

**COMPARISON OF AN INTERPRETED AND CAPTIONED  
NEWSCAST AMONG DEAF HIGH SCHOOL GRADUATES AND DEAF  
COLLEGE GRADUATES**

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## ABSTRACT

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### **Title of Dissertation: Comparison of an Interpreted and Captioned Newscast Among Deaf High School Graduates and Deaf College Graduates**

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### **PURPOSE**

This study investigated the effectiveness of communicating verbal information to deaf persons using two different modes of presentation: print (captions) and sign language (interpreter). It was hypothesized that there would be no significant difference in the amount of verbal information received from a captioned or interpreted newscast by deaf high school graduates and deaf college graduates who are proficient in the use of sign language.

### **PROCEDURES**

Two ¾-inch color videocassettes of the March 28, 1974, ABC Evening News were produced for this study. One cassette was the regularly broadcast captioned evening news, the other was the same program using a superimposed sign language interpreter in lieu of captions. A multiple choice instrument comprised of 35 items was developed and tested on 48 randomly selected incoming students at the National Technical Institute for the Deaf. A chi square procedure was used to insure that the subjects did not recall the news of that day. The result was a 20-item multiple-choice instrument used to collect data during the actual experiment. The actual experiment was conducted at the national headquarters of Public Broadcasting Services in Washington, D.C. The test population was 104 randomly selected deaf persons from the Greater Washington Metropolitan Area, 52 college graduates and 52 high school graduates.

The study used a two by two factorial design with educational level as one factor and mode of presentation as the other. The design is characterized as a two factor completely non-repeated measures factorial experiment with equal cell sizes and all factors crossed. The two-factor by subject analysis of variance procedure was used to test the differences derived from the scores on the test of immediate recall.

### **FINDINGS**

At the .01 level of confidence, it was found that: (1) deaf college graduates made higher scores on a test of verbal learning under both captioned and interpreted conditions than did high school graduates; and (2) both college graduates and high school graduates received significantly more verbal information from the captioned newscast than college graduates and high school graduates received from the interpreted newscast.

## ***CONCLUSIONS***

1. Deaf high school graduates and deaf college graduates receive significantly more verbal information from a captioned newscast than from an interpreted newscast.
2. Deaf college graduates receive significantly more verbal information from a captioned newscast than deaf college graduates receive from an interpreted newscast.
3. Deaf high school graduates receive more verbal information from a captioned newscast than deaf high school graduates receive from an interpreted newscast.
4. The educational level of deaf persons determines the amount of verbal information received regardless of the mode of presentation used, but the greatest amount of information is transmitted by captions.

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# CHAPTER I: INTRODUCTION

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## BACKGROUND

The development of language in deaf persons and skill in its use has always been the major objective of the education of the deaf. A controversy in the field has been whether a deaf person should use the language of signs as a means of communication. Some educators adamantly insist that the use of sign language will prevent the development of speech and language resulting in a subculture removed from the mainstream of society. Others are just as adamant in stating that depriving the deaf of a visual means of communication will prevent the development of a well-rounded individual linguistically, educationally and emotionally. Regardless of the various opinions, the great majority of deaf persons use the language of signs as a means of everyday communication, particularly among themselves.

In recent years, however, there has been increasing interest in the use of manual communication, particularly with deaf children. Studies indicated that deaf children who had been exposed early to manual communication were superior in language skills to deaf children who had no such exposure and scored higher on psychological, social and/or educational scales. Furthermore, there was no evidence that early exposure to manual communication had any significant negative effect on the development of verbal language, of lipreading, or of speech.

Interest in sign language by members of the hearing population has grown tremendously over the past decade. The Communicative Skills Program of the National Association of the Deaf has been instrumental in establishing classes in sign language throughout the United States. In addition, a historical meeting at Ball State University in 1964 resulted in the establishment of the Registry of Interpreters for the Deaf, which has made significant advances in improving and expanding interpreting services to the deaf. This has greatly increased the use of interpreters (hearing persons well-versed in the use of sign language, fingerspelling and the simultaneous use of speech) in a variety of situations: in courts of law, on the job, in integrated classrooms, during lectures, during church services, during film showings, and most recently, on television programs.

Another significant and vital development has been the interest of the Federal Government in the deaf population of the United States. In 1958, the cultural, educational and general welfare of this population was greatly enhanced by the enactment of Public Law 85-905 (Appendix 1).

This law created the Captioned Films for the Deaf Program, a free-loan service of subtitled motion pictures similar in nature to the free-loan service of Talking Books for the Blind. Located in the United States Office of Education, the Captioned Films Program began operation with its first appropriation of \$78,000 in 1959 and since then has contributed greatly toward bringing deaf persons into more direct contact with the larger social environment.

Initially, the purpose of the Captioned Films Program was to provide subtitled general-interest (theatrical) films to the deaf. Educators of the deaf were quick to recognize the potential of captioned films and other visual media as a tremendous untapped educational resource. Consequently, Congress amended the original law several times. P.L. 87-715 (1962, Appendix 2) authorized research, training, production, acquisition and the distribution of educational media.

As a result, Captioned Films for the Deaf became involved in designing educational materials to meet the unique learning needs of the deaf and other handicapped individuals. In the field of deafness *per se*,

the broadened authority resulted in a number of field services and projects which included four Regional Media Centers for the Deaf, a comprehensive multi-media language development program, a computer-based media evaluation project, an individualized instruction program for the deaf, a distribution network of sixty captioned educational film depositories, and a library of captioned theatrical and documentary films. To more clearly reflect its expanded role, which utilized instructional technology as an inclusive tool for attaining instructional and behavioral objectives, the program's name was changed to Media Services and Captioned Films.

The program became involved in the utilization of television not only as a means of enhancing the instructional environment of the deaf, but also in exploring ways to make television as much as reality in the life of the hearing-impaired individual as it is for his hearing neighbor. Television offers extraordinary opportunities since, like film, it provides information through visual images. Its immediacy and availability in 112,000,000<sup>1</sup> homes in the United States makes it the most persuasive and penetrating of all media. The addition of captions permits by-passing the audio track making it possible for deaf persons to reap the benefits of not only normal programming but also emergency announcements, weather conditions and news bulletins. Through an agreement with WGBH-TV in Boston, Massachusetts, Julia Child's "The French Chef" was captioned to explore the feasibility of this process. The success of this experiment led to the captioning of other programs, and in late 1972, it was decided to attempt a captioned version of the President's Inauguration Address, which was to take place on January 20, 1973. As a result of a cooperative venture involving private and government agencies, the inauguration was rebroadcast with captions seven hours later over the Eastern Educational Television Network and again the following night over the National Public Broadcasting (PBS) Network. This particular experiment proved the feasibility of taking an event off the air and rebroadcasting it later with captions. The result has been a captioned national daily televised news program, which is broadcast five evenings per week over the Public Broadcasting Services Television Network. This program commenced in December 1973 on ten stations on the east coast and is currently broadcast across the country in 127 cities.

Captions are not the only means for transmitting verbal information over television for deaf persons. The language of signs has unique capabilities for the transmission of verbal information when an interpreter is used, as oral speech can be systematically presented by a qualified sign language interpreter. This can be done either on a live, real-time, or delayed basis. Such an interpreter serves the same purpose as a foreign language interpreter at a United Nations conference or in any situation when two or more persons do not have a common language or the means to communicate with each other. Television has the advantage of being able to transmit manual communication using signs to reinforce what is being said, or to reinforce the same information using captions.

Sign language is used to transmit verbal information in certain situations, such as: (1) telephone conversations, (2) group meetings, (3) Congressional hearings, (4) one-to-one situations when the hearing person proves to be difficult to lipread, (5) to "listen" to lectures at the university level, and (6) to "listen" to speeches at conferences and meetings. Interpreters are used by many deaf persons in (1) legal situations, (2) medical situations, (3) religious situations, and (4) job placement situations. Through signs, a deaf person can participate in the flow of information, entertainment, and everyday conversation that the hearing person takes for granted. Interpreters and sign language are a valuable resource that the deaf population can not do without. On the other hand, Captioned Films for the Deaf has had a profound effect on the deaf population.

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<sup>1</sup> Television Information Office, 745-5th Avenue, New York, New York 10022.

Captioned Films have changed the lifestyle of the deaf by opening new and alternative avenues of communication. Originally, captions were geared not to exceed a reading speed of 120 words per minute. This was a decision made by the Captioned Film staff in the early days of the program. Shroyer (1973) experimented with the reading rates and comprehension levels of deaf children and stated:

However, in actuality, based on the findings of this investigation, the mean reading presentation rate varied from a low of 59 words per minute in one film to a high of 126 words per minute in another film. This variation is probably due to attempts by captioned film producers to have captioned information coincide with the pictorial information shown. (p. 3)

Shroyer's assumption is correct, and during the early years there were some complaints that the captioned presentation was too fast. However, Norwood (1971) pointed out that the introduction of "new wave" films resulted in an arbitrary decision to increase the maximum rate to 144 words per minute since such films were restricted to adults, and no complaint has to date been received by the Captioned Films staff. One can speculate that a decade of captioned films may have conditioned the deaf person to receiving information via captions and has resulted in developing certain skills for acquiring verbal information.

During the development of the national captioned news telecast, a number of communities used sign language interpreters to broadcast the news to deaf persons within the community. One of the cities that used an interpreter was Rochester, New York, *which was the only community to carry an interpreted and captioned version of the same news source each evening*. A survey was made of the deaf community in Rochester, which seemed to strongly favor the captioned version, and resulted in the withdrawal of the interpreted version. Nevertheless, there were some questions which could not be resolved by the survey, but only through controlled experiment.

## ***THE PROBLEM***

Much information has been gathered regarding the usefulness of interpreters and the effectiveness of captions, but no study has directly compared these two modes of presentation in terms of the information conveyed by the two modes. For this reason, the proposed study was limited to two principal forms of presenting verbal information in a visual medium. These modes were manual communication (interpreting) and captions.

Additionally, the relative effectiveness of interpreted and captioned formats may vary depending on the educational backgrounds of deaf viewers. Will the relative effectiveness vary between high school and college graduates? This question may relate to the reading abilities of the viewer, and both populations are reflected among current and potential viewers. These two groups are considered collectively in the first of the following research questions:

1. Among deaf persons proficient in manual communication and across all educational levels, is there a difference in the amount of verbal information received as a function of the two modes of presentation (captioned vs. interpreted)?
2. Is the relative effectiveness of the captioned version and the interpreted version related to the educational level of the deaf viewers?

## ***HYPOTHESES***

1. Deaf viewers collectively (high school and college graduates), all of whom have proficiency in the reception of the language of signs, will not differ significantly in the amount of information received via a televised national news program augmented by captions or an interpreter.
2. Deaf viewers who have no college experience, all of whom have proficiency in the reception of the language of signs, will not differ significantly in the amount of information received via a televised national news program augmented by captions or an interpreter.
3. Deaf viewers who are college graduates, all of whom have proficiency in the reception of the language of signs, will not differ significantly in the amount of information received via a televised national news program augmented by captions or an interpreter.

