a story which was read to the subjects. Then one experimental group was shown one film and another experimental group was shown two films with the common theme that appearance or color should not be considered important in relating to others.

The results of this study demonstrated that audiovisual media were valuable in influencing certain attitudes but that there was a serious problem of lack of acceptable films to use in reducing prejudice. It was suggested that it might benefit instructional developers to transfer some of the knowledge, energy, and resources to designing instructional film which would be of value in the areas of prejudice where the average classroom

teacher might feel uncomfortable or inadequate.

Sesame Street

Many of the studies dealt with the popular "Sesame Street" program geared for educating the preschool children. With the public acceptance of "Sesame Street" in 1970, a whole new era started in preparing preschool children for early school learning, involving the efforts of educators, psychologists, sociologists, psychiatrists, actors, artists, producers, and many other specialists to design, produce, evaluate, and broadcast these programs. As a result there were many studies conducted to evalute the effectiveness of the programs. The program was translated into many languages and aired in other countries, which presented more unique opportunities for evaluative research.

One particular study, using preschool children in day-care centers, was designed by the Centro de Investigaciones Psicopedagogicas, Asociacion Civil

(CIPAC), Mexico City, Mexico. (Diaz-Guerrero & Holtzman, 1974). A total of 221 children from three different lowest-class day-care centers, equally divided by ages three, four, and five, and by sex, were randomly assigned to experimental and control groups. Both groups were treated exactly alike except for the programs viewed by television. At three o'clock, the experimental group was taken into a separate room to view "Plaza Sesamo" while the control group was taken to another room to view cartoons and other noneducational programs. They even took such precautions as to keep the control group later at the preschool and keeping the preschool open during two vacations to keep them from viewing "Plaza Sesamo" on another, later channel. As an incentive for cooperation from parents, there was a color television raffled off to parents with children who had perfect attendance.

A battery of nine tests were individually administered before, during and after the viewing. The largest difference occurred in the four-year-olds and the smallest in the three-year-olds. The rate of learning was consistently faster for the experimental groups than the control groups across the three testing periods

in the areas dealing with general knowledge, numbers, letters and words taught by "Plaza Sesamo". The experimental group was also better on cognitive tests only indirectly related to "Plaza Sesamo" and oral comprehension which was completely independent of the program content (Diaz-Guerrero & Holtzman, 1974).

A later study, using "Sesame Street," involved the cognitive processing aspects of children's television viewing. Since most of the research was on the social impact of television on children's behavior, Pezdek & Hartman, (1983) felt that social lessons could not be learned unless the lessons were understood and remembered. So they conducted a study examining the relationship between children's attention and comprehension of auditory and visual information on television.

The purpose of the first experiment was to validate the distinction between auditory, visual, and the combination of auditory and visual. Thirty five-year-old children from kindergarten classes in public schools in Claremont, California, viewed a "Sesame Street" sequence that contained approximately equal amounts of the three types of segments. The children were given a comprehension

test of thirty-five questions to query specific aspects of the three types of segments.

The second experiment involved 60 five-year-olds viewing a videotape of "Sesame Street". Equal numbers of children viewed the same sequence, which consisted of the random ordering of visual, auditory, and mixed modulity segments with either toys available for play, a record playing in the room, or no toys or record available. Again the subjects were given a comprehension test, geared to the type of segments the subjects viewed.

The results were that the cognitive processing ability of five-year-old children were more sophisticated than had been suggested by some laboratory research on children's attention. The children were able to differentiate between auditory and visual aspects of programming and to adjust their attention appropriately while doing other things, such as playing with toys or listening to a record.

> When the television is used as a stimulus, it appears, that five-year-olds are able to effectively distribute their attention such that they can differentially process auditory and visual aspects of television while performing other activities (e.g., playing with toys or listening to a record). These results run counter to

> the position that children passively absorb the information bombarbing them from television. It is hoped that continued research in this area will lead to a better understanding of children's true cognitive processing abilities as well as to the production of television programs that are more comprehensiable to children. (Pezdek & Hartman, 1983, p. 1023)

With the rapid expansion and general acceptance of television as an instructional aid, numerous articles and studies were done during the sixties and seventies concerning the utilization of ETV. There were studies to evaluate the attitudes of teachers and pupils after a year's utilization of educational television (Beaubien, 1984), and studies on the effectiveness of teaching Christian morals and values using the televison (Hardaway, 1963).

As with any educational technology, ETV was not without it problems. Some of the problems cited and discussed during the seventies by Friedlaner (1973) were lack of adequate knowledge of primary children's auditory and visual comprehension, lack of accurate knowledge about effective programming, lack of techniques for integrating television with print, and lack of cost-effectiveness information, and lack of mobilization of pupils' active participation (Friedlander, 1973).

With the Federal Agencies focused more on the newer technologies of educational television, simulations, computer-assisted instruction and multimedia systems, Kincaid (1974) analysed the use of educational technologies in public education and came up with the following conclusions. First, technology was generally an added-on, teacher-dependent tool. Second, technology did not always lead to increased learning, although it could offer advantages such as time saved and curricular enrichment. Third, educational technology was expensive and as long as student time in school was fixed independent of learning, less capital intensive approaches would be more cost effective. Since it was evident that technology was not about to revolutionize education by radically lowering costs, so what about increasing instructional effectiveness. Kincaid (1974) concluded that educational technology's hardware needed to be standardized and more attention should be paid to the use of technology for special applictions and with special populations, rather than as a substitute for conventional instruction.

Theories Relevant to the Major Research Question

How effective were audio-visual aids in our classrooms? What affect has televison had on the lives of children and their education? Did the benefits of audio-visual aids outweigh the cost of implementing them in our classroom? These were the questions still being heard and read after more than three decades of audio-visual use.

Kinder (1959) pointed out that for AV to be effective there must be a dynamic teacher, variety, active student participation, checking up on things learned, follow-up and application. Research showed that for any instructional material to be effective, they must be introduced and then followed by related activities.

Concerning the attitude of teachers, there was some indication, according to Hardaway (1963) that in-service training in TV utilization had a favorable affect on teachers' attitudes and for the less-effective teacher, according to their administrators, to have a more favorable attitude toward ETV.

Dale (1969) stressed the advantages and disadvantages of ETV and as with any innovative instructional method, there had to be some discrimnation as to what was good and what was bad. Since most children spent as much time in front of a television as they spent in school, there should have been some guidelines as to what was selected for viewing at school, whether for educational purposes or for instructional purposes. Over all, television could be both instructional and enjoyable while adding the variety that was needed in education, when used properly. To teach with television there must be a purpose, a goal and some careful selection of appropriate materials to achieve these goals.

