A study of T.V. habits of sixth grade pupils from socio-economic groups

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A STUDY OF T-V HABITS OF SIXTH GRADE PUPILS
FROM SOCIO-ECONOMIC GROUPS

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L. A. K.
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CHAPTER I

THE PROBLEM AND THE NEED FOR STUDY

I. THE PROBLEM

Statement of the Problem

The purpose of this study was to determine whether differences exist (1) in the amount of time spent viewing television programs and (2) the type of program viewed by a selected group of sixth grade children from differing socio-economic classification.

Delimitations

This problem was limited to a selected group of normal sixth grade children who viewed television programs immediately after school until bedtime, for a period of ten days. These days included only Sunday, Monday, Tuesday, Wednesday, and Thursday.

No attempt was made to change the habits of listening or viewing as to the time spent viewing or the selection of programs viewed.

No person who did not have regular access to a television set within his home and had his choice of program was considered.

II. THE NEED FOR STUDY

Television is a means of communication. Its effect on viewers is unpredictable because of the
continuous social changes interacting in society and effects of continuous development of T-V. Observations continue to be recorded as studies and research are completed. Perhaps one of the most recent interests affecting the studies of viewers is the change of audience contributed by the lower socio-economic levels.

The observations of Columbia Broadcasting System and Rutgers University were reported from a systematic study. Their conclusions were that television is gaining acceptance at a rapid rate, that its time-displacing effect upon leisure time activities is already significant, that it is currently stimulating new interests, that its diffusion pattern is quickly building a broad base in the lower socio-economic levels.

On the basis of the evidence in this study, the Columbia Broadcasting System reported that television is responsible for new family interests and widened circles of friends. Their prediction was that television is destined to alter significantly the daily habits of Americans, and the future record will necessitate considerable retrospective comment as to television's impact on our culture (10, p. 4).

Therefore, there appears to be a need for further study of television viewing habits and school achievements of children from classified socio-economic groups (14, p. 223-224).
CHAPTER II

RELATED RESEARCH

I. EDUCATIONAL RESEARCH

Franklin Dunham's (4) report on the "Effect of Television on School Achievement" indicates that poor television habits, lower intelligence quotient, lower parental control, and poorer achievement tend to be found in the same child. He reported that television can be used to excess, like most recreation, and can result in damage to physical well-being and mental alertness.

Walter Clark, who conducted the above experiment at Xavier University, Cincinnati, Ohio, included 1,000 children in 16 schools in the sixth and seventh grades. The outstanding findings of this experiment were: There was no significance between the achievement of the television viewers and non-television viewers as to parents' control over televiewing. This report indicates an appalling percentage of parents who have no concern about what their children view on television. Fifty-two per cent of the children reported that they were permitted to watch any program they chose.

The preference of programs viewed by the children in this experiment were as follows: The first preference
was 86% out of 100 viewers watched Milton Berle; next, 85% viewed western programs; 70% viewed Hopalong Cassidy; 76% viewed Captain Video.

This report revealed the lower the intelligence quotient, the more likely the child was to watch mystery and crime programs. Wrestling was also correlated with low intelligence.

Coffin's (1, p. 550-558) research study on the effects of television on leisure time may be summarized as follows:

1. Television may bring about appreciable changes in the family's pattern of leisure time activities.

2. Families showed considerably lower level of participation in most other types of activities inside and outside the home.

3. Television owners are enthusiastic about the medium. The advertising on T-V is much preferred to commercials over radio.

4. The habit patterns and attitudes are approximately the same for long-time owners as new owners of television. Television influence may not be a transitory phenomenon passing when owners become habituated to their sets.

5. Analysis of the data reveals that the socio-economic status suggested there may be a tendency for television influence to be felt more strongly perhaps among middle-class families of groups than among the higher socio-economic scale.

6. That television is a means of communication, entertainment, and advertising, appears to exert appreciable influence on the lives
of set-owning families. Evidence suggests that as the medium becomes more accessible to increasing numbers in the population, it may bring noticeable effects on families' activities.

7. During the hours that television sets are in use, relatively large numbers watch. The average number of viewers per T-V set is 3.56 persons as compared with night time radio, where 1.9 listeners are per set. The difference between the two media (radio and television) is felt more acutely as we move down the socio-economic scale.