## ***REVIEW OF THE LITERATURE, PROCEDURES AND FINDINGS***

Chapter II is a review of the literature which clearly shows there is a paucity of research in the education of the deaf dealing with the specific problem explored in this study as the utilization of media is a recent development.

Chapter III describes the population, the treatment, the design of the instrument and its validation in Rochester. The experimental design is followed by procedures for administering the treatment and test, and the use of the analysis of variance to reveal the differences on the test of immediate recall.

Chapter IV presents the various statistical treatments used to test the null hypotheses and the data obtained. In the final chapter, experimental results are summarized and specific recommendations are made.

## CHAPTER II: REVIEW OF LITERATURE

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Effective use of the visual media in instruction, be it projected still pictures, film or television, has been extensively documented (Allen, 1969; Chu & Schram, 1967; Hoban & VanOrmer, 1950; Tickton, 1971). The first major research study on the effectiveness of the visual medium (film) as an instrument of learning was undertaken in 1919 by Karl S. Lashley and John B. Watson (Hoban & VanOrmer, 1950). This research demonstrated that film was an effective means for conveying information.

Hoban and VanOrmer did a comprehensive and thorough review of research entitled Instructional Film Research, 1918–1950, a product of the Instructional Film Research Program at Pennsylvania State College. It clearly documented the value of audio-visual communication as an effective and viable means of facilitating learning. William H. Allen summarized research findings in “Audio Visual Communication Research,” published in the third edition of the Encyclopedia of Educational Research (1960). Allen stated, “the evidence clearly supports the conclusion that films can teach factual information effectively over a wide range of subject matter content, age ranges, abilities, and conditions of use. This factual learning, however, tends to be rather specific to the information communicated by the film.” Chu and Schramm (1967), in Learning From Television: What the Research Says, commented:

There can no longer be any real doubt that children and adults learn a great amount from instructional television, just as they do from any other experience that can be made to seem relevant to them—experiences as different as watching someone rotate a hula hoop or reading the encyclopædia. The effectiveness of television has now been demonstrated in well over 100 experiments, and several hundred separate comparisons, performed in many parts of the world, in developing as well as industrialized countries, at every level from preschool through adult education, and with a great variety of subject matter and method. (p. 10)

Tickton (1971) stressed that there can be no doubt that media are effective instructional tools, but there is a need to harness modern instructional technology as a means of improving learning in our instructional system. The inefficiency of the traditional self-contained classroom still dependent upon the blackboard and slide projectors must be replaced by innovative approaches that provide for the most effective possible application of technology to education.

### ***VISUAL EDUCATION OF THE DEAF***

In view of nearly 60 years of research in the effectiveness of the visual medium as an instructional tool, it is not surprising that films and television now play important roles in general education. This is not yet true of the education of the deaf. For them, the use of film and television is a relatively recent development made possible by the enactment of Public Law 85-905 in 1958 (Appendix 1) which created the Captioned Films for the Deaf Program. As described and documented in Chapter I, the program began as a single-purpose operation providing a free-loan service of subtitled Hollywood feature films to the deaf population of the United States. Today, it is a comprehensive educational media and technology program for all the handicapped including its original purpose of serving the unique needs of the deaf.

Since deafness is a low incidence handicap, there was very little, if any, research done in the use of film and television with the deaf prior to the enactment of P.L. 85-905. Once the program began to take hold, interest in film and television as effective learning tools for the deaf and hearing impaired developed fairly rapidly. Stepp (1965) undertook a feasibility study which indicated that film could be an effective tool for teaching the deaf and that film could greatly reduce dependence upon the teacher. At

approximately the same time, Withrow (1965) was experimenting with the use of film to teach a basic 300-word noun vocabulary to deaf children. Both studies were primarily concerned with conveying verbal information via amplified sound and speech reading (lipreading).

## ***EFFECTIVENESS OF CAPTIONS***

Little research was done initially on the effectiveness of captions as a means of providing the deaf with verbal information. It was simply assumed that captions were a valid alternative to the sound track. The first known attempt to test this assumption was done by Fischer (1971) who used three captioned educational films and three uncaptioned versions of the same films with 20 deaf students at the Iowa School for the Deaf and 20 hearing students at an elementary school in Lincoln, Nebraska. All subjects in the study were matched in terms of reading levels and IQ's. Four groups of ten children viewed the films as follows:

1. Deaf children viewing a captioned film
2. Deaf children viewing an uncaptioned film
3. Hearing children viewing a captioned film
4. Hearing children viewing an uncaptioned film.

Sound was not used and no attempt was made to compare the results between the deaf and hearing children. One title showed a significant difference at the  $p < .001$  level in favor of captions for the deaf subjects and at the  $p < .01$  level in favor of captions for the hearing children. For the silent non-captioned films no significant difference was reported for either the deaf or hearing subjects.

Nix (1971) used two primary level films selected from the captioned films collection with four groups of deaf children between the ages of 9 and 14 at the Oregon and Washington Schools for the Deaf. A pretest was administered to two groups 24 hours prior to the film showings. A first post-test was given to all four groups immediately after the film showings. Following the second showing of the films 24-hours later, a second post-test was administered to all groups.

The results of the first post-test showed a significant difference at the .05 level for one film and at the .01 level for another film indicating the captions have a positive effect. The second showings yielded a significant difference at the .01 level for one of the films, but no significant gain for the other probably due to a higher readability level which limited further learning.

Davila (1972) demonstrated the effect of captions in motion and still pictures. Utilizing a 2 x 3 factorial design, 96 students at the American School for the Deaf were randomly assigned to groups of 16 to each cell. Captioned and no-caption treatments represented the two levels of the first factor and motion pictures, still pictures, and no visuals represented the three levels of the second factor. Subjects exposed to the captioned treatment, regardless of the presence or absence of visuals, scored significantly higher (.05 level) than those who were exposed to the no-caption treatment.

Nomeland (1973) investigated the effects of inserts and captions using motion and still pictures. The subjects for this study were 128 randomly selected students from the middle school at the Texas School for the Deaf. The results of the study supported Davila's (1972) findings that captioned treatments are superior to uncaptioned treatments across all modes of presentation.

Boyd and Vader (1972) matched 20 deaf pupils who were tested on their pre-exposure knowledge of information from a televised film. One group was shown the program without sound or captions and no gains resulted from the follow-up multiple choice test. Another group was shown the captioned version and significant gains resulted from the multiple choice test. The first group was then exposed to the captioned version and their scores improved significantly. The conclusion was that appropriate captioning significantly improves the amount of information obtained from a visual presentation.

Another study involving the use of television and captions was carried out by Gates (1970) who made a comparison of the various modes of transmitting verbal information to deaf subjects. Gates used seven different treatments as follows:

1. Captions only
2. Speaker-Manual Language Translator-Captions
3. Speaker-Captions
4. Manual Language Translator-Captions
5. Manual Language Translator only
6. Speaker-Manual Language Translator
7. Speaker only

The subjects in this study were students at the National Technical Institute for the Deaf, all of whom were required to possess a reading level of seventh grade or better. It was not stated whether these students were required to possess proficiency in the use of sign language and no pictorial stimuli were used as the presentation was a story of two fictitious warring tribes in Africa by a speaker, by captions, and by manual signs. Split screen techniques were used whenever two or more modes of transmission were presented simultaneously.

The study revealed that the four treatments involving the use of captions were significantly superior to those treatments that made no use of captions. Consequently, it was deduced that the amount of verbal information received by deaf students viewing instructional television was significantly greater when captions were incorporated into the presentation.

Propp (1972) attempted to determine which of the following modes of transmitting verbal information to deaf students was most effective:

1. Verbatim manual communication with spoken information translated word for word into the language of signs.
2. Hand-lettered captions in serial form in which summarized information is lettered on title cards and presented in serial sequence.
3. Electronic captions rolled upwards across a horizontally split screen.
4. Direct manual communication during which the speaker delivers verbal information in the language of signs without the intervention of a third person.

Forty-four students at the Illinois School for the Deaf with a reading achievement level of 5.0 or better participated in each of the four videotaped treatments. The results indicated that captions are the superior means of transmitting verbal information and that the serial form of presentation had a significant advantage over verbatim manual communication, direct manual communication and electronic roll captions.

## ***SIGN LANGUAGE AND INTERPRETERS***

Sign language was brought to the United States by Laurent Clerc of France, who became the first deaf teacher in America in 1817 (Moore, 1972). Since that time deaf persons have used the language of signs as a communication tool. Not only has sign language facilitated communication among deaf persons, but it is a means for participation in meetings and other situations when a sign language interpreter is used to convey what is being said. The earliest mention of this approach to transmitting verbal information in an official sense was mentioned by Stevens (1966), who did a study of the sign language at the first four Conventions of the American Instructors of the Deaf. Stevens reported that the Third Convention opened with a motion as follows:

Resolved: That whereas one of the prominent objects of our meeting is for the edification and improvement, as regards the best and most available methods of imparting instruction through the medium of the sign language, all members of the convention be respectfully requested to deliver their addresses in the sign language, as far as they can conveniently do so; and that interpreters be solicited to read the same *viva voca* for those present not familiarly acquainted with signs. (Third Proceedings of the Convention of American Instructors of the Deaf, p. 36)

Upon completion of the latest census of the deaf population, Schein (1974) reported that there were over 1,700,000 deaf people in the United States, and that more than 60% rated themselves as “good at expressive and receptive signing and fingerspelling” (p. 62). In spite of the use of sign language, it was not unusual to consider deaf persons as being linguistically deficient even when a higher level of communicative competence was present in manual language. However, during the past several years a considerable body of evidence indicates favorably that American sign language is a language in its own right (Bellugi, 1971; Klima & Bellugi, 1972; Schlesinger & Meadow, 1972; Stokoe, 1970).

The consequence of deaf children’s use of manual communication from an early age on the development of their English skills has motivated a number of studies dating back to the early 1960s and continuing through the present (Meadow, 1968; Quigley & Frisina, 1961; Stevenson, 1964; Stuckless & Birch, 1966; Vernon & Koh, 1970). Each of the studies used basically similar designs. Each was conducted on an ex post facto basis, each compared deaf children of deaf parents with deaf children of hearing parents, and each regarded English skills as dependent variable. Each study noted superiority for deaf children of deaf parents where reading and/or writing were criterion measures.

Several studies have been conducted in regard to the use of sign language as an effective means of transmitting verbal information. Hoemann and Tweney (1973) studied the ability of a group of deaf subjects for whom the language of signs is a primary system to translate English non-technical text into signs without using fingerspelling and a similar group of deaf subjects to translate the signs back to English. Videotape was used and when the signs were translated back to English, it was found to be very close to the original.

Klopping (1971) utilized three treatment methods—speech with voice, Rochester Method (fingerspelling with speech), and total communication (sign language, fingerspelling, and speech)—to present three non-fiction stories to 30 profoundly deaf students at the Arizona School for the Deaf. Following the treatments, the students were administered paper and pencil tests made up of open-response and multiple-choice items. Results were that total communication led to greatest understanding, with 76%

comprehension, followed by the Rochester Method (55%) and speech reading (35%). Differences among all three methods were statistically significant.