From the results of these studies, it appeard that the popular "Sesame Street" helped millions of children cope more adaquately with early school learning during the seventies. In Kinder's 1959 study, the conclusion was that comparative effectiveness studies should be avoided as needless duplication of previous research.

In researching the effectvieness of ETV. Barbatis (1978) came up with the formative approach with a testable theory based on the activity

producing potential as the basis for its instructional value. Support of this theory was seen in four Children's Television Workshop, 1968, achievement studies where learning was increased when programming provided for activity, such as motor and verbal response.

In a study conducted by Pezdek (1983) concerning the cogniture processing ability of five-year-olds, it was concluded that the cognitive processing ability was more sophisticated than had been previously suggested by some laboratory research on children's attention. The children were able to differentiate between auditory and visual aspects of programming and to adjust their attention appropriately while doing other things.

Televison was like other technology, that was generally an added-on, teacher-dependent tool and did not always lead to increased learning. Television was not a substitute for conventional instruction but was more effective when used for special applications and with special populations.

Current Literature

Since audio-visual has been around for some time, there have been many studies and much research done on this instructional aid. Most of the studies supported the hypotheses that the effectiveness of audio-visual aids depended on how they were introduced, used, and the follow-up activities. It was stated almost thirty years ago that comparative effectiveness studies should be avoided since it would be needless duplication of previous reasearch. There may be too many variables involved to actually prove the effectiveness of educational television. Henderson (1986) did a study that investigated the structural relations among viewing behavior, viewing conditions, background characteristics, and intellectual ability of preschoolers learning from instructional television. Subjects were randomly assigned to one of three treatment groups of four, dyads, or individually, who viewed tapes designed to teach seriation concepts. Though this study was not to examine the effects of the instructional video materials, it was interesting to note that the findings supported previous studies in that the viewing condition did not influence learning outcome

from these instructional video materials. However, background characteristics such as family constellation and parental education were found to be associated with performance on cognitive tests, but retention was influenced only by the original learning of the concepts (Henderson, 1986, p.50).

There were many schools, with library media centers, that had audiovisual materials available to the student as well as the teachers. Hodges, Gray & Reeves (1985) did a study on high school students' attitudes towards the library media program. They concluded that the more audiovisual materials made available to the student, the better the students' attitudes were concerning the library media programs. Other variables involved were learning styles, models of teaching, and curriculum implementation. In catering to student learning styles and individual student learning preferences, the teachers were offering students a wider variety of research opportunities where the AV component was present. In those models of teaching where teachers focused on learning through student inquiry, basic AV services were provided for the students to use. Curriculum implementation that recognized and regarded student discovery encouraged media programs

that provided opportunities for students to be actively engaged in creativity. These variables and the existence of AV materials were strongly associated with students' valuing and extensively using the library programs (Hodges, Gray, & Reeves', 1985).

William Reider (1985), the library and media services specialist in the Baltimore County Public Schools, stated that the videocassette recorder (VCR) was the number one choice of educational technology in the schools. "From September 1983 to September 1984, the number of schools using VCR's increased from 36,545 to 56,166, according to the Denver-based market-research firm, Quality Education Data" (p.15). Reider seemed to think that the schools were behind our society in implementing new technology in the educational system. He thought we should look to our teachers as the key to implementing new technology and provide adequate funding to implement videocassette technology in education.

Gilkey (1986) compared the 16mm film, videotape, and videodisc. While the 16mm film offered a superb, high quality image that could show a 50 inch image to an entire group of students, it

did have its disadvantages. It did not easily permit study of a single frame to reinforce an important instructional point. Viedotape had many advantages such as being easier to use and its high penetration in the consumer market, making it easy for students to check out and use at home in the same way they would check out a library book. Some disadvantages were the size of the image being restricted to 19 or 25 inches and the two pieces of equipment required for presentations. The recorder was easily portable but the television receiver was extremely bulky and could not be easily transported except on a cart. Gilkey's (1986) recommendations were to explore the use of videodisc and the creation of programs of the interactive variety and the type teachers could use themselves to adapt materials to their own teaching styles.

Another comparison was done in a study by Hayes, Kelly and Mandel (1986) on the comprehension and retention of story content, presented by television versus the radio. Forty-four adults and forty-four children, ages three to six, were presented the same story. Half of the subjects at each age level viewed and listened to the story on television and the other half listened to the

identical story on radio. Immediately afterwards, the subjects were ask to relate the story in their own words and in the order they chose. The results showed significantly more errors in comprehension and memory of story content from the subjects that listened to the story on the radio than the ones in the television condition. The subjects in the radio condition showed greater recall of dialogue and sound effects but the overall story content tended to be much higher in the television condition group (Hayes, Kelly and Mandel, 1986).

Many of the more recent articles were about the computer and its use in the educational system. One such article by Salomon and Gardner, (1986) was concerned that the same mistakes made by television research not be repeated in researching the computers. However, according to Salomon and Gardner, (1986) some of the current research on computers was in danger of resulting in similarly naive assumptions and yielding the same uninstructive findings as did much of the past research on instructional television. There was a big difference between television and computers. Television was mostly a one-way medium of communication, basically designed for entertainment

whereas the computer was a mulipurpose, semi-intelligent, interactive tool. "Nevertheless, both television and computers are technologies about which questions concerning instructional effectiveness, optimal design, cost, ways of handling, and psychological impact on users can legitimately be raised" (p.13).

Wagschal (1986), compared the introduction of the computer into the school to the relationship the television has had with the schools the last 30 years. Back in the 1950's and early '60's, most schools managed to scrape together enough money for the television sets but not enough for maintenance and repair, thus resulted in closets full of video equipment which hadn't been used for years. Another problem with the use of television in the classroom was the lack of training provided for the teachers on how to implement it successfully in their curriculum. Wagschal (1986) recommended that every teacher be given the basic system and sufficient training to use standard software. Only then will the teachers begin to appreciate the usefulness of the word processor.

Wagschal (1986), Adams and Hamm (1987) both claimed that the average American spent more time

viewing television than anything else except sleeping. Since television was so much a part of our lives, Adam and Hamm (1987) thought that it was important to teach our students critical viewing skills. Teachers tended to cling to the printed word too much for instruction. To stay involved in the future, schools must make use of the technology operating around them. As educators, it was the teachers' job to teach the students critical viewing skills, how to interpret media messages, and how to create and manipulate video images.

Carlisle (1987) stressed that the effective use of video involved three important variables: equipment, programming, and support. Equipment didn't seem to be a problem as VCR's were in most American schools.