Maccoby's (12, pp. 441-444) research on the impact of television on school children was a study of comparative behavior of children in homes owning television with children in non-owner television homes. The principal findings were: Television families are closer by physical proximity, but there is a restricted social interaction. Children in set-owning homes tend to spend less time with playmates. Parent have difficulty in getting children to leave television for their meals and to go to bed. Children are substituting television for radio, movies, and reading. Watching prevents family members from reading, conversing, and playing. Parents very commonly approve of television as a "pacifier" for children. Children view from an average of 2.5 hours to 3.5 hours daily. This research involved 622 children, ages 4-17 years old and 332 mothers interviewed. The television ownership is related to socio-economic status.
Heyman (9) points out that the urban child who lives in a constant machine world is growing in an entirely different kind of environment than the child who lives in a more natural surroundings.

Gesselman's (7, pp. 385-391) experiment for a Master's degree brought forth new facts relative to television viewing of 60 third grade children and their reading habits. She paired 30 viewers of owned T-V sets against 30 non-viewers of owned T-V sets. The findings may be summarized as follows:

1. In this study 39% of the children stated they had been stimulated to read because of television.

2. There was no appreciable difference between the viewers of T-V owned sets and the viewers of non-owned sets as to the use of library books. It appears that those who like to read do; and those who are not interested in reading do not read. Both groups read daily papers in part.

3. There was no appreciable difference in the groups as to reading comics.

4. The non T-V owners spent more time with radio; the average was 3.53 number of programs per child.

5. Non T-V owner viewers attended slightly more movies than T-V owner groups.

Her conclusion was that television has not yet adversely affected the reading comprehension of third grade readers in this study. Children in T-V equipped homes achieved success in reading approximately the
same as non-television owners.

The children in the non T-V owner group slightly excelled the T-V owner group in school work.

It appears that teachers, librarians, and parents will be challenged to motivate good reading habits through glamorizing activities if the competition of the television and school interests keep balance. Reading can supplement the television programs to achieve greater information.

She emphasizes her report by stating that there is nothing to fear about television's affecting our children; the evils can be eliminated by parents' and children's cooperation to select good programs.

Paul Witty's (19) two studies of children's interest in television presents interesting information relevant to this study.

Both surveys were conducted by him with elementary school children in Evanston, Illinois. The findings in the 1950 survey may be summarized as follows:

Information was obtained from 2,100 elementary children. At this time 43% of pupils had T-V sets in their homes. Four schools were selected according to socio-economic distribution. About 70% of the children stated that T-V did not help them with school work. On the other hand, 30% believed it did help.

The relationship between intelligence and amount of televiewing was ascertained. The size of the
coefficients was insignificant in every grade (grade 3-6). There was little relationship between test results and the amount of time spent televiewing. Excessive viewing of T-V, however, seemed to be associated with somewhat lower academic attainment. From over 1,700 replies received from parents, 55% of television owners approved children's programs; there were 25% endorsed certain programs. In contrast, only 16% of the non-owners approved children's programs.

The outstanding reasons for approval of programs were the entertainment and educational values of T-V.

Reasons for disapproval were that children read less, that many programs were too sensational and over-stimulating. Western movies were shown too often, the excessive amount of time devoted to T-V left little opportunity for outdoor recreation and desirable physical activity.

Teachers' reports indicated 48% were dissatisfied with T-V. Twenty-seven per cent recognized some serious limitations in T-V, but recognized its future promise.

Among the limitations frequently mentioned were low standards of educational offerings and poor quality of entertainment. Approximately half of the teachers blamed minor behavior problems on T-V, such as increased nervousness, drowsiness, disinterest, and decreased interest in reading.
From the 1951 survey the following information was obtained:

Approximately 1,400 children answered questions. There were slightly larger numbers of T-V sets in lower socio-economic districts than in the higher districts. Colored children spent slightly more time with T-V than the others.

A decrease of 12% viewing was noticeable among children with T-V sets in the home. Also the children in T-V homes attended movies less than they did before T-V appeared.

Sixty per cent of parents approved children's programs. Approximately 9% endorsed a selected number only. Approximately 60% of teachers approved T-V for their pupils; about 30% expressed disapproval. Teachers qualified their approval by stressing the need for guidance in selection of the programs and the amount of time spent televiewing. They pointed out that individual differences should determine the kinds of schedules followed by different children. The reasons they gave were entertainment and educational values. The disapproval was because of poor quality in programs of education and entertainment, the excessive time devoted to televiewing, and the neglect of more wholesome activities.