White and Stevenson (1975) conducted a study at the Maryland School for the Deaf and replicated it at the Michigan School for the Deaf in which four modes of communication were compared. They tested 45 students at one school and 36 at the other school with second and fourth grade materials. These materials consisted of 16 factual passages presented via oral communication, manual communication, total communication, and reading. Results from both studies indicated that the subjects received most information from reading, followed by manual communication, total communication, and oral communication. A significant difference was reported in comparing the first three modes with oral communication, and in comparing reading with total communication. No significant difference was noted in comparing reading with manual communication or manual communication with total communication.

## ***SUMMARY***

There is evidence from the review of the literature that captions and the language of signs can transmit verbal information to deaf persons with considerable veracity. However, in general, the literature which is available does not directly treat the question to which this investigation is directed: The direct comparison of two principal modes of presenting verbal information in a visual medium, manual communication (interpreting) and captions. Also, there is no information relating learning from captions or manual communication to the educational level of the learner.

## **CHAPTER III: RESEARCH, DESIGN, AND METHODOLOGY**

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This study was designed to compare two alternative modes for providing deaf persons with verbal information on film or television. These methods are a sign language interpreter and printed captions.

### ***THE POPULATION***

The greater Washington metropolitan area has over 3,000 deaf persons proficient in the use of the language of signs. This population includes those who have graduated from college and those who have never attended a college.

More than 1850 names were acquired by using the mailing lists of the Gallaudet College Alumni Association and the DEE CEE EYES, the official publication of the Metropolitan Washington Association of the Deaf. These lists were checked against each other to obtain two distinct groups of approximately 250 names in each group that represented college graduates and those who had not attended college.

The table of random numbers was used to select 100 names from each group. Letters (Appendix 8) explaining the purpose of the experiment were mailed including a short questionnaire requesting that the person indicate whether he/she (1) would be willing to participate in the experiment, (2) had either graduated from a college or had never attended college, and (3) was proficient in the use of sign language.

Responses indicated a high interest in participating. Upon the receipt of the responses, the table of random numbers was used once more to assign the participants to one of the two treatments: captioned news or interpreted news.

A second letter (Appendix 9) was mailed with instructions to appear at the national headquarters of Public Broadcasting Services, L'Enfant Plaza, Washington, D.C., at either 7 p.m. or 8 p.m. on January 13, 1976. Those assigned to the 7 p.m. time slot viewed the interpreted news, while those assigned to the 8 p.m. time slot viewed the captioned news.

### ***THE TREATMENT AND TEST VALIDATION***

The stimulus instrument used in this study was made up of two ¾ inch color video cassettes of the March 28, 1974 ABC Evening News. One cassette was the regular Captioned ABC News broadcast over the PBS network five nights weekly. The other cassette utilized a superimposed sign language interpreter who holds a Comprehensive Skills Certificate from the Registry of Interpreters for the Deaf and who presented the same information as the captions in sign language.

The data collecting instrument (Appendix 6) consisted of 20 multiple choice items based on the news of that evening. The test was validated using 35 multiple choice items (Appendix 7) which were administered to 48 randomly selected incoming students at the National Technical Institute for the Deaf at Rochester, New York.

The students were given the 35 items with a cover sheet (Appendix 7) containing the following instructions which were also given verbally via the simultaneous use of sign language and speech.

Please pretend today is March 29, 1974. Pretend Patricia Hearst has disappeared and pretend that Richard M. Nixon is still President of the United States. The Watergate scandal is in the

news, and the Senate Watergate Committee is very busy. Secretary Kissinger has just returned from Russia, and President Nixon plans to go to Russia in the summer. Remember pretend today is March 28, 1974.

Answer all questions about the news that day. If you do not remember, guess. Circle the best answer for each question.

This is not a time test. Take as much time as you need to answer all the questions.

The pilot test data was analyzed using chi square procedure to determine which questions were answered by chance. Of the 35 items, 14 items showed no significant chi square value at the .05 level. The remaining 21 showed significant chi square values at the 5% confidence level or beyond, indicating that factors other than chance were operating in the selection of answers on each of these 4-choice items.

The 14 items showing chance selection were first selected from the pool of items. The remaining six items selected for the final test were chosen on the basis of (1) relatively low chi square values, and (2) the fact that cumulatively the number of items answered correctly approximated 25% across all subjects participating in the field test of the instrument.

Following the pilot test the subjects were instructed to review each item and indicate whether they had difficulty with the syntax or the vocabulary. Overall, across the 20 items selected from the original 35 and across all 48 subjects, 7 percent of the items were judged to be difficult relative to their language content. The revised instrument used in the experiment is presented in Appendix 6.

## ***THE EXPERIMENTAL DESIGN***

This study utilized a two factorial design. Factor A, educational status, was comprised of two levels with level A<sub>1</sub> representing values derived from the performance of deaf individuals who had graduated from college and level A<sub>2</sub> representing values derived from the performance of deaf individuals who had not continued their education beyond high school or a school for the deaf.

Factor B, mode of presentation, was also comprised of two levels with level B1 representing scores resulting from the presentation of a captioned nationally televised newscast to deaf subjects and level B2 representing scores resulting from the presentation of an interpreted nationally televised newscast to deaf subjects. The newscasts were identical in content (Appendix 11) except for the mode of presentation.

The design can be characterized as a two factor completely non-repeated measures factorial experiment with equal cell sizes and all factors crossed. The design is characterized by Campbell and Stanley (1966) as a static group comparison design. This design has the advantage, for the present study, of eliminating any possibility of practice effect and, in the presence of reasonable procedural controls, minimizing the possibility of a “Westinghouse” or “halo” effect. It does not eliminate the possibility of social preconditioning of subjects in relation to Factor B, but there is no reason to believe any has taken place, and, on a conceptual basis, such contamination would be experimentally acceptable if it did occur.

The principal disadvantage of such designs is that baseline data is not accessible and the study must bear the burden of equivalent base ability assignment of subjects assigned to levels B1 and B2. Since

assignment was completely random, this problem can be considered essentially to have been resolved in the present study.

## ***THE EXPERIMENT***

The actual experiment took place in a large meeting room at the headquarters of Public Broadcasting Services in Washington, D.C. This room could accommodate approximately 75 persons at one time. Six color television monitors hooked to a central video cassette playback were strategically located in the room to simulate home viewing as closely as possible. The arrangement of monitors and seating is indicated in Figure 1.

At the 7 p.m. session, 30 deaf persons who had completed college and 26 deaf persons who had not attended a college appeared for the experiment using the interpreted newscast. In a brief session the participants were given an explanation of what they were to do (Appendix 10). All were then asked to seat themselves in a comfortable position for viewing the program. Following the program, each person was given a copy of the test instrument, along with a cover sheet requesting their personal preference for a captioned televised newscast or an interpreted newscast (Appendix 6). Upon completing the test instrument, each person turned in his test instrument to the principal investigator and left by a rear door for refreshments in another room. This procedure was used to prevent any contact between the two treatment groups.

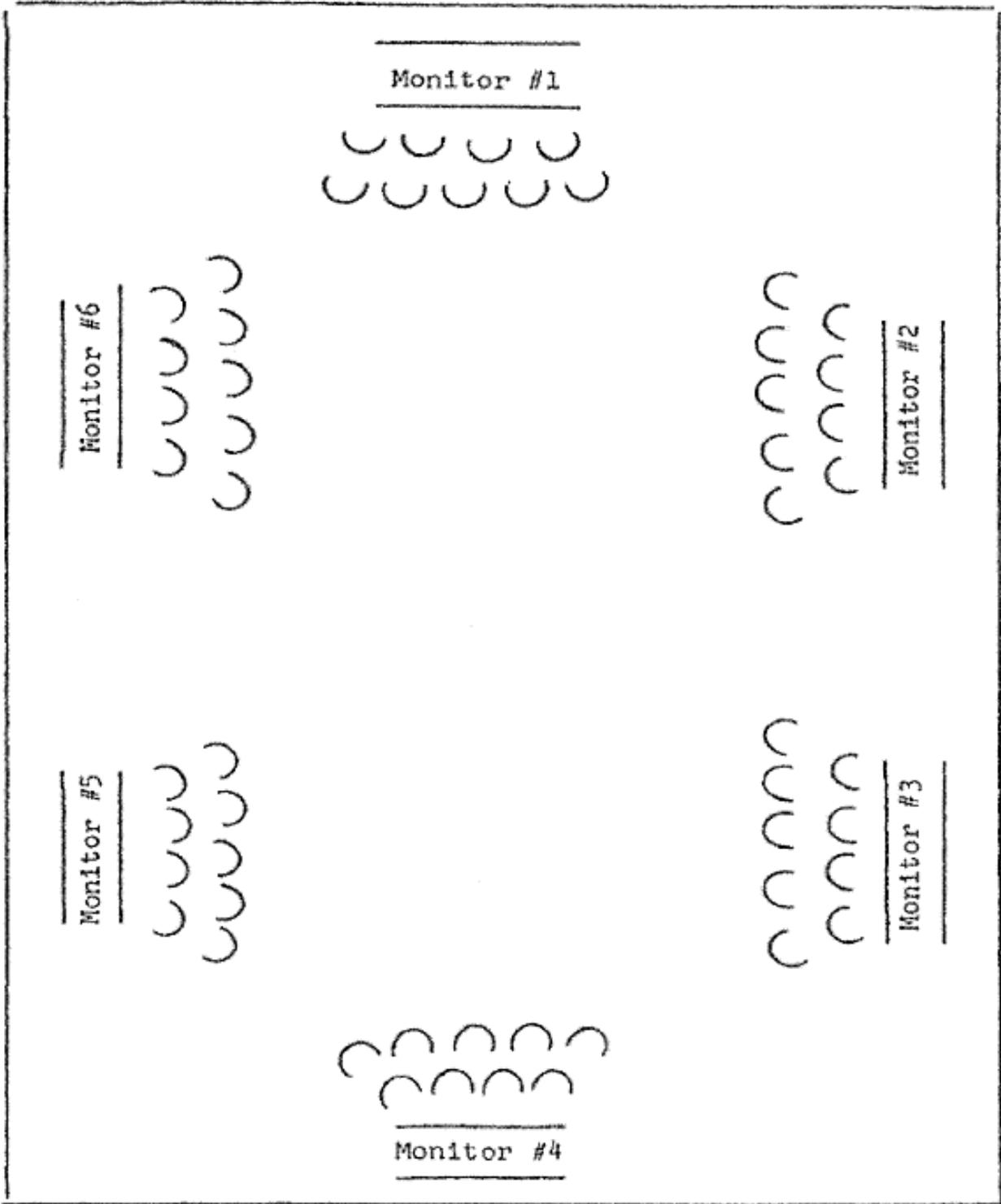


Figure 1. Arrangement of Television Monitors and Seating.

At the 8 p.m. session, 33 deaf persons who had graduated from a college and 27 deaf persons who had not attended a college appeared. The experiment using the captioned newscast was carried out in the same manner as the previous session.

Prior to scoring the test results, the table of random numbers was used once more to eliminate four of the college graduates who participated in the 7 p.m. session and to eliminate six of the college graduates and one of the non-college participants from the 8 p.m. session. This procedure enabled the principal investigator to limit the number of participants in each cell to 26 persons for a total population of 104. The tests were then scored and tabulated. The statistical treatment and findings are described in the following chapter.