> As the 1987-88 academic year started, according to Quality Education Data, 70,037 schools (out of 78,991) had at least one recorder; fewer than 29,000 had one in 1982. Almost 12,000 owned two to six units, or more, in 1986-87. This number had early doubled to 22,575 for 1987-88. (Carlisle, 1987, p.13)

The VCR with its strengths of reliability, simplicity, availability, and affordability in combination with ITV, ITFS, and cable links provided the teachers with a great instructional tool.

However, the VCR without the programming was useless. From Carlisle's (1987) chapter on programming, that didn't seem to be a problem either. He cited programs for all grades in all subject areas from reading and writing to math and social studies. With a fairly good supply of equipment and quality programming available, the area of good support was the variable that was still questionable. Without this proper support, the best supply of equipment and top quality programming was useless. An ideal support system performed many functions. It made equipment and programming available and provided program information. It offered in-service training to help teachers and administrators be aware of instructional resources and to encourage proper video activity. While the video was important to good instruction it was still just one tool that teachers used. This support needed to come from many different areas; the public television stations, curriculum coordinators, the superintendent, principals, district media coordinators, and building media specialists. However, as vital as these variables were, the most important was still the teachers. They were still the ones that had to choose a video, preview it,

study the accompanying manual and then manipulate the viewing and suggested follow-up activities to fit smoothly with their curriculum (Carlisle, 1987).

With the advancement of modern technology, such as videos and computers in the educational system, it was a surprise to read an article that stated that filmstrips were maintaining an even stronger position than ever as audio-visual aids in the classroom. According to Clark (1988), filmstrips were still a practical and widely used instructional tool for several reasons. The newer projectors were not only easy-to-use but versatile enough to accommodate either all-class use or independent student investigation. Most of the recent filmstrips included support materials such as teacher's guides, lesson plans, posters, student worksheets, tests and ideas for special projects. The activity and skill sheets accompanying filmstrips and computer software programs expanded their use in the tri-model learning that mixed audio-visual, computer and other technologies. Filmstrips were much more cost-effective. Filmstrips were usually less expensive than slides and films and comparable in cost to videos. However, filmstrip projectors ranging in cost from

$100 to $500 were considerably more cost-effective than video equipment that could easily exceed $1000. There are hundreds of new filmstrips produced each year. These filmstrips cover virtually any subject area on almost any topic. Other unique advantages of filmstrips were holding an image and ease of going backward or forward. While there was a trend to transfer many educational filmstrips to video, Clark did not see a trend toward putting all existing filmstrips into video format (Clark 1988).

The history of audiovisual as an instructional aid in our schools, revealed that there were many problems connected with the successful use of audiovisual aids in the classroom. These problems seemed to focus on lack of training and the improper ultilization of audiovisuals as instructional aids.

CHAPTER III

METHODOLOGY

Restatement of the Major Research Hypothesis

Audiovisual materials and equipment can be used effectively as teaching aids in the classroom, but like all teaching aids, their effectiveness depends upon how they are introduced, carried through, and the follow-up activities.

Research Design: Groups to be Compared.

A total of 78 second grade students were involved in this study. The students were already placed, heterogeneously, in the six second grade classes. The three classes that were used in this study had approximately the same numbers of high, low and average students. The children ranged from seven to nine years old. To increase the internal

validity of this study, the three classes were further divided by taking a list of students' names from each class and numbering them into three random groups.

This study evaluated the effectiveness of videos and filmstrips in the classrooms. The study was conducted in three second grade classrooms in a public school, during the first semester of the 1987-1988 school term. There were three lessons in literature, three lessons in social studies and three lessons in science. Each lesson was presented to the three groups. There was (a) the control group that was taught in the normal way, reading the material from the printed page and discussing it, (b) the modified experimental group that saw the video or filmstrip, and (c) the experimental group that had an introduction, discussion and activity before seeing the audiovisual. A 30 minute block of time was set aside, once a week, on Thursday afternoon to exchange students and teach the lessons. It was soon determined that the experimental group needed ten to twenty minutes more time to allow for the introduction, discussion and student activities. After a science lesson ended with incomplete tests from the experimental group,

it was decided to extend the time to 45 minutes. The control group and modified experimental group would have some coloring sheets or un-related activities to do while they waited for the experimental group to complete their lesson. In having three lessons in literature, science and social studies, all three teachers taught each group in the three subject areas, to allow for different teaching styles. Each group was tested after each lesson for comprehension of details and concepts.

Calendar in Carrying Out Study

The literature unit was taught in October. The first Thursday the story was "The Magic Paint Brush" by Hisado Kimishima. Teacher A taught the control group, teacher B taught the modified experimental group, and teacher C taught the experimental group. The second Thursday the story "Peter Rabbit" from a book written by Beatrix Potter. Teacher B taught the control group, teacher C taught the modified experimental group, and teacher A taught the experimental group. The third Thursday the story was "The Little Red Hen" from the book written by Beatrix Potter. Teacher C taught the control group,

teacher A taught the modified experimental group, and teacher B taught the experimental group.

In November and December the science unit was taught. The first lesson was on moths and butterflies. Teacher A taught the control group, teacher B taught the modified experimental group, and teacher C taught the experimental group. The second lesson was on how animals get ready for winter. Teacher B taught the control group, teacher C taught the modified experimental group, and teacher A taught the experimental group. The third lesson was on migration. Teacher C taught the control group, teacher A taught the modified experimental group, and teacher B taught the experimental group.

During the month of February the social studies unit was taught. The lesson on Mexico was taught the first week. Teacher A taught the control group, teacher B taught the modified experimental group, and teacher C taught the experimental group. The lesson on community workers was taught the second week. Teacher B taught the control group, teacher C taught the modified experimental group, and teacher A taught the experimental group. The lesson on citizenship was taught the third week. Teacher C

taught the control group, teacher A taught the modified experimental group, and teacher B taught the experimental group.

Sampling Design and Procedures

The three classes in this study were picked because they were all in the same building, on the same hall and the same grade level. The teachers of these three classes used similar teaching methods and had a good working relationship. The students remained with their assigned teacher except during the time the lessons from this study were taught. The students changed to their assigned group until the lesson was taught and tested. The control group was read the story or material and discussed it as usual. The modified experimental group viewed the story or material on video or filmstrip. The experimental group was introduced to the story or material, viewed the same related video or film, followed by discussion and activities, such as coloring pictures, plays, and experiments. All three groups were given the same test on content and comprehension of story or material.

Three literature lessons were developed, three

science lessons developed, and three social studies lessons developed. The groups met once a week for 30-50 minutes on Thursday afternoon. The groups remained the same, but the teachers took turns teaching different lessons to control for different teaching styles.