Parents' disapproval was because T-V caused irregular behavior patterns manifested in aggressive
attitudes; also undesirable effects upon the child's physical development as well as his recreational pattern.

The programs selected from those viewed in order of preference by the children are shown in Table I.

Table I

**Favorite Programs of Children**
(by grades)

**Middle Grades (4-6)**

1. Crusader Rabbit
2. Paul Whiteman Revue
3. Movies of Kids (Flash Gordon)
4. Your Show of Shows
   Comedy Hour (Martin & Lewis)
   Kukla, Fran, and Olive — 7.
5. Adventures of Wild Bill Hickok
6. Lone Ranger
   Tom Corbett Space Cadet
7. Kids Karnival Kwiz
   Mama
8. Captain Video
   Hopalong Cassidy
   One Man's Family
9. Beulah Show (Ethel Waters)
   Cavalcade of Bands
10. Super Circus
    Paul Whiteman's T-V Teen Age Club

Children, parents, and teachers were asked for suggested programs they desire. These are shown in
Tables A and B for Children and Teachers. Parents indicated a need for improvement for what was shown on T-V.

**Program Suggestions**

**Table A**

<table>
<thead>
<tr>
<th>Children</th>
<th>Teachers</th>
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<tr>
<td>(older) 1. More, recent</td>
<td>1. Dramatics</td>
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<tr>
<td>Junior High</td>
<td>2. Musical Shows</td>
</tr>
<tr>
<td>2. Movies</td>
<td>Classic, light</td>
</tr>
<tr>
<td>3. Current events</td>
<td>opera</td>
</tr>
<tr>
<td>History</td>
<td>News and current</td>
</tr>
<tr>
<td>4. Music</td>
<td>events</td>
</tr>
<tr>
<td>5. Science</td>
<td>Civic affairs</td>
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</tbody>
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**middle group**

<table>
<thead>
<tr>
<th>1. More pioneer pictures</th>
<th>4. How-to-do Hobby Special interest shows</th>
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<tbody>
<tr>
<td>2. Foreign lands</td>
<td></td>
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<tr>
<td>Foreign People</td>
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**lower group**

<table>
<thead>
<tr>
<th>1. More children's plays</th>
<th>5. Story telling</th>
</tr>
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<tbody>
<tr>
<td>2. Pictures on hobbies</td>
<td>6. Science Programs</td>
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<td>crafts</td>
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The summary and conclusions of the studies would indicate the following:

- T-V is maintaining a hold on children.
- T-V owners are increasing in numbers.
- There appears to be less time spent in viewing by T-V owners on 1951 study as compared to 1950 study.
The strong interests caused by televiewing could be liabilities or assets according to individual differences and other factors involved with the child.

There is a feeling that reading may be affected because of the time consumed in televiewing.

Parents and teachers believe excessive interest in T-V may divert the child from participation in wholesome recreation and desirable physical activities.

The antidote lies in the provision of a constructive guidance program to effect a better behavior pattern, a better recreational pattern, and last, but not least, a better educational program which is functional in accordance with the needs of the child (19, pp. 251-257).

Shayon (15) states: "In general the large amount of escape and entertainment material on the mass media does not change people's interest and behavior patterns, but rather it is used in accordance with existing interests and behavior patterns of individuals." He explains persons who have a great deal of social awareness ordinarily select more of that kind of material (less escape material). On the other hand, persons who have less social awareness select more escape material. Whether or not the escapist content of the mass media encourages social apathy is not known.

His conclusion, it appears, is that what television can do to a child will depend upon the emotional needs of the child. Television, like all other mass media, does not really satisfy these hungers of children because it is not a genuine experience, but merely a substitute.
II. TELEVISION RESEARCH

Television is the most efficient and important medium of education and propaganda. Its powers of persuasion are estimated to far surpass other media and may roughly equal the combined impacts of aural radio, motion picture, and the press (10, pp. 14-15).

Gilbert Seldes has called it the instantaneous and complete transmission of actuality—the transmission of image of an event while the event is taking place.

David Sarnoff once referred to television's ultimate contribution as, "its service toward unification of the life of a nation, and at the same time the greater development of the life of the individual—a sentiment subsequently echoed by Winston Churchill!"