## CHAPTER IV: RESULTS

The mean performance of each of the four groups on the 20 item post-test is indicated in Table 1. Also indicated is the standard deviation for each of the four groups.

	Captioned News		Interpreted News		
	Mean	S.D.	Mean	S.D.	Grand Mean
College*	79.23	13.93	62.88	12.49	71.05
Non-College*	48.27	11.55	42.69	14.70	45.48
Grand Mean	63.75		52.78		
*n for each group = 26					

College graduates who viewed the captioned newscast had a mean score of 79.23% correct responses. Those college graduates who viewed the interpreted newscast had a mean score of 62.88% correct responses.

Non-college subjects who viewed the captioned newscast had a mean score of 48.27% correct responses, while non-college subjects who viewed the interpreted newscast had a mean score of 42.69% correct responses.

College and non-college subjects who viewed the captioned newscast had a grand mean of 63.75% correct responses. College and non-college subjects viewing the interpreted newscast had a grand mean score of 52.78% correct responses.

College subjects who viewed the captioned newscast and college subjects who viewed the interpreted newscast had a grand mean score of 71.05% correct responses. Non-college subjects who viewed the interpreted newscast had a grand mean score of 45.48% correct responses.

The two factor by subject analysis of variance procedure (Winer, 1962) utilized to test differences derived from the factors presented above is presented in Table 2 (see p. 33).

As Table 2 illustrates, factor A, effects derived from scores based on differing educational levels, yielded an F ratio of 87.82 which, with 1 and 100 degrees of freedom, is significant at the .01 level of confidence. The college graduates achieved a mean score of 71.05% and the non-college subjects produced a mean score of 45.48% across the two levels of factor B. On the basis of main effects analysis, it can be concluded on a preliminary basis that the performance of college graduates was higher, to a statistically significant degree, than that of the two subject groups comprised on individuals who had not continued their education beyond high school.

**TABLE 2****SUMMARY OF ANALYSIS OF VARIANCE BASED ON TREATMENT AND EDUCATION**

Source	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>	
A. Education (College & non college)	17008.66	1	17008.66	87.82*	
B. Treatment (Captioned & Interpreted)	3124.00	1	3124.00	16.12*	
Interaction	730.77	1	730.77	3.77	
Error	19374.00	100	193.74		

\*Significant at .01 level of confidence

F.01<sup>1,1000</sup> = 6.90

As Table 2 illustrates, the F ratio derived from main effects analysis of factor B, mode of presentation (captioned vs. interpreted), was 16.12, which is significant at the .01 level of confidence with 1 and 100 degrees of freedom. The subject groups exposed to the captioned newscast presentation achieved a mean score of 63.75% and those exposed to interpreted news programming made a mean score of 52.78%. The results, on the preliminary basis of main effects analysis, can be interpreted to indicate that exposure to a captioned newscast results in the transmission of a greater amount of verbal information than does exposure to an interpreted newscast.

The AB interaction effect produced an F ratio of 3.77 which, with specified degrees of freedom, is not significant at traditional levels of confidence. Thus, the results of the main effects analysis do not require simple main effects evaluation, and the tentative results of the main effects analysis can be considered to be final representation of the data.

Thus, the results indicate that deaf individuals who have graduated from college made higher scores on a test of verbal information transmission under both captioned and interpreted conditions than did subjects who had not continued their education beyond high school or a school for the deaf to a statistically significant degree. Further, based on scores of the test instrument, both college graduates and non-college subjects received significantly more verbal information from the captioned presentation of the newscast than college graduates and non-college subjects from the interpreted presentation of the newscast at the .01 level.

## ***RESULTS OF OPINION SURVEY***

Each subject participating in the experiment was asked to express a personal preference for interpreted or captioned newscasts (Appendix 7). Table 3 represents the responses of the 104 subjects, 52 who have completed college and 52 who have not continued their education beyond high school or a school for the deaf.

**TABLE 3****SUMMARY OF PERSONAL PREFERENCE FOR AN INTERPRETED OR CAPTIONED NEWSCAST**

	Prefer Captions	Prefer Interpreters	No Opinion
College	50	2	
Non-College	43	8	1
Total	93	10	1

As indicated in Table 3, the preference for captions as a means of presentation is overwhelmingly in favor of print. Only two of 52 college graduates selected the interpreted mode while 50 of 52 college graduates selected the captioned format, indicating 96% were in favor of captions. The non-college population had 51 responses with one person uncommitted. Of the 51 who responded, 43 expressed a preference for captions and eight expressed a preference for an interpreter, indicating 84% were in favor of captions.

The total responses numbered 103 with 93 college and non-college individuals expressing a preference for captions and 10 college and non-college individuals expressing a preference for an interpreter. The combined responses of the college graduates and the non-college subjects indicate 90% were in favor of captions.

## CHAPTER V: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

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### *SUMMARY*

Motivation for this study was prompted by the search to determine which of the two alternative modes of presentation for providing deaf persons with verbal information via television (and film) is most effective for two different educational levels.

The use of instructional technology and its effectiveness for learning are well documented. There is little research specifically concerned with the problems of the hearing impaired. What little has been done does indicate that instructional technology could increase learning for those who are unable to benefit from the audio portion of the presentation.

Verbal information can be transmitted to deaf persons over television by either captions or sign language. Captions approximate the content of the sound track making it possible for deaf persons to read the narration and/or dialogue. An interpreter, who is an expert in the use of sign language, can systematically present the verbal information given orally by a narrator or by the actors. The question resolved by this study is: Which of the two modes is the most effective?

It was hypothesized that there would be no significant differences in the amount of verbal information deaf persons received from a televised national newscast augmented by captions or augmented by a sign language interpreter.

Two groups of deaf persons were randomly assigned to each treatment. One group consisted of 52 college graduates; the other consisted of 52 persons who had not continued their education beyond high school or a school for the deaf.

A 35-item multiple-choice test based on the news of the day was developed for this study. This was reduced to 20 items by a pilot test. The experimental design was of the post-test only design with two populations, college and non-college, randomly assigned to the two treatments. To test for the significance of differences based on their performance on the 20-item test of immediate recall, a two-factor analysis of variance was conducted. The actual experiment was conducted at the national headquarters of Public Broadcasting Services in Washington, D.C.

At the .01 level of confidence, it was found that: (1) deaf college graduates made higher scores on a test of verbal learning under both captioned and interpreted conditions than did high school graduates, and (2) both college graduates and high school graduates received significantly more verbal information from the captioned newscast than college graduates and high school graduates received from the interpreted newscast.

### *LIMITATIONS OF THE STUDY*

While the treatment varies between interpreted and captioned (or graphic) forms, the test instrument was in print form only. This could contribute to error variance on the basis of the following factors: (1) the groups who received the interpreted form were required to respond to print, and (2) the extent to which English deficiency, particularly among the high school subjects, may influence ability to read test items is unknown.

This study was designed to assess the relative amount of verbal information under two conditions or treatments. Obviously, all the information one receives from television viewing is not restricted to verbal information. This study should not be construed to identify the totality of what a deaf viewer receives (i.e., there is considerable information presented on national news broadcasts that is visual or pictorial). The nonverbal information a deaf person receives was not explored in this study.

While efforts were made to obtain representative deaf subjects, the Washington, D.C. deaf population may not be a true cross-section of the national deaf population. For example, Washington, D.C. has a very high number of professional deaf persons and offers unique cultural opportunities to all deaf persons residing in the metropolitan area. Additionally, because the population sampled resides near the Capital City, this may contribute to knowledge of national and international affairs.

While this study made an effort to separate two populations of deaf people to determine whether there is an interaction between formal educational attainment and the effectiveness of interpreted and captioned news, two limitations in this regard exist. (1) The experimental design treated educational level as a dichotomous variable (i.e., those who completed high school and those who completed college). In fact, educational level can vary from no formal schooling through advanced degrees. Additionally, formal educational experience is at best a gross measure of literacy or educational sophistication. (2) We cannot say that formal education is itself casually related to the dependent variable (verbal information received). Many factors contribute to the level of formal education one reaches (e.g. mental ability, motivation, opportunity, and language skills). It remains for future studies to isolate actual causal factors.

## ***DISCUSSION***

The information gap that separates the hearing impaired from the normal population is extremely great and only in recent years have technological advances made it possible for deaf persons to begin to share in our heavily mediated culture. The use of captions and sign language interpreters are an obvious means of harnessing television and film to increase the flow of information, but there has been no concrete evidence as to which mode would be the most accurate means for transmitting verbal information. It was for this reason that the present investigation was undertaken.

There was clear evidence of the superiority of captions over manual communication. College graduates who viewed the captioned version of the newscast did significantly better than college graduates who viewed the interpreted newscast, but regardless of the mode of presentation, college graduates, collectively, scored higher than those who had not continued their education beyond high school. This is not surprising since college graduates have most likely developed superior language skills and, therefore, are better able to assimilate and decode information more accurately regardless of the method used to transmit verbal information.

The data shows that captions are clearly a superior means of transmitting verbal information, particularly to college graduates. This is important since “real-time” captioning is technologically possible in the foreseeable future. It was surprising to find that the use of manual interpreters with non-college deaf persons produced so little learning. It has long been assumed that this segment of the population would obtain more information from a sign language interpreter than from captions. One explanation for the superiority of captions is that deaf persons do not develop competency in sign language to the same degree as do interpreters and teachers. This may be because sign language has

rarely been taught to deaf children as a language, and most acquire their signs from other deaf children and adults. Consequently, there is a need for educators to re-examine the potential of manual communication as a communication tool.

Another explanation for the superiority of captions is that the information stays on the screen long enough for the viewer to divert his attention to the pictorial information and back to the print (captions) with little risk of missing any information. On the other hand, should the viewer take his eyes away from the interpreter to scan the pictorial information, he will miss whatever information the interpreter conveys during that brief period.

The data obtained from the opinion survey was of great interest since the responses were overwhelmingly in favor of print. The combined responses of both populations indicated 90% are in favor of captions. Only two of the 52 college graduates and eight of the 52 non-college subjects indicated a preference for a sign language interpreter.

## **CONCLUSIONS**

Under the limitations of experimental design, subject sample, and analysis procedure employed, the following conclusions are presented. All deaf persons used in the study were proficient in the reception of sign language.

1. Deaf viewers who have graduated from college and those who have not continued their education beyond high school or a school for the deaf received significantly more verbal information from a captioned televised national newscast than from an interpreted national newscast.
2. Deaf viewers who are college graduates gained significantly more verbal information from a captioned national newscast than from an interpreted national newscast.
3. Deaf viewers who have not continued their education beyond high school or a school for the deaf gained significantly more verbal information received from a captioned national newscast than from an interpreted national newscast.
4. The educational level of deaf persons determines the amount of verbal information learned from a captioned or interpreted national newscast. The greater the educational level, the greater the amount of verbal information received regardless of the mode of presentation, but the greatest amount of information is transmitted by captions.