Instrumentation, Tools for Measuring Variables

The students were tested immediately after the lessons for details and comprehension. These tests were paper and pencil type tests, pasting pictures in sequence, and drawing and coloring objects in class relationships. These tests were made up after viewing the video or filmstrip and reviewing the regular printed material. All three groups were given identical tests that tested concepts and details taught in all three lessons. The questions were clear, concise and written on the second grade level. The teachers read the directions and questions for the low readers. To increase the internal validity of the experiments, there were no pretests. The results of the tests were graded and recorded.

After teaching and evaluating the results of the tests over the literary unit, it was discovered that the random grouping had resulted in some unequal groups. The experimental group consisted largely of much lower ability children than the modified experimental group. The control group was only slightly higher than the experimental group. Due to a 20% difference in the modified experimental group's composite achievement test scores and the other two groups, it was necessary to use the analysis of covariance method in comparing means. With .05 predetermined as the level of significance, the analysis of covariance resulted in no significant difference in the test results.

Protection of Human Subjects:

Once permission was granted from the administration, a letter was sent to the parents of all the students involved, explaining what was being done and the purpose for the project. The letter encouraged the parents to call if they had any questions about the project.

CHAPTER IV

Results

In order to test the hypothesis; that for audio-visual aids to be used effectively in the classroom to teach details and comprehension of story and lesson content they must be properly introduced with a study guide and followed by related activities and evaluation, three classes were used. Three hetergeneously grouped classes were regrouped into three randomly chosen groups for this project. This was done by taking a list of the students' names from the three classes and numbering them into three groups. On Thursday afternoon the three classes were regrouped into their random groups for the lessons. The control group was taught the usual way by reading the material and discussing it, the modified experimental group saw a related film, and the experimental group had the introduction, activities and the related film. All

three groups received the same tests, which were scored and recorded.

After teaching, observing and evaluating the results of the tests it was discovered that the random grouping had resulted in some unequal groups. The experimental group consisted largely of much lower ability children than the modified experimental group. The control group was only slightly higher than the experimental group. That meant that the analysis of covariance method would be helpful in comparing the results of the tests.

The literature unit went quite smoothly. For three Thursdays in October, the three classes were separated into their random groups immediately after lunch for the lessons. Even though the lessons went well, the control group and the modified experimental group were finishing before the experimental group. The experimental group took longer due to the introduction and activities. The control group and modified experimental groups had to be kept busy drawing and coloring while the experimental group finished. Since more time than the story-time right after lunch, was needed the time was changed to the last fifty minutes of the day.

The science unit was begun smoothly, but had to be rescheduled and postponed due to conferences, teacher meetings and Thanksgiving. The first two lessons were completed in spite of the hectic scheduling and the holidays. Then just before Christmas the last science lesson seemed to fall apart and was never completed. It had been a sacrifice for the cooperating teachers to take so much time from their schedules to help with this project. The dedication and commitment were apparent, but the energy and spirits were lagging. The last science lesson was started but never completed due to a late start from holiday activities. Later, I met with the cooperating teachers and they agreed to help complete the project by doing the social studies unit. The cooperating teachers were encouraged to choose the topic for their experimental lessons to increase their enthusiasm and cooperation. This caused extra work and planning but resulted in the social studies unit being completed more smoothly than the literature and science units. The experimental group's lesson regarding Mexico included a speaker that had recently returned from Mexico with many items and pictures to go along with the filmstrip.

The experimental group's lesson over citizenship included a short play, written by one of the cooperating teachers and acted out by the students, to go along with the filmstrip.

Due to a 20 percent difference in the modified experimental group's composite achievement test scores and the other two groups scores it seemed appropriate to use the analysis of covariance in analyzing the results. With .05 predetermined as the level of significance, the analysis of covariance showed no significant differences in the test results. As shown in tables 1, 2, and 3, even though there were differences between scores, the differences were not large enough to support the hypothesis: Audio-visual aids are more effective in teaching comprehension and details of story and lesson content if they are properly introduced with a study guide and followed by related activities and evaluation.

Statiscal analyses of the data revealed additional information. It was pre-determined that p equal to or less than .05 would be the significance level. The covariates were the students' composite achievement tests scores. The modified experimental group's mean composite

achievement tests scores were 11.5 to 13.9 points higher than the other two groups for the literary unit, 16.0 to 19.5 points higher than the other two groups for the science unit, and 16.4 to 22.2 points higher than the other two groups for the social studies unit. These means changed for each unit because of absentism and children moving. Since the modified experimental group's scores were higher it was necessary to use the anaylsis of covariance in analyzing the results of the tests. Table 1 shows that the adjusted mean for the control group was .7 points higher than the experimental group. The adjusted mean for the modified group was .3 points higher than the experimental group. The test revealed a non-significant p of .5111.

Table 1

ANALYSIS OF COVARIANCE

LITERARY TEST DATA

	N	Test $\bar{X}$	Cov. $\bar{X}$	Adj. $\bar{X}$
Control	25	25.0400	49.9200	25.4724
Modified Experimental	23	25.7391	63.8695	25.0345
Experimental	23	24.5217	52.3478	24.7562

F = .7325 df = 69 p = .5111

In Table 2 the adjusted mean for the experimental group was .8 points higher than that for the modified experimental group and 1.2 points higher than the control group. The test revealed a non-significant p of .2039.

Table 2

ANALYSIS OF COVARIANCE

SCIENCE TEST DATA

	N	Test $\bar{X}$	Cov. $\bar{X}$	Adj. $\bar{X}$
Control	26	13.0385	49.7692	13.2982
Modified Experimental	23	14.1304	69.2174	13.6968
Experimental	24	14.3333	53.2917	14.4675

$F = 1.6201$ $df = 71$ $p = .2039$

Table 3 shows the adjusted mean for the experimental group was 2.6 points higher than that for the modified experimental group and 1.5 points higher than the control group. The tests revealed a non-signicant p of .9151.

Table 3

ANALYSIS OF COVARIANCE

SOCIAL STUDIES TEST DATA

	N	Test $\bar{X}$	Cov. $\bar{X}$	Adj. $\bar{X}$
Control	20	35.7500	46.55	36.9424
Modified Experimental	22	36.3636	68.7273	34.8561
Experimental	19	38.0000	52.3158	38.4904
	F = .0883	df = 59	p = .9151	

The N's were different on all the groups due to children moving and being absent. The tests were administered at the conclusion of each lesson. There were three tests for each unit and three units. There were nine tests, less the one science lesson that wasn't completed, for a total of eight tests. The points varied on the tests. Each test for the literary unit had ten questions for a total of 30 points possible for each student to attain in the literary unit. The first test in the science unit had 7 items and the second test had possible points for a total of 17 points for each student to receive for this unit. The social studies tests had three possible scores of 14, 17 and 15, for a total of 46 points for each student to receive for this unit.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

The purpose of this research was to test the hypothesis: For visual aids to be used effectively to teach comprehension and details of story and lesson content they must be introduced with a study guide and followed by related activities and evaluation. In order to test this hypothesis, three heterogeneous classes were regrouped into three random groups. There was a control group that received the usual reading and discussion lesson, the modified experimental group that viewed a related film or video. The experimental group had the planned introduction, viewed the filmstrip or video, followed by related activities. All three groups were given the same tests.