Psychologically, television is an extension of seeing and hearing over great distances. Vision and hearing are our two most important senses through which we acquire 98 per cent of all our knowledge. Because of this and because the process of visual aural extension is instantaneous, television can achieve the effect of making you feel you are two places at the same time.

The reaction of the view takes on one of the three forms:

(1) The effect of "looking in" on a program from the sidelines without actually taking part in it. This is usually the effect achieved in viewing sports events,
news events, and newscasts.

(2) The effect of "looking in" and the feeling of actually taking part in it. This is called the "subjective method." Examples would be audience participation, including quiz shows, demonstrational activities with "meet-a-celebrity" idea, and educational programs. Successful dramatic programs of same types of variety and dancing shows would fall in this category.

(3) This form gives one a feeling that a person, or persons, step into the living room and converse with you. An example would be a television announcer, viewed by a close-up camera, looking straight into the camera and addressed the audience as "you" while speaking in a conversational tone of voice (10, p. 13).

Television is an art: Programs of television consist of two general classification of fields: one involves transmission only; one involves creative interpretive effort. The programs of pure transmission in theory would be limited to showing motion pictures, not especially made or edited for television. Every other type of program of any kind would involved some exercise of editorial judgment and would, therefore, include some interpretive or creative effort. The fact that all other types of programs involve some degree of creative interpretive effort should be sufficient to indicate that television is potentially a new form of art. It is true
it has certain qualities of motion pictures, stage, and press; but the sum total of television is more than just the sum of these parts. If television is to become an art, it cannot remain as merely an imitation of some other medium, no matter how successful the imitation may prove (10, p. 12).

Leo Kuleshov, a Russian motion picture director and theorist propounded the theory upon which the Russian school of film production was based in 1920. This theory in turn affected motion picture technique throughout the world. He reasoned that in every art there is (1) a raw material and (2) a method of composing that material which is best suited to its essential nature. Kuleshov found he could predetermine effects by the relation, interrelation, and juxtaposition of the different strips of film. This led him to the conclusion that for silent motion pictures, the raw material was the strip exposed film carrying a photographic record, not the action depicted in that record. The act of piecing strips of films together in the right order and rhythm—editing, in other words, is the true cinematric method of composition: This theory is Montage by which the Russian school is known (10, p. 4).

Obviously there is much controversy about the subject of movies on television and the sizeable number of programs which are offered. Therefore, this problem must be viewed scientifically. Hubbell (10) states, "No art can be pulled out of a hat over-night, or even
in a decade or two." The history of every art shows that in its infancy, it initiated other forms and that examples of genuine artistic progress were classic varieties rather than occurrences. Because television is an art of the first magnitude, waiting to be developed, it is of prime importance that its potentialities should be considered critically with objective introspection (5).

There is a natural tendency for motion picture people to think of television as a new branch of motion pictures, for radio people to see it as visual radio programs, for theatre people to view it as an extension of Broadway, for advertising people to use it as a better method of selling, for educators to consider it a new dimension in audio-visual education, for manufacturers to dream of it as a perfect selling device for equipment. All of this adds up to limited foresight and limited capabilities. Television will demand a broad knowledge and experience of its artists and executives (10, pp. 15-16).

Scientifically, television is an electronic method of transmitting visual and aural images over a considerable distance, reproducing these images in an unlimited number of places and doing the whole thing so rapidly that for all purposes it is instantaneous. Materially, television must have vital organs in order to function: (1) an eye, or a camera; an "ear," or microphone with which to pick up picture and sound; (2) a control arrangement by means of which the apparatus can be
controlled, and the visual-aural program regulated; (3) a transmitting system, by means of which the visual-aural program is broadcast through the air and disseminated via wires and cables; (4) a receiving set which receives the program and connects it into a visual-aural replica of what the camera and microphone saw and heard at the point of origin (10, p. 12).

The idea of television probably originated with Max Plessner in 1892. He was a journalist who wrote a story about something called a telescope. This was before "television" had been coined. His predictions were that "it would present stage, opera, important events, parliament, lectures with demonstrations, church services, visits to watering places, races, parades, city sights. Further he stated, "The head of the state would address the whole nation through this medium." About the only thing he omitted was that television would be a new art form in due time. Plessner, whether he knew it or not, was establishing a pattern for most speeches and writings on television for the next half century or more. His speculations were on WHAT television would present, not on HOW to present it (10, p. 3).