Consequently, the results of this study support the findings of other researchers that captions facilitate verbal learning among deaf viewers who receive instruction through captioned films. The results are also in agreement with the conclusions of Gates (1970) and Propp (1972) who also included manual communication as variables in their studies which indicated that captioned treatments were superior to other modes of transmitting verbal information. These findings also justify the expenditures of the Federal Government in providing a free-loan service of captioned entertainment and educational films for the deaf, an activity which has been ongoing since 1959. Additionally, the findings justify Federal support of telecommunications projects which include funds to develop a "hidden captions" system utilizing Line 21 of the vertical interval. This system will send a signal that will permit captions to be seen on the screens of television receivers equipped with a special decoder. Deaf persons will then be able to have captioned programs without inconveniencing the normal viewing population which may find subtitles to be distracting.

## ***RECOMMENDATIONS***

1. Studies should be undertaken to replicate this experiment in other geographic areas and with other content
2. Studies should be undertaken which replicate this experiment at other grade levels and with different ethnic and cultural groups.
3. Studies should be undertaken to determine the relationship between ability to sign and ability to read.
4. Studies should be undertaken to replicate this experiment but with instructions and testing done in sign language.
5. Studies should be undertaken to determine where captions should be placed on the screen for ease of reading and maximum communication effect. It is possible that the transmission of verbal information would be further enhanced if captions were moved to different parts of the screen in certain situations.
6. Studies should be undertaken to determine whether captions have potential for developing reading skills for hearing persons.
7. Studies should be undertaken to investigate the effectiveness of captions and lip synchronization as a means of teaching speechreading skills.
8. Studies should be undertaken to determine whether there is a correlation between fingerspelling and handwriting. Ability to fingerspell clearly may make a difference in conveying information.
9. Studies should be undertaken to determine the effectiveness of a person using the total approach (i.e., use of speech, fingerspelling, and sign language simultaneously as a means of conveying verbal information).
10. Studies should be undertaken with younger deaf children to determine the potential of captioned film and television as a means of developing competency in language skills.

## APPENDIX I

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Public Law 85-905  
85<sup>th</sup> Congress H.R. 13678  
September 2, 1958

### AN ACT

To provide in the Department of Health, Education, and Welfare for a loan service of captioned films for the deaf.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, that the objectives of this Act are:

- (1) to bring to deaf persons understanding and appreciation of those films which play such an important part in the general and cultural advancement of hearing persons;
- (2) to provide, through these films, enriched educational and cultural experiences through which deaf persons can be brought into better touch with the realities of their environment; and
- (3) to provide a wholesome and rewarding experience which deaf persons may share together.

Sec. 2. As used in this Act:

- (1) The term "Secretary" means the Secretary of Health, Education, and Welfare.
- (2) The term "United States" means the several States, Territories, insular possessions, and the District of Columbia.
- (3) The term "deaf person" includes a person whose hearing is severely impaired.

Sec. 3. (a) In order to carry out the objectives of this Act, the Secretary shall establish a loan service of captioned films for the purpose of making such films available for nonprofit purposes to groups of deaf persons in the United States in accordance with regulations promulgated by the Secretary.

(b) In carrying out the provisions of the Act, the Secretary shall have authority to--

- (1) Acquire films (or rights thereto) by purchase, lease, or gift.
- (2) Provide for the captioning of films.
- (3) Provide for distribution of captioned films through State schools for the deaf and such other agencies as the Secretary may deem appropriate to serve as local or regional centers for such distribution.
- (4) Make use, consistent with the purposes of this Act, of films made available to the Library of Congress under the copyright laws.
- (5) Utilize the facilities and services of other governmental agencies.
- (6) Accept gifts, contributions, and voluntary and uncompensated services of individuals and organizations.

Sec. 4. There are hereby authorized to be appropriated not to exceed \$250,000 annually to carry out the provisions of this Act.

Approved September 2, 1958.

## APPENDIX 2

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Public Law 87-815  
87<sup>th</sup> Congress, S. 2511  
September 28, 1962

### AN ACT

To provide for the production and distribution of educational and training films for use by deaf persons, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That (a) the first section of the Act entitled “An Act to provide in the Department of Health, Education, and Welfare for a loan service of captioned films for the deaf, “approved September 2, 1958 (72 Stat. 1742), is amended to read as follows:

“That the objectives of this Act are:

- (a) “to promote the general welfare of deaf persons by (1) bringing to such persons understanding and appreciation of those cultural advancement of hearing persons, (2) providing, through these films, enriched educational and cultural experiences through which deaf persons can be brought into better touch with the realities of their environment, and (3) providing a wholesome and rewarding experience which deaf persons may share together; and “(b) to promote the educational advancement of deaf persons by (1) carrying on research in the use of educational and training films for the deaf, (2) producing and distributing educational and training films for the deaf, and (3) training persons in the use of films for the deaf.”
- (b) Paragraphs (4), (5), and (6) of section 3 (b) of such Act are redesignated as paragraphs (5), (6), and (7), respectively, and there is inserted after paragraph (3) the following: “(4) provide for the conduct of research in the use of educational and training films for the deaf, for the production and distribution of training films for the deaf, and for the training of persons in the use of films for the deaf.”
- (c) Section 4 of such Act is amended by striking out “\$250,000” and inserting “in lieu thereof \$1,500,000.”

Approved September 28, 1962.

## APPENDIX 3

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Public Law 89-258  
89<sup>th</sup> Congress, S. 2232  
October 19, 1965

### AN ACT

To amend the Act entitled “An Act to provide in the Department of Health, Education, and Welfare for a loan service of captioned films for the deaf,” approved September 2, 1958, as amended, in order to further provide for a loan service of educational media for the deaf, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Act entitled “An Act to provide in the Department of Health, Education, and Welfare for a loan service of captioned films for the deaf,” approved September 2, 1958, as amended (42 U.S.C. 2491 et seq.) is hereby amended to read as follows:

“That the objectives of this Act are:

- (a) “to promote the general welfare of deaf persons by (1) bringing to such persons understanding and appreciation of those films which play such an important part in the general and cultural advancement of hearing persons, (2) providing through these films enriched educational and cultural experiences through which deaf persons can be brought into better touch with the realities of their environment, and (3) providing a wholesome and rewarding experience which deaf persons may share together; and
- (b) “to promote the educational advancement of deaf persons by (1) carrying on research in the use of educational media for the deaf, (2) producing and distributing educational media for the deaf and for parents of deaf children and other persons who are directly involved in work for the advancement of the deaf or who are actual or potential employers of the deaf, and (3) training persons in the use of educational media for the instruction of the deaf.

Sec. 2. As used in this Act:

- (1) The term “Secretary” means the Secretary of Health, Education, and Welfare.
- (2) The term “United States” means any State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, the Virgin Islands, and American Samoa.
- (3) The term “deaf person” includes a person whose hearing is severely impaired.

Sec. 3.

- (a) In order to carry out the objectives of this Act, the Secretary shall establish a loan service of captioned films and educational media for the purpose of making such materials available in the United States for nonprofit purposes to deaf persons, parents of deaf persons, and other persons directly involved in activities for the advancement of the deaf in accordance with regulations promulgated by the Secretary.
- (b) In carrying out the provisions of this Act, the Secretary shall have authority to:

- (1) Acquire films (or rights thereto) and other educational media by purchase, lease, or gift;
- (2) Acquire by lease or purchase equipment necessary to the administration of this Act;
- (3) Provide for the captioning of films;
- (4) Provide for the distribution of captioned films and other educational media and equipment through State schools for the deaf and such other agencies as the Secretary may deem appropriate to serve as local or regional centers for such distribution;
- (5) Provide for the conduct of research in the use of educational and training films and other educational media for the deaf, for the production and distribution of educational and training of persons in the use of such films and media;
- (6) Utilize the facilities and services of other governmental agencies; and
- (7) Accept gifts, contributions, and voluntary and uncompensated services of individuals and organizations.

Sec. 4. There are hereby authorized to be appropriated not to exceed \$3,000,000 annually for each of the fiscal years 1966 and 1967, \$5,000,000 annually for each of the fiscal years 1968 and 1969, and \$7,000,000 annually for fiscal year 1970 and each succeeding fiscal year thereafter.

Approved October 19, 1965.

## APPENDIX 4

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Public Law 90-247

January 2, 1968

### Expansion of Instructional Media Programs to Include All Handicapped Children

Sec.155.

- (a) Subsection (b) of the first section of the Act entitled "An Act to provide in the Department of Health, Education, and Welfare for a loan service of captioned films for the deaf" (42 U.S.C. 2491 et seq.), is amended to read as follows in order to conform its statement of objectives to amendments made to such Act by Public Law 90-258 and by this Act:
- (b) "to promote the educational advancement of handicapped persons by (1) carrying on research in the use of educational media for the handicapped, (2) producing and distributing educational media for the use of handicapped persons, their parents, their actual or potential employers, and other persons directly involved in work for the advancement of the handicapped, and (3) training persons in the use of educational media for the instruction of the handicapped."
- (b) Section 2 of such Act is amended by adding the following at the end thereof:
- "(4) The term "handicapped" means deaf, mentally retarded, speech impaired, visually handicapped, seriously emotionally disturbed, crippled, or other health impaired persons."
- (c) Section 3 of such Act is amended by striking out the word "deaf" and inserting in lieu thereof "handicapped" each time it occurs therein.
- (d) (1) Subsection (b) (5) of section 3 of such Act is amended by inserting immediately before the semicolon at the end thereof the following: ", including the payment to those persons of such stipends (including allowances for travel and other expenses of such persons and their dependents) as he may determine, which shall be consistent with prevailing practices under comparable federally supported programs."
- (2) This subsection shall take effect on the date of enactment of this Act, except that as to payments made pursuant to such section 3 prior to such date this subsection shall be effective as of September 28, 1962.
- (e) Section 4 of such Act is amended by striking out "\$5,000,000" and inserting "\$8,000,000" in lieu thereof and by striking out "\$7,000,000" and inserting "\$10,000,000" in lieu thereof.

## APPENDIX 5

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Public Law 91-61  
91<sup>st</sup> Congress, S. 1611  
August 20, 1969

### AN ACT

To amend Public Law 85-905 to provide for a National Center on Educational Media and Materials for the handicapped, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Act of September 2, 1958 (Public Law 85-905) is amended—

(1) in section 3, by adding at the end thereof the following new subsection:

(c) (1) “The Secretary is authorized to enter into an agreement with an institution of higher education for the establishment and operation (including construction) of a National Center on Educational Media and Materials for the Handicapped, which will provide a comprehensive program of activities to facilitate the use of new educational technology in education programs for handicapped persons, including designing and developing, and adapting instructional materials, and such other activities consistent with the purposes of this Act as the Secretary may prescribe in the agreement. Such agreement shall:

(A) “Provide that Federal funds paid to the Center will be used solely for such purposes as are set forth in the agreement;

(B) “Authorize the Center, subject to the Secretary’s prior approval, to contract with public and private agencies and organizations for demonstration projects;

(C) “Provide for an annual report on the activities of the Center which will be transmitted to the Congress:

(D) “Provide that any laborer or mechanic employed by any contractor or subcontractor in performance of work on any construction aided by Federal funds under this subsection will be paid wages at rates not less than those prevailing on similar construction in the locality as determined by the Secretary of Labor in accordance with the Davis-Bacon Act (40 U.S.C. 276a-276a-5); and the Secretary of Labor shall have, with respect to the labor standards specified in this clause, the authority and functions set forth in Reorganization Plan Numbered 14 of 1950 (15 F.R. 3176; 5 U.S.C. 133z-15) and section 2 of the Act of June 13, 1934 (40 U.S.C. 276c).