The first area of concern surfaced when it was discovered that the modified experimental group consisted of much higher ability children than the

other two groups. This made it necessary to use the analysis of covariance method to tabulate the results. With .05 predetermined as the level of significance, the analysis of covariance resulted in no significant differences among the test results. Even though there were some differences in the scores, there were not enough differences to support the hypothesis. There are several possible explanations for the lack of significant difference in the test results.

One possiblility was the grade level. At second grade, maturity seems to be an important factor in learning and retaining content and skills. It was observed during the lessons that some of the children lacked the ability to concentrate on any part of the lesson for more than two or three minutes. After a few minutes they would start moving around, distracting themselves and those around them. All three tests on the literary unit involved writing simple answers to questions. This was effective with some but not with others. On the next two units, there was an attempt to make the tests more interesting by having them cut and paste items in the correct sequence, draw and color answers, or classify items in similar categories.

This helped, but there were some that still wanted no part of paper work. Possibly, if there had been a way to work more on a one-on-one basis with the children, the answers would have been more accurate.

Another problem was scheduling. With three different classes, it was difficult to work out a quality time block for switching to the random groups for the lessons. Mornings would have been better for un-interrupted time blocks, but that was not feasible because the classes were already regrouped into six different groups according to reading levels. So that left the afternoon. Because of the reading levels, all the second grades had their music, physical education, library and art scheduled in the afternoons. Each schedule was different to accomodate one music teacher, one physical education teacher, one art teacher, and a part-time librarian. Thursday afternoons seemed to be the best for the three classes involved. None had art or library that afternoon and two had music and physical education at the same time. So that left a half hour immediately after lunch and fifty minutes at the end of the day to regroup for the lessons.

Attitudes Toward the Project

The cooperating teachers were committed and tried to fulfill their committment but it was difficult because their schedules were already demanding and fatiguing. Since this was not their project it seemed to add more stress to an already tight, stressful schedule. Letting them pick the topic for their experimental lessons increased their interest. Their ideas were better than the lessons that had been previously planned for this unit. One teacher wanted to do a lesson on Mexico with a guest speaker who had just returned from Mexico. This was an excellent idea, but it involved some rescheduling since the guest speaker was getting ready to leave again. It took a trip to her home and two conferences to correlate her material with the social studies curriculum and the tests. The other teacher wanted to do a lesson on citizenship, using a skit by the students. This involved extra practice with the students in the skit and extra planning to cordinate it with the social studies curriculum, filmstrip and testing. The students seemed to enjoy the lessons. Thursday afternoons were greeted with enthusiasm and many positive

comments were heard from the students. During the month of January when the teachers were regrouping, there were many queries as to when we were going to do "the project" again. By then students were calling it "the project." However, it was observed that the enthusiasm lagged when the tests were distributed. It helped when a second page was added for drawing, labeling and coloring some of their answers to the questions. At the conclusion of lesson nine, when it was announced that this ended the lessons for the project, there were many moans and groans of protest, especially from the control group. They were upset because they wanted to know why they didn't have their turn viewing the filmstrips and videos. As redemption and appreciation, all three groups were treated to chocolate cake, the following Thursday for their participation in the research project.

Conclusion

This project did not support the hypothesis: Audio-visual aids, to be effective in teaching comprehension and details of story and lesson content, must be introduced with study guides and followed by related activities and evaluation. The

positive attitudes and enthusiasm showed the students' willingness to try new things and their eagerness to incorporate visual aids into their lessons. Kinder (1957) pointed out that for audio-visuals to be effective, there must be a dynamic teacher, variety, active student particiation, checking up on things learned, follow-up, and application. Research showed that for any instructional materials to be effective they must be introduced and then followed by related activities.

Recommendations

Further studies are needed to determine how to best use audio-visual aids in the classroom.

1. A study involving older students might give a more accurate account of the effectiveness of audio-visual aids.

2. When using primary age children, testing them individually, such as the study done by Diaz-Guerrero and Haltzman, (1974), referred to on page 19, or the study by Hayes, Kelly and Mandel, (1986), referred to on page 31, might be more accurate.

3. In future studies, it would seem advisable

to not have cooperating teachers that hinder the continuity of the study.

4. Even though random grouping seemed best for a research project, the scheduling and time elements should have also been considered. Trying to provide for random grouping from three different schedules was a serious problem in doing this research project.

Appendix A

Students' Scores

Control Group

	Literary Scores			Science Scores			Social Studies Scores			Composite Achievement Scores
W. Arroyo	9	9	10	6	8	7	13	13	13	72
N. Bucher	9	8	10	2	5	8	11	10	13	51
J. Eidson	9	8	9	6	8	11	12	15	11	64
J. Lawson	5	5	7	4	9	1	9	13	10	46
D. Shook	6	6	9	3	7	8	6	14	12	24
J. Meyer	9	9	10	moved						91
C. Guyton	10	10	10	7	9	7	moved			76
L. LePage	10	10	10	7	10	12	14	15	15	99
J. Russell	9	8	10	7	8	7	14	14	14	94
E. Johnson	10	9	9	6	10	6	11	13	15	82
S. Schoening	7	8	8	6	8	7	11	10	11	13
R. Turner	10	8	9	7	9	8	12	13	9	51
Z. Lindsay	9	7	5	5	7	5	12	13	11	41
M. Grimes	absent			5	9	9	absent			46
A. Ingrassia	7	6	9	7	7	4	6	14	10	9
K. Smelcher	8	5	8	3	7	8	9	15	11	13
D. Blount	9	10	10	5	9	11	12	16	15	91
T. Davis	8	7	9	6	5	5	8	11	12	24
J. Halton	8	8	9	6	8	8	9	15	13	55
R. Ingrassia	8	8	10	3	6	7	9	11	12	32
S. Mansfield	5	3	10	6	7	5	8	10	12	20
E. Smith	8	9	9	7	7	10	12	15	12	37

J. Russell	8	8	9	6	8	9	absent			64
D. Crawford	9	8	10	3	7	6	11	14	12	13
K. Loddeke	5	5	8	3	6	6	absent			2
N. Perkins	9	9	10	4	8	8	absent			84