(2) “In considering proposals from institutions of higher education to enter into an agreement under this subsection, the Secretary shall give preference to institutions--

- (A) “which have demonstrated the capabilities necessary for the development and evaluation of educational media for the handicapped; and
  - (B) “which can serve the educational technology needs of the Model High School for the Deaf (established under Public Law 89-694).
- (3) “If within twenty years after the completion of any construction (except minor remodeling or alteration) for which such funds have been paid—
- (A) “the facility ceases to be used for the purposes for which it was constructed or the agreement is terminated, unless the Secretary determines that there is good cause for releasing the institution from its obligation, or
  - (B) “the institution ceases to be the owner of the facility, the United States shall be entitled to recover from the applicant or other owner of the facility an amount which bears to the then value of the facility the same ratio as the amount of such Federal funds bore to the cost of the facility financed with the aid of such funds. Such value shall be determined by agreement of the parties or by action brought in the United States district court in which the facility is situated;
- (2) in section 2, by adding at the end thereof the following:
- (5) “The term ‘construction’ means the construction and initial equipment of new buildings, including architect’s fees, but excluding the acquisition of land,” and
- (3) in section 4 by striking out “and” after “1969,” and by striking out “1970” and all that follows and inserting in lieu thereof the following: “1970, \$12,500,000 for the fiscal year ending June 30, 1971, \$15,000,000 for the fiscal year ending June 30, 1972, and \$20,000,000 for the fiscal year ending June 30, 1973, and for each succeeding fiscal year.”

Approved August 20, 1969.

## APPENDIX 6

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### DATA COLLECTING INSTRUMENT WITH OPINION SURVEY QUESTIONS

Please check the statement which best expresses your opinion.

1. I prefer news programs be captioned. \_\_\_\_\_

2. I prefer news programs be interpreted. \_\_\_\_\_

---

NAME

1. Kissinger returned with Soviet nuclear proposals that were termed \_\_\_\_\_.
  - a. reasonable
  - b. negotiable
  - c. acceptable
  - d. unacceptable
  
2. As a result of the talks Secretary Schlesinger said the U.S. \_\_\_\_\_.
  - a. could relax its weapons policy
  - b. could limit its missiles
  - c. could cooperate with the Soviet Military
  - d. none of the above
  
3. Common Cause is \_\_\_\_\_.
  - a. a special Congressional appointed committee
  - b. a special interest organization
  - c. a citizen's group
  - d. none of the above
  
4. Since the Watergate scandals, Special Interest Contributions have \_\_\_\_\_.
  - a. decreased greatly
  - b. remained about the same
  - c. increased slightly
  - d. been greater than ever
  
5. The largest contributions to Congressmen came from \_\_\_\_\_.
  - a. Dairy Co-ops
  - b. Organized labor
  - c. Party solicitations
  - d. Business groups
  
6. Kissinger and Brezhnev talked about the problems of \_\_\_\_\_.
  - a. Cyprus
  - b. Israel
  - c. Nuclear weapons
  - d. Energy
  
7. A British newsman was shot by Princess Anne's attacker when he \_\_\_\_\_.
  - a. tried to protect the Princess
  - b. ran behind a tree
  - c. ran behind a car
  - d. asked for the gun
  
8. The newsman \_\_\_\_\_.
  - a. got a good look at the man
  - b. will not be able to identify him in court
  - c. saw a second gunman
  - d. captured the gunman

9. Most of the Senate \_\_\_\_\_ public financing of election campaigns
- a. does not want
  - b. wants
  - c. filibuster against
  - d. has
10. Israeli Defense Minister Dyan said there will be no separation of forces on the Golan Heights until \_\_\_\_\_.
- a. a victory is had
  - b. the prisoners are returned
  - c. Kissinger negotiates a cease fire
  - d. the U.N. intervenes
11. Randolph Hearst will give \$4 million more for food for the poor when \_\_\_\_\_.
- a. Patty's kidnapper surrenders
  - b. Patty is shown to be alive
  - c. Patty is freed
  - d. all of the above
12. Senators Baker and Tower \_\_\_\_\_.
- a. support the campaign reform bill
  - b. are against the bill
  - c. introduced the bill
  - d. authored the bill
13. At the Republican Campaign dinner the Vice-President \_\_\_\_\_.
- a. gave Nixon a long introduction
  - b. talked less than ten minutes
  - c. talked more than ten minutes
  - d. criticized Nixon
14. The minimum wage bill will cover \_\_\_\_\_ million more people by 1976.
- a. four
  - b. five
  - c. six
  - d. seven
15. The minimum wage bill will increase wages to \_\_\_\_\_ an hour.
- a. \$2.20
  - b. \$2.30
  - c. \$2.40
  - d. \$2.50

16. Howard K. Smith claims Congress is \_\_\_\_\_ by the public.
- a. not respected
  - b. respected
  - c. supported
  - d. sanctified
17. \_\_\_\_\_ leads the list of who received the most from special interest campaign contributions.
- a. Senator Tower
  - b. Representative Abourezh
  - c. Senator Baker
  - d. Representative Hays
18. \_\_\_\_\_ does not like Kissinger's nuclear weapons proposal.
- a. The Soviet Military
  - b. Congress
  - c. Soviet Leader Brezhnev
  - d. NATO
19. Republicans paid \_\_\_\_\_ each to attend a money-making dinner last night.
- a. \$1,200
  - b. \$1,000
  - c. \$500
  - d. \$100
20. Admiral \_\_\_\_\_ will retire as Chief of Naval Operations in June.
- a. Zumwalt
  - b. Holloway
  - c. McConnell
  - d. Zimmerman

## APPENDIX 7

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### ORIGINAL TEST ITEMS WITH INSTRUCTIONS

Please pretend today is March 28, 1974. Pretend Patricia Hearst has disappeared and pretend that Richard M. Nixon is still President of the United States. The Watergate scandal is in the news, and the Senate Watergate Committee is very busy. Secretary Kissinger has just returned from Russia, and President Nixon plans to go to Russia in the summer. Remember, pretend today is March 28, 1974.

Answer all questions about the news that day. If you do not remember, guess. Circle the best answer for each question.

Example:

Secretary Kissinger hopes to return to Moscow in \_\_\_\_\_.

- a. July
- b. May
- c. September
- d. three months

THIS IS NOT A TIME TEST.

TAKE AS MUCH TIME AS YOU NEED TO ANSWER ALL THE QUESTIONS.

1. Kissinger returned with Soviet nuclear proposals that were termed \_\_\_\_\_.
  - a. reasonable
  - b. negotiable
  - c. acceptable
  - d. unacceptable
  
2. A U.S. official said Kissinger's talks in Moscow on limiting nuclear weapons had \_\_\_\_\_.
  - a. achieved a breakthrough
  - b. shown a final agreement is very possible
  - c. support of the U.S. Military
  - d. resulted in no solution
  
3. As a result of the talks Secretary Schlesinger said the U.S. \_\_\_\_\_.
  - a. could relax its weapons policy
  - b. could limit its missiles
  - c. could cooperate with the Soviet Military
  - d. none of the above
  
4. Common Cause is \_\_\_\_\_.
  - a. a special Congressional appointed committee
  - b. a special interest organization
  - c. a citizen's group
  - d. none of the above
  
5. An approved Senate amendment states Special Interest groups can give national candidates \_\_\_\_\_.
  - a. \$3,000
  - b. \$6,000
  - c. \$10,000
  - d. \$25,000
  
6. Since Watergate scandals, Special Interest Contributions have \_\_\_\_\_.
  - a. decreased greatly
  - b. remained about the same
  - c. increased slightly
  - d. been greater than ever
  
7. Gromyko and Kissinger will meet in \_\_\_\_\_.
  - a. Paris
  - b. London
  - c. Washington
  - d. Moscow

8. The largest contributions to Congressmen came from \_\_\_\_\_.  
a. Dairy Co-ops  
b. Organized labor  
c. Party solicitations  
d. Business groups
9. An impeachment trial would be conducted by the \_\_\_\_\_.  
a. House  
b. House Judiciary Committee  
c. Senate  
d. Senate Judiciary Committee
10. A vote to impeach Nixon would come from the \_\_\_\_\_.  
a. House  
b. Judiciary Committee  
c. Supreme Court  
d. Senate
11. Symbionese Liberation Army members in jail sent out a letter made public through \_\_\_\_\_.  
a. television  
b. radio  
c. newspapers  
d. all the above
12. Kissinger and Brezhnev talked about the problems of \_\_\_\_\_.  
a. Cyprus  
b. Israel  
c. Nuclear weapons  
d. energy
13. Nixon was expected to \_\_\_\_\_ the minimum wage bill.  
a. sign  
b. veto  
c. table  
d. amend
14. A British newsman was shot by Princess Anne's attacker when he \_\_\_\_\_.  
a. tried to protect the Princess  
b. ran behind a tree  
c. ran behind a car  
d. asked for the gun
15. The newsman \_\_\_\_\_.  
a. got a good look at the man  
b. will not be able to identify him in court  
c. saw a second gunman  
d. captured the gunman

16. Most of the Senate \_\_\_\_\_ public financing of election campaigns
- does not want
  - wants
  - filibuster against
  - has
17. Representative Hays has shown that he will \_\_\_\_\_ the public financing bill.
- kill
  - support
  - amend
  - table
18. There was fighting between Israeli troops and \_\_\_\_\_.
- Palestinians
  - Arab Armies
  - Syrian soldiers
  - Egyptian soldiers
19. The number of dead on the Israeli side was \_\_\_\_\_.
- five
  - fifteen
  - one
  - two
20. Israeli Defense Minister Dyan said there will be no separation of forces on the Golan Heights until \_\_\_\_\_.
- a victory is had
  - the prisoners are returned
  - Kissinger negotiates a cease fire
  - the U.N. intervenes
21. Randolph Hearst will give \$4 million more for food for the poor when \_\_\_\_\_.
- Patty's kidnapper surrender
  - Patty is shown to be alive
  - Patty is freed
  - all of the above
22. Senators Baker and Tower \_\_\_\_\_.
- support the campaign reform bill
  - are against the bill
  - introduced the bill
  - authored the bill