Modified Experimental Group

	Literary Scores			Science Scores			Social Studies Scores			Composite Achievement Scores
J. Bozek	9	10	10	6	9	12	13	14	12	87
N. Edwards	7	6	7	absent			7	13	10	16
D. James	9	10	8	absent			9	8	9	28
M. Pieper	8	10	9	6	10	13	13	15	15	95
J. Young	7	9	9	5	9	5	14	16	12	46
A. Current	absent			6	10	10	13	13	14	95
J. Hoelscher	9	8	9	6	9	9	12	12	13	84
R. Manzotti	9	10	10	6	6	6	11	12	9	68
A. Cripps	absent			6	8	11	moved			72
M. Quinley	5	10	9	6	6	7	6	15	9	24
B. Stears	8	9	9	6	10	8	10	15	10	51
S. Moore	8	3	9	6	9	6	absent			20
J. Miles	8	6	7	absent			6	13	8	68
V. Haynes	7	7	10	6	9	4	12	10	12	89
N. Miller	9	8	10	6	8	13	14	15	12	60
T. McDowell	8	9	10	6	7	11	13	15	12	91
S. Fitzroy	9	10	10	6	9	13	14	14	13	91
K. Garcia	10	10	10	6	6	9	13	16	14	93
C. Hummel	9	7	8	6	10	7	13	12	13	55
A. Krupinski	9	9	10	6	8	7	8	16	12	46
P. Schneider	7	7	9	6	6	6	6	16	12	72
B. Walker	7	10	9	6	7	10	11	8	11	68

B. Becker	6	8	9	6	6	5	absent				32
H. Harris	9	8	10	6	10	12	14	16	9		96
K. Palmer	10	10	10	6	10	10	12	16	15		89
M. Thomas	new						9	13	11		

Experimental Group

	Literary Scores			Science Scores			Social Studies Scores			Composite Achievement Scores
M. Blevins	7	6	9	3	5	--	11	14	8	41
M. Patterson	10	9	10	6	10		11	17	11	55
M. Thelen	7	5	9	4	7	--	11	13	12	20
A. Cline	10	9	10	7	10	--	14	17	11	95
M. Hammond	9	8	10	7	10	--	13	17	13	55
E. Lindsey	10	9	10	6	9	--	12	15	14	87
J. Grooms	7	10	9	6	9	--	moved			60
J. Crain	8	8	10	6	7	--	11	15	10	20
C. Phipps	9	5	9	7	9	--	11	8	11	20
C. Skinner	8	9	10	6	10	--	9	13	11	60
J. Wallace	6	6	10	5	7	--	14	17	9	24
G. Gorman	7	8	10	7	10	--	13	16	13	24
C. Deuser	9	8	10	6	9	--	12	17	14	93
J. Trendley	3	4	8	7	7	--	5	10	8	20
M. Eise	absent			6	6	--	absent			37
C. Blechle	absent			6	5	--	moved			91
T. Horton	9	9	10	6	5	--	14	16	13	99
C. Koelbaum	10	8	10	6	10	--	12	16	13	94
J. Musgrove	8	5	10	5	9	--	12	17	15	60
B. Smythe	8	9	10	7	9	--	moved			37
L. Baker	6	7	10	absent			11	15	11	28

C. Davidson	6	7	8	6	8	--	11	13	11	20
K. Mills	6	9	9	7	9	--	absent			72
S. Stahlings	9	9	10	6	9	--	14	17	15	79
J. Kelly	5	5	6	moved						41
A. Bowman	absent			6	6	--	moved			16