23. At the Republican Campaign dinner the Vice-President \_\_\_\_\_.
- a. gave Nixon a long introduction
  - b. talked less than ten minutes
  - c. talked more than 10 minutes
  - d. criticized Nixon
24. The minimum wage bill will cover \_\_\_\_\_ million more people by 1976.
- a. four
  - b. five
  - c. six
  - d. seven
25. The minimum wage bill will increase wages to \_\_\_\_\_ an hour.
- a. \$2.20
  - b. \$2.30
  - c. \$2.40
  - d. \$2.50
26. Queen Victoria was attacked by would be assassins \_\_\_\_\_ times.
- a. four
  - b. ten
  - c. seven
  - d. twelve
27. Howard K. Smith claims Congress is \_\_\_\_\_ by the public.
- a. not respected
  - b. respected
  - c. supported
  - d. sanctified
28. \_\_\_\_\_ leads the list of who received the most from special interest campaign contributions.
- a. Senator Tower
  - b. Representative Abourezh
  - c. Senator Baker
  - d. Representative Hays
29. At the Republican dinner \_\_\_\_\_.
- a. attendance was low
  - b. profits were down
  - c. all Republican governors stayed away
  - d. All of the above
30. \_\_\_\_\_ does not like Kissinger's nuclear weapons proposal.
- a. The Soviet Military
  - b. Congress
  - c. Soviet Leader Brezhnev
  - d. NATO

31. Republicans paid \_\_\_\_\_ each to attend a money-making dinner last night.
- a. \$1,200
  - b. \$1,000
  - c. \$500
  - d. \$100
32. Admiral \_\_\_\_\_ will retire as Chief of Naval Operations in June.
- a. Zumwalt
  - b. Holloway
  - c. McConnell
  - d. Zimmerman
33. Ian Ball is being held for an attack on \_\_\_\_\_.
- a. Queen Elizabeth
  - b. Prince Charles
  - c. the Duke of Edinburgh
  - d. Princess Ann
34. \_\_\_\_\_ admitted that Russia could have a strategic advance over the U.S.
- a. Admiral Holloway
  - b. Secretary Kissinger
  - c. Secretary Schlessinger
  - d. Israeli Defense Minister Mose Dyan
35. \_\_\_\_\_ continues to work for strong campaign reform.
- a. Common Cause
  - b. The Senate
  - c. Congressman Rodino
  - d. Congress

## APPENDIX 8

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### LETTER AND QUESTIONNAIRE SENT TO PROSPECTIVE PARTICIPANTS

Malcolm J. Norwood  
8307 Donoghue Dr.  
New Carrollton, MD 20784

Dear

I am doing a study that involves the use of Sign Language (Interpreting) and Captions on Television. You were selected as one of the 100 deaf persons being asked to take part in a demonstration using either captions or an interpreter.

This demonstration will most likely be held some weekday evening using the facilities at Public Broadcasting Services, 485 L'Enfant Plaza West, S.W., Washington, D.C. 20024. Parking and refreshments will be provided.

Your willingness to take part in this demonstration will be very much appreciated as the results of this study are very important to all deaf persons.

Will you please answer the questions on the attached sheet and return this to me in the self-addressed stamped envelope before December 5, 1975? I will tell you when the demonstration is to take place.

Thank you,

Malcolm J. Norwood

PLEASE RETURN THIS IN THE SELF ADDRESSED  
ENVELOPE BEFORE DECEMBER 5, 1975

I will take part in the demonstration:	YES	NO	
My knowledge of Sign Language is:	EXCELLENT	FAIR	POOR
I have taken courses in a college:	YES	NO	
I have graduated from a college:	YES	NO	
Do you have a TTY?	YES	NO	

NUMBER

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NAME

## APPENDIX 9

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LETTER ANNOUNCING DATE,  
TIME AND LOCATION OF EXPERIMENT

8307 Donoghue Drive  
New Carrollton, Maryland 20784

Dear

The TV Demonstration to compare interpreting (Sign Language) vs. captions will be held on Tuesday evening January 13, 1976 at p.m.

Indoor parking and refreshments will be provided for all of you.

The demonstration will be held at Public Broadcasting Services (PBS) at 475 L'Enfant Plaza West, S.W., in Washington, D.C. The enclosed map will show you where the parking entrance is located.

If you have any questions please call me on the TTY. During the day I can be reached at my office between 9:00 a.m. and 4:00 p.m. The TTY or voice number is 245-9606 or 245-2353. I can be reached at home after 6:00 p.m. The TTY number is 552-3560.

PLEASE COME. The information we will get from this study is very important to all deaf persons.

Thank you for your cooperation. I am looking forward to seeing you on January 13.

Sincerely yours,

Malcolm J. Norwood

## APPENDIX 10

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### INSTRUCTIONS GIVEN TO PARTICIPANTS

Thank you for coming here this evening. As you can see there are six television sets in this room. In a few minutes you will see (an interpreted) (a captioned) news program that gives the news for March 28, 1974. Richard Nixon is still President of the United States and the Watergate scandal is still big news.

After you have seen the program, you will be given a multiple-choice questionnaire based on the news of March 28, 1974. Circle the best answer for each question. Please answer all questions, and if you do not remember the answer, guess.

You will also be asked a question about interpreted and captioned newscasts. Please check your preference.

Take as much time as you need to answer all questions. When you have finished, please return your questionnaire to me and leave by the rear door. There are some refreshments waiting for you.

If there are no questions please seat yourselves in small groups of no more than 9 persons at each television set. Be sure that you are as comfortable as you would be at home watching your own television set. As soon as everyone is comfortably seated, we will start the program.

Thank you again for coming tonight. Your cooperation is very much appreciated.

# APPENDIX 11

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## SCRIPT OF NEWS PROGRAM

### SCRIPT

#### ABC CAPTIONED NEWS

Good evening. I'm Howard K. Smith

Harry Reasoner is on assignment.

Here are the headlines.

Kissinger returns with unacceptable Soviet nuclear proposals.

Randolph Hearst adds \$4 million to meet the demands of his daughter's kidnappers.

Assistant Senate leader says impeachment possibilities have increased.

Congress passes a minimum wage bill.

We have a comment on why congress is not respected.

Kissinger and Soviet Leader Brezhnev talked about how to limit nuclear weapons.

No solutions have been found yet.

A U.S. Official said that Secretary Kissinger had not found a solution to the problem of limiting nuclear weapons.

The official said that the Soviet proposal is not acceptable to the U.S.

It is almost impossible that a fiscal weapons agreement can be made when Nixon visits Russia this summer.

There will be more talks in the next 3 months to try to agree on nuclear warheads.

Soviet Foreign Minister Gromyko will meet with Secretary Kissinger next month in Washington.

Kissinger hopes to return to Moscow in May

It is very difficult to make an agreement

They fear the U.S. will stay more powerful with certain weapons.

The U.S. military does not like the Soviet proposal.

Kissinger spoke at a news conference this afternoon.

We made some progress.

You have to let some time pass.

It is much too early to make a judgment.

When President Nixon arrives in Moscow this summer there probably will not be an agreement yet.

Secretary James Schlesinger aid

We should not worry that the U.S.

Might relax its weapons policy to make an agreement

Anybody who knows President Nixon

Knows that he would not do anything to hurt the national security.

Schlesinger said it is hard to know what is happening in the Soviet Union.

He knows that missile tests

Have been very successful.

He admits that Russia could have a strategic advantage over the U.S.

We recognize that they might want to put some of their new weapons in place.

But the current balance should not be changed.

We shall match them.

Schlesinger said there could be a new missile race with Russia

If there is no weapons agreement

To avoid that Schlesinger advised Moscow to limit its missiles.  
Secretary Kissinger will meet with Israeli Defense Minister,  
Mose Dayan.  
Dayan has a plan for Israeli-Syrian Troop separation.  
There was more fighting in the Golan Heights today, Jerry King reports.  
Everyday Israelis and Syrians fight.  
One Israeli soldier was killed and two were hurt in this shooting yesterday.  
Israel has complained to the U.N. about the Syrians' shooting.  
Defense Minister Dayan will discuss this and other things with Kissinger.  
The Israelis are thinking of their soldiers held by Syria.  
Dayan said there will be no separation of forces in the  
Golan until those prisoners are returned.  
The shooting continued in the Golan  
There is always the chance it can become war.  
Randolph Hearst said he is guaranteeing \$4 million more for  
Food for the poor when his daughter is freed.  
There will be \$4 million more for free food when Patricia is freed.  
When will Mr. Hearst hear from the kidnappers?  
I think when the agreement to put aside the money is finished.  
If we do not hear from them after that  
I would be very fearful that Patty was dead.  
But I think I will hear from them.  
A radio station in California got a letter from SLA members now in jail.  
They were not allowed to go on TV  
Their letter was read on the radio  
TAPES: Patty, we have tried to help you get free—by telling  
the public about the FBI, etc. We think the SLA will free  
you safely  
Later you may think this was a worthwhile experience because  
the cruelty of those ruling the U.S. was shown.  
The last of the free food was given away today.  
Hearst thinks the food will meet the demands of the kidnappers.  
\$4 million more will be available  
when Patricia is freed.  
The Senate Watergate Committee has been trying to get 5  
White House tape recordings.  
Today the Justice Dept. suggested that a U.S. Appeals Court  
reject the Committee's request.  
The House Judiciary Committee has those tapes.  
Chairman Rodino and Edward Hutchinson who is the committee's  
Senior Republican spent a second morning listening to White  
House tapes.  
They would not say what they had heard.  
Do you still feel that you have seen nothing that suggests  
that Nixon should be impeached?  
Yes  
You have heard nothing to make you think there may be a  
case here?

No, not yet.  
Hutchinson said he has not heard all the tapes.  
What about the 42 taped conversations  
that the White House says do not exist?  
If they say they do not exist  
we have no way to find them.  
But we believe the conversations took place.  
I do not know if there are tapes.  
House Republican leader John Rhodes thinks the White House  
will give those tapes to the committee under an agreement  
that White House Lawyers and Committee lawyers decide which  
parts are important.  
Rhodes is willing to bet \$10 that he is right.  
If the House does vote to impeach Nixon the trial would  
take place in the Senate  
Today the assistant Senate Republican leader said that it  
could happen.  
After Senator Buckley's statement and the trouble between  
the White House and the House Judiciary committee there is  
more chance that there could be an impeachment trial in the  
Senate.  
Do you expect an impeachment trial?  
I do not know how to answer.  
A few months ago I would not have thought so.  
Now, it might happen.  
There is more of a chance that the House could vote impeachment.  
The Senate approved an amendment  
to a campaign spending reform bill.  
It raises the amount a special interest group can give to  
a national candidate from \$3,000 to \$6,000.  
Common Cause the citizen's group  
continued to work for strong campaign reform.  
The 3-volume study shows Watergate has not scared special  
interest groups.  
Smaller gifts seem to have ended but Common Cause says the  
special interest money for the next election is more than ever—

more than \$14 million.

The amounts collected are:

Business groups -- \$6 million

Organized labor -- \$5 million

Dairy Co-ops -- \$2 million

These figures show that the Watergate scandals have not  
stopped special interest givers.

Special interest groups will give much more to 1974 Congressional races than 1972

The list of who got what from whom in 1972 is led by Sen.

Baker who is against the reform bill.