Appendix B

Tests Administered to Students

LITERATURE UNIT

Test One

Ma Lien and the Magic Brush
by Hisako Kimishima

1. What was Ma Lien's greatest dream?

2. Why didn't he have a paint brush?

3. How did he get a brush?

4. What kind of a brush was it?

5. How was he to use it?

6. Name 3 things that Ma Lien painted.

7. Could anyone else paint with this brush?

8. What did Ma Lien paint for the Mandarin?

9. What happened to the Mandarin?

10. What happened to Ma Lien?

LITERATURE UNIT

Test Two

The Tale of Peter Rabbit
by Beatrix Potter

1. How many little rabbits were there?

2. What happened to their father?

3. Did all the rabbits help with the work?

4. Where did the good little bunnies go?

5. Where did Peter go?

6. How did Peter get caught in the net?

7. Where did Peter hide in the tool shed?

8. Name the two animals Peter saw while he was looking for a way out of the garden.

9. What happened to Peter's shoes and jacket?

10. What happened to Peter when he got home?

LITERATURE UNIT

Test Three

The Little Red Hen
by Beatrix Potter

1. Name three animals that lived close to the little red hen.

2. What did the little red hen find?

3. Who planted the seeds?

4. Who helped plant the seeds?

5. Who cut the wheat?

6. Who baked the bread?

7. Who helped bake the bread?

8. Who ate the bread?

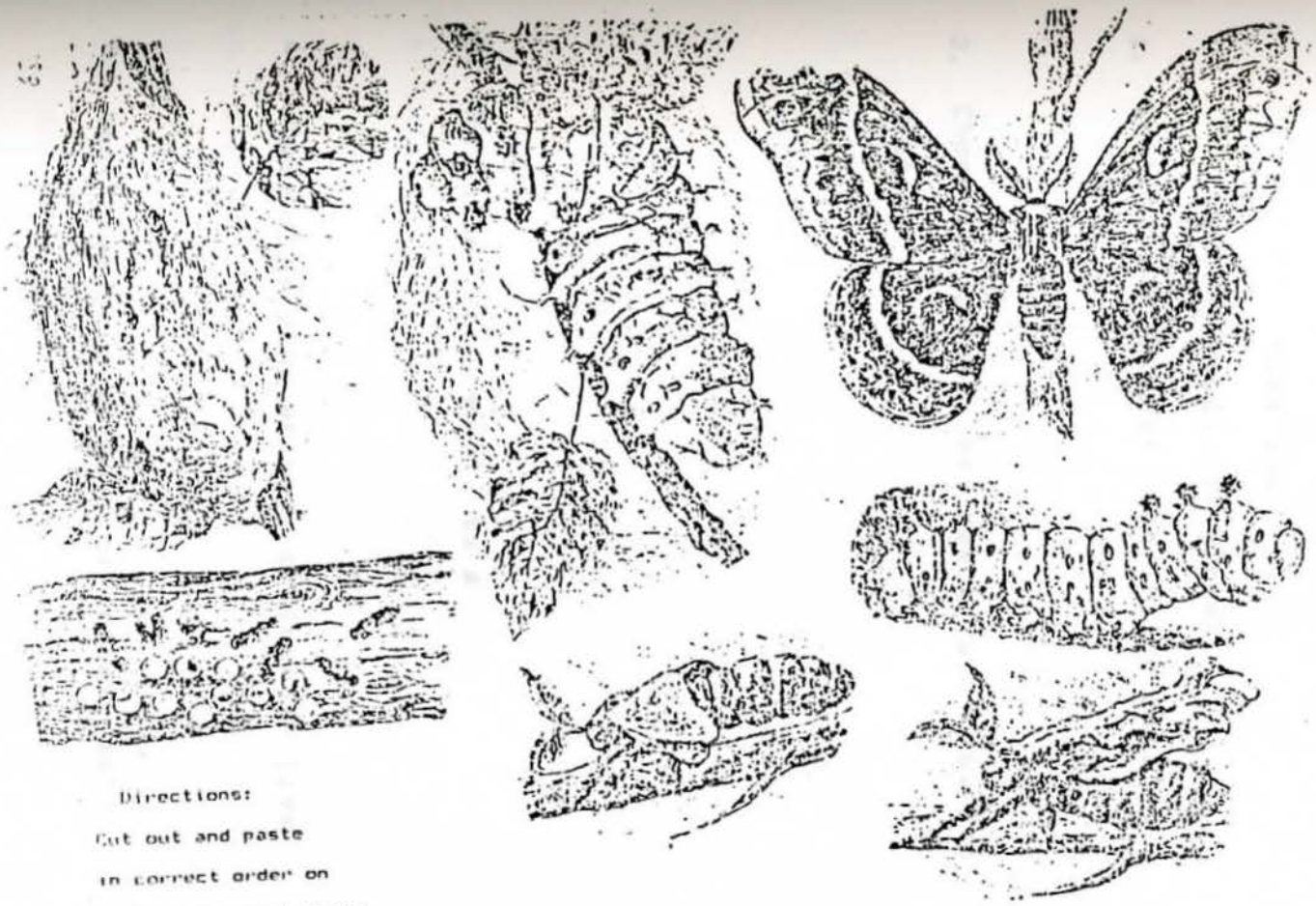
9. Who wanted to eat the bread but didn't?

10. Who do you think should have eaten the bread? Why?

SCIENCE UNIT

Test One

Moths and Butterflies



Directions:

Cut out and paste

in correct order on

another piece of paper.

SCIENCE UNIT

Test Two

Getting Ready for Winter

1. What is the weather like in the fall?

2. Choose an animal, or insect, and draw its picture.

3. My animal, or insect, is a

4. Where does your animal, or insect, live?

5. What does your animal, or insect, eat?

6. Name three things your animal, or insect, does to get ready for winter?

   1.

   2.

   3.

7. Where does your animal, or insect, live in the winter?

8. How do the trees get ready for winter?

9. How do plants get ready for winter?

10. What do you like best about fall?

Draw and color a picture about fall on the back of this paper.

SCIENCE UNIT

Test Three

Migration

1. Name three reasons animals migrate.

   1.

   2.

   3.

2. What two seasons are busy traveling time for animals that migrate?

   1. 2.

3. Name three animals that migrate.

   1.

   2.

   3.

4. How do animals prepare for migration?

5. Where do the Monarch butterflies spend the winter?

   1. 2.

6. Draw at least 3 or 4 animals, in the air, water, or land that migrate. Write their names beside them, spelling them the best you can. Color if time.

SOCIAL STUDIES UNIT

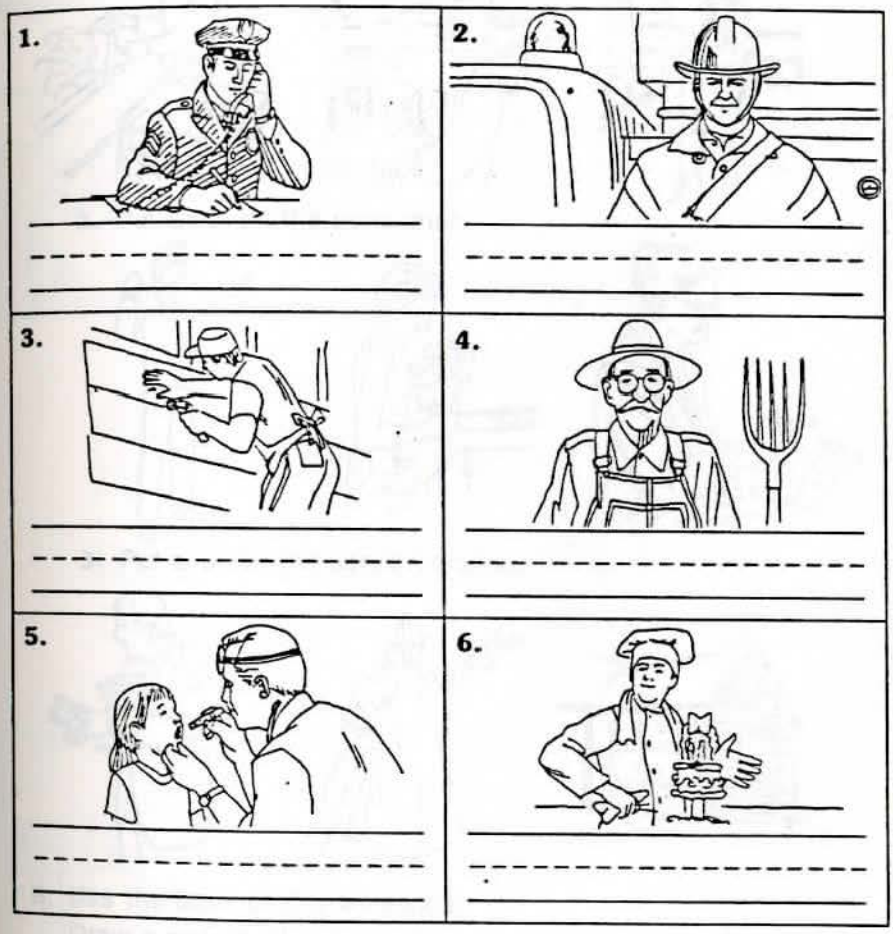
Test One

Community Workers

Worksheet 16

Name _____

A. Look at each picture.
Write *service worker* or *producer* in each blank.



B. Use the back of this worksheet.
Draw a picture of two service workers in your school.
Tell what they do.

Worksheet 23

Name _____

A. 1. Put a circle around the producer.


2. Put an X on the consumer.



3. Put a ✓ on the service worker.

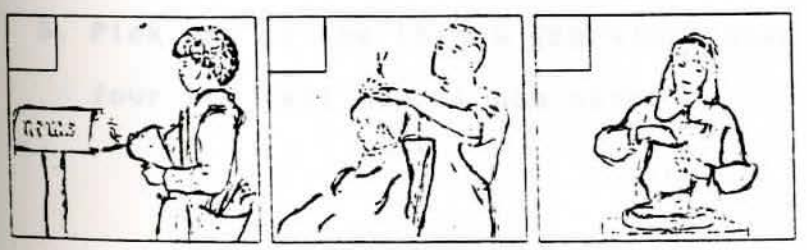


B. Use the back of this worksheet.
Draw a picture of a consumer.
Where can you find a consumer?
What does a consumer do?

NAME _____

Workers Provide Goods and Services

▶ Some workers make goods for us. Some workers provide services. Look at the workers pictured below. Write **G** in the box if the worker makes goods. Write **S** in the box if the worker provides a service. Color the pictures.



SOCIAL STUDIES UNIT

Test Two

Mexico

1. If you were going to Mexico from here, which direction would you go? Circle your answer.

   North South East West

2. Do the children in Mexico look different than you? If so, how?

3. What is the weather like in Mexico?

4. Name two things that the people in Mexico make?

   1. 2.

5. Pick one of the things you wrote down for number four and tell how it was made.

6. What does it look like?

7. What do they do with the things they make?

8. Draw and label three things you might see at the market place on the back of this worksheet.

9. Are their holidays different than ours?
If so, how?

10. On the map below color Mexico yellow and the United States green.

SOCIAL STUDIES UNIT

Test Three

Citizenship

1. How should you treat a friend?

2. What should you do if someone falls down?

3. What should you do if someone punches you?

4. What should you do when your team loses?

5. Name two rules you should remember in the library.

   1.

   2.

6. Name two rules you should remember when lining up to go to the library, art room, or lunchroom.

   1.

   2.

7. Name three rules you should remember in the classroom.

   1.

   2.

   3.

8. Name two rules you have at home.

   1.

   2.

9. What is citizenship?

10. What kind of a person is a good citizen?

11. Write a rule and draw a picture for it on the back of this worksheet.

BIBLIOGRAPHY

Adams, D. & Hamm, M. (1987). Teaching students critical viewing skills. Curriculum Review, 26(3), 29-31.

Anderson, D. & Levin, S. (1976). Young children's attention to "Sesame Street." Child Developement, 47, 806-811.

Barbatis, G. (1978). The nature of inquiry and analysis of theoretical progress in instructional television from 1950-1970. Review of Educational Research, 48, 399-414.

Beaubien, R. (1984). The media mirror: A study guide on christian values and television. Washington, D.C. United States Catholic Conference, National Catholic Educational Association.

Brown, J., Lewis, R. & Harcheroad, F. (1973). AV instruction: Technology, media, and methods. New York: McGraw-Hill.

Carlisle, R. (1987). Video at work in American schools. Bloomington, Indiana: Agency for Instructional Technology.

Clark, J. (1988, January/Feburary). Filmstrips ...versatility and visual impact. Media & Methods. 20-22.

Costello, L. & Gordon, G. (1965). Teach with television; A guide to instructional TV. New York: Hastings House.

Dale, E. (1969). Audiovisual methods in teaching (3rd ed.). New York: The Dryden Press, Holt, Rinehart and Winston Inc.

Diaz-Guerrero, R. & Holtzman, W. (1974). Learning by televised "Plaza Sesamo" in Mexico. Journal of Edcuational Psychology, 66, 632-643.

Fredlander, B. (1973). Instructional television is the primary classroom: New horizons or another wasteland. West Hartford, Connecticut, Infant and Child Language Research Laboratories, Hartford University.

Gilkey, R. (1986, March/April). 16mm film, videotape, videodisc: weighing the differences. Media & Methods. 8-9.

Griffith, B. & MacLennan, D. (1964). Improvement of teaching by television. Columbia, Mo.: University of Missouri Press.

Hardaway, C. (1963). A study of attitudinal changes of teachers and pupils toward educational television. Terre Haute, Indiana: Indiana State University.

Hayes, D. & Birnbaum, D. (1980). Preschoolers' retention of televisied events: Is a picture worth a thousand words? Developmental Psycholgy, 16, 410-416.

Hayes, D., Kelly, S., & Mandel, M. (1986). Media differences in children's story Synopes: Radio and television contrasted. Journal of Educational Psychology, 78, 341-346.

Henderson, R. (1986). Preschooler's viewing of instructional television. Journal of Educational Psychology, 78, 44-51.

Hodges, Y., Gray, J., & Reeves, W. (1985, Summer). High school students' attitudes toward the library media program--What makes the differences? School Library Media Quarterly, 183-189.

Houser, B. (1978). An examination of the use of audiovisual Media in reducing prejudice. Psycholgy in the Schools, 15, 116-122.

Jamison, D., Suppes, P., & Wells, S. (1974). The effectiveness of alternative instructional media: A survey. Review of Educational Research, 44, 1-67.

Kincaid, H. (1974). Technology in public elementary and secondary education: A policy analysis perspective. Washington, D.C.: Office of the Assistant Secetary for Education.

Kinder, J. (1959). Audio-visual materials and techniques. (2nd. ed.). New York: American Book Company.

Laosa, L. (1976). Viewing bilingual multicultural educational television: An emprirical analysis of childern's behaviors during television viewing Journal of Educational Psychology, 68, 133-142

Lesser, G. (1974). Children and television: Lessons from Sesame Street. New York: Random House.

Lewis, R. (1983). Using Canadian Sesame Street segments in elementary classrooms to teach French. Programmed Learning and Educational Technology, 20, 190-196.

Lipps, B. (1976). Age trends in children's time-sharing performance. Journal of Experimental Child Psychology, 22, 331-345.

Lorch, E., Anderson, D., & Levin, S. (1979). The relationship of visual attention to children's comprehension of television. Child Development, 50, 722-727.

McConeghy, G. (1985, Nov.-Dec.). The state of TV production in higher Ed. TechTrends, 19-21.

Pezdek, K. & Hartman, E. (1983). Children's television viewing: Attention and comprehension of auditory versus visual information. Child Development, 54, 1015-1023.

Reider, W. (1985,Nov-Dec). VCRS silently take over the classroom. TechTrends, 15-18.

Solomon, G. & Gardner, H. (1986). The computer as educator: Lessons from television research. Educational Researcher, 15, (1), 13-19.

Swanson, R. & Henderson, R. (1979). Induction of a concrete operational concept through television modeling: Evidence and speculation on mediational processes. Comtemporary Educational Psychology, 4, 202-210.

Wagschal, P. (1986). Computers in the schools: Lessons from television. Curriculum Review, 25, (3), 31-34.