Senator Tower of Texas is also against reform

and gets most of his money from corporations.  
Tower was asked if Common Cause's figures are right.  
I cannot say for sure.  
I think it might be a little low.  
But it's certainly nothing to apologize for.  
People who are interested in certain things  
give money to Congressmen who agree.  
Dem. James Abourezk of South Dakota  
who wants reform is #6 on the list.  
Milk producers, labor and corporations have  
given him money.  
At this time of the year political parties  
have money making dinners to support their fall  
congressional campaigns.  
Last night it was the Republicans' turn.  
Some 1,200 Republicans danced to a society band.  
They paid \$1,000 each.  
The attendance was low and the profit was \$200,000 below  
last year.  
All 18 Republican governors stayed away.  
The Vice-President did not give Nixon as much "introduction"  
as he had expected.  
I would like to say about 2 sentences.  
I am honored to introduce a great friend, an outstanding  
President.  
You were supposed to talk 10 minutes!  
I told them I would not.  
I thought you would talk 10 minutes.  
I have seen predictions that Republicans may not do well  
this fall.  
This year it will be different.  
We'll win in the fall.  
No one talked about Nixon's helping in the fall campaign.  
7 of 11 Senate Republicans who are campaigning do not want  
his help.  
ABC's Bob Clark asked Sen. Packwood if Nixon's  
campaigning could hurt him.  
Yes, he would.  
If people do not like what you thought about a subject,  
they'll vote against you.  
The President would be bad for me.  
Some people would vote for me because of him.  
Many more would vote against me because of him.  
Nixon says his record will not hurt Republicans.  
Some Republicans are not convinced.  
G. Bradford Cook is the former Chairman of the  
Securities and Exchange Commission.  
Today he said he lied in court to

support false testimony of Maurice Stans.  
Cook said he was told that Stans had already lied.  
Stans told Cook the testimony was about a \$200,000 secret gift.  
Stans and John Mitchell are on trial for trying to block a study of that gift.  
Congress approved a minimum wage bill.  
Nixon is expected to sign it soon.  
This will increase wages to a minimum of \$2.330 an hour by 1976—and covers 7 million more people  
Nixon nominated Admiral Holloway as Chief of Naval Operations to succeed  
Admiral Zumwalt who will retire in June.  
Ian Ball is being held for the attack on Princess Anne.  
Ball's lawyer said that Ball is mentally ill, a British newsman was hurt in the attack.  
He held an interview for American TV British journalist, Brian McConnell, saw the attack.  
I looked over the hood of the car.  
I could see one man standing by the side of the limousine.  
Its hard to say what I was thinking.  
I thought he had something to do with the shooting.  
If I went closer, he could see me well.  
So I ran near the trees.  
Then I went behind the car.  
I saw that he had a gun and I said:  
    Now come on. Give me that.  
He said: Go away. Keep away.  
I was about 12 feet from him.  
He did not say anything else—he just shot at me.  
I got a good look at that man.  
I will be able to identify him in court.  
Do you believe he was working alone?  
He was the only person I saw.  
I did not see anybody else.  
It is a strange coincidence that you wrote a book on assassinations.  
Has this ever happened before in history?  
Yes, many times.  
Queen Victoria was attacked more than anybody else.  
I told Princess Anne that Queen Victoria was attacked 6 times.  
She said I was wrong.  
She said it happened 7 times.  
So I have to accept the royal correction.  
Stock prices fell sharply today.

Dow Jones Industrials down 16.82  
Standard & Poor's Index: down 1.77  
American Exchange: down 1.18  
Tonight's comment next.  
The fight to reform our corrupting way of  
financing election campaigns  
shows why the public does not respect congress.  
Most of the Senate wants public financing to stop  
special interest groups  
from "buying" politicians.  
But Senator Allen of Alabama will filibuster  
to stop what the majority wants.  
It's clear why Americans do not respect  
the U.S. Senate that allows this.  
Public financing could meet anti-democracy in the House, too.  
Rep. Wayne Hays of Ohio has great power  
that congress gives to Committee chairmen.  
He has shown he will kill the public financing bill.  
Thus congress stops real reform.  
It destroys the promise we made in 1776 of  
equal votes and majority rule.  
Congress has made itself into a private club  
which is not sensitive to the national needs.  
So the public is right not to respect it.  
I'm Howard K. Smith.  
Good night.

## BIBLIOGRAPHY

---

- Allen, W. H. Audio-visual communication. In C.W. Harris (Ed.), Encyclopedia of Educational Research. New York: The Macmillan Company, 1960.
- Bellugi, U. The Language of Signs and the Signs of Language. Paper presented at the Third Annual Michigan Conference on Applied Linguistics. Ann Arbor, Michigan, January 30, 1971.
- Boyd, J., & Vader, E. A. Captioned television for the deaf. American Annals of the Deaf, 1972, 117, 34–37.
- Brill, R. G. Administrative and Professional Developments in the Education of the Deaf. Washington, D.C.: Gallaudet College Press, 1971.
- Connor, L. E. That the Deaf May Hear and Speak. The Volta Review, 1972, 74 (9).
- Chu, G. C., & Schramm, W. Learning from television: What the research says. Stanford: Stanford University Press, 1967.
- Davila, R. Effect of changes in visual information patterns on student achievement using a captioned film and specially adapted still pictures. Unpublished doctoral dissertation, Syracuse University, 1972.
- Denton, D. A rationale for total communication. Psycholinguistics and Total Communication: The State of the Art. (Ed. T. O'Rourke). Washington, D.C.: American Annals of the Deaf, 1972.
- Fischer, D.C. Improvement in the Utilization of Captioned Films for the Deaf. Unpublished doctoral dissertation, University of Nebraska, 1971.
- Freebairn, T. Unpublished survey conducted by New York deafness and training center for WXXI-TV, Rochester, New York, 1972.
- Freebairn, T. Television for Deaf People. New York: New York University, Deafness Research and Training Center, 1974.
- Gates, R. The Reception of Verbal Information by Deaf Students Through a Television Medium—A Comparison of Speechreading, Manual Communication, and Reading. Proceedings of the Convention of American Instructors of the Deaf, Little Rock, Arkansas, 1971, 513–522.
- Hoban, C. F., & VanOrmer, E. G. Instructional film research 1918-1950. State College, Pa.: The Pennsylvania State College, Instructional Film Research Program, 1950.
- Hoemann, H., & Tweney, R. Is Sign Language of the Deaf an Adequate Communication Channel? Proceedings of the Convention of American Psychological Association [Montreal], 1973, 2, 801.
- Huff, K. F. Introduction. Interpreting for deaf people. Washington, D.C.: U.S. Department of Health, Education and Welfare, Vocational Rehabilitation Administration, 1965.

- Klima, E. S., & Bellugi, U. The signs of language in child and chimpanzee. In T. Alloway, L. Krames, and P. Plener (Eds.), Communication and Affect: A Comparative Approach. New York: Academic Press, 1972.
- Klopping, H. Language Understanding of Deaf Students Under Three Auditory-visual Stimulus Conditions. Unpublished doctoral dissertation, University of Arizona, 1971.
- Meadow, K. Early Manual Communication in Relation to the Deaf Child's Intellectual, Social and Communicative Functioning. American Annals of the Deaf, 1968, 113, 299–309.
- Moore, D.F. Communication: Some Unanswered Questions and Some Unquestioned Answers. In T. O'Rourke (Ed.), Psycholinguistics and Total Communication: The State of the Art. Washington, D.C.: American Annals of the Deaf, 1972.
- Nix, G. W. The Effect of Synchronized Captioning on the Assimilation of Vocabulary and Concepts Presented in a Film to Intermediate Level Deaf Children. Unpublished doctoral dissertation, University of Oregon, 1971.
- Nomeland, R. E. The Effects of Inserts and Captions on Learning With Deaf Subjects Using Motion and Still Pictures. Unpublished doctoral dissertation, Syracuse University, 1973.
- Norwood, M. J. Television, instructional media and learning. Paper presented at The VII World Federation of the Deaf, Washington, D.C., August 4–8, 1975.
- Norwood, M. J. Keynote address. In R. Perkins (Ed.), Proceedings of the First National Conference on Television for the Hearing Impaired. Knoxville, Tennessee, Dec. 14–16, 1971 ERIC ED-064-828.
- Owsley, P., & Mecham, S. R. Total Communication, a Placebo. The Mystic Mariner, January 1971.
- Propp, G. An Experimental Study on the Encoding of Verbal Information for Visual Transmission to the Hearing Impaired Learner. Unpublished doctoral dissertation, University of Nebraska, 1972.
- Quigley, S., & Frisina, R. Institutionalization and Psycho-educational Development in Deaf Children. Washington, D. C.: Council for Exceptional children Research Monograph, 1961.
- Schein, J. D., & Delk, M. T. The Deaf Population of the United States. Silver Spring, Md.: National Association of the Deaf, 1974.
- Schlesinger, H.S., & Meadow, K. P. Sound and Sign: Childhood Deafness and Mental Health. Berkeley: University of California Press, 1972.
- Shroyer, E. A Comparative Analysis of the Readability and Reading Rates of Captioned Films With Comprehensive Levels and Reading Rates of Deaf Students. Unpublished doctoral dissertation, University of Pittsburgh, 1973.
- Smith, R. Proceedings of the First National Conference on Television for the Hearing Impaired, R. Perkins (Ed.). Knoxville, Tennessee, Dec. 14–16, 1971. ERIC ED-064- 828.

- Stanley, J. C., & Campbell, D. T. Experimental and Quasi-experimental Designs for Research. Chicago: Rand McNally Co., 1963.
- Stepp, R. E. A Feasibility Study to Investigate the Instrumentation, Establishment and Operation of a Learning Laboratory for Hard-of-hearing Children. Unpublished manuscript, Lincoln, Nebraska, University of Nebraska Extension Division, 1965.
- Stevens, R. P. Use of Sign Language as Seen Through the Proceedings of the First Four Conventions of American Instructors for the Deaf: 1850–1956. Unpublished manuscript, Edward Miner Gallaudet Library, Gallaudet College, Washington, D. C., 1966.
- Stevenson, E. A Study of the Educational Achievement of Deaf Children of Deaf Parents. California News (California School for the Deaf, Berkeley, Calif.), 1964, 80.
- Stokoe, W. C., Jr. The Study of Linguistics. ERIC Clearinghouse for Linguistics, 1970.
- Stuckless, R., & Birch, J. The Influence of Early Manual Communication on the Linguistic Development of Deaf Children. American Annals of the Deaf, 1966, 111, 452–460, 499–504.
- Tickton, S. G. (Ed.). To Improve Learning: An Evaluation of Instructional Technology (2 vols.). New York: R. R. Bowker Company, 1970–1971.
- Vernon, M., & Mindel, E. They Grow in Silence. Silver Spring, Md.: National Association of the Deaf, 1971.
- Vernon, M. & Koh, S. Early Manual Communication and Deaf Children's Achievement. American Annals of the Deaf, 1970, 115, 527-536.
- White, A., & Stevenson, V. The Effects of Total Communication, Manual Communication, Oral Communication and Reading on the Learning of Factual Information in Residential School Deaf Children. American Annals of the Deaf, 1975, 120, 48–57.
- Winer, B. J. Statistical Principles in Experimental Design. New York: McGraw Hill Book Co., Inc., 1962.
- Withrow, F. B. The Use of Audiovisual Techniques to Expand Lipreading and Auditory Experiences of Young Deaf Children American Annals of the Deaf, 1965, 110, 523–527.