The word "television" was probably coined in 1900 by a French librarian who was trying to catalog some material on electrical transmission of pictures which was called "telescopy" or "electroscopy." The librarian concocted the idea of the word television which we have
accepted without accent marks. It is derived from a Latin word, with Greek roots, meaning "distant-seeing."

Because television is the result of the contributions of many inventions, of men working apart and many inventions of men working together, it is the developmental process of years of scientific research. Therefore, to understand television today, it is important to know the history of its parts.

It is important to recognize television at present requires concentrated illumination—a group of performers with cameras focused on them. Behind the television camera lens is a vacuum tube known as the iconsoscope which serves the purpose similar to a "mike" in sound broadcasting, but in this case picks up the scene instead of the sound. Within the iconsoscope is a light-sensitive plate similar to photographic cameras. The light from the television lens sets up faint electric currents on the plate varying in strength according to the intensity of the light. This "mosaic," as the plate is called, is made of hundreds of thousands of tiny sensitive particles, each insulated from the others; in fact, a tiny photoelectric cell. The degree of charge depends upon intensity of the light falling on a given area. The heart of the camera is the iconsoscope, a sensitive and complicated apparatus, which no one but a technician can actually understand (17, p. 44).

The scanning beam picks up or reads the picture on the "mosaic" screen. This is done by an electron beam,
or sort of invisible needle point of electronic energy that moves with incredible speed back and forth across the plate (17, p. 43).

The tube which picks up the waves and changes them back from electrical vibrations to light is called kinescope. It, like the iconoscope, was invented by Dr. Zworykin. The kinescope is quite simple, consisting of an electron gun and fluorescent screen assembled in a highly evacuated bulb. The electron gun, like the iconoscope, is an electron-optical system which concentrates the electrons from the thermionic cathode into a narrow pencil (17, p. 44).

With the principle of television in mind as to its function and some of the important parts which make it function, the history of this great art and science can proceed.

**The First Epoch**

The story of television could well start with prehistoric records of light. For example, an Egyptian representation of the sun disc, then called Aten, pictures him (Aten) sinking in the west, causing hosts of bodies to become invisible. When he returns in the morning, the bodies become luminous by his magic touch. At a later date Otto von Guericke pointed out that light rays are invisible; for example, when one looks at a house, a bystander does not see any rays passing from the house
to the viewer—the ray is invisible (6, p. 216). A further example points out reflection. A light from a tree must pass through the air to reach us because the air is the medium. Reflection comes from the light rebounding from the sun via of medium, the air. The prehistoric story of Echo and Narcissus brought the idea of images by reflection of the body in the water. Further, the reflection from the dewdrop gave the idea of the first natural magnifying glass.

Following this, about 700 B.C., quartz lens were used in the palace of King Sennacherib at Nineveh. These lens were proved by Sir Austin Layard in 1885 to be the first specimen of rock crystal lens of plano-convex (17, pp. 218-224).

Perhaps the next important link in this story is the discovery of electricity by Thales, a Greek scientist of Maletus in 600 B.C. This knowledge was gleaned by rubbing amber against wool cloth, causing magnetic attraction called "dust-test." This experiment was the embryo of the electricity age. The Greek word for amber was electron, which is a common factor in contributing to television. It was not until 1646 A.D. that electricity was christened as such by Sir Thomas Browne of London in the literature of science (6, p. 363).

Leonardo de Vinci continued the story of light when in 1508 he found light transmitted into waves. It is interesting to note the word "wave" entered our language via Hebrew scripture (6, p. 156).
The pin-hole camera experiment of Leonardo de Vinci has the principle upon which television operates today. Also this principle is comparable to the function of the human eye, which he learned by dissecting the eye. He pointed out, "A small aperture in a window shutter projects on the inner wall of the room an image of bodies which are beyond the aperture. This will explain how the eye acts." (6, p. 251) About this time color was also introduced in relation to light by de Vinci. His theory was that light from larger and heavier particles has lower frequency, and light from smaller ones has a higher frequency. Also blue light has higher frequency than red and brown. Also the contributions of this famous scientist are recognized in his theory, "persistence of vision." The human eye preserves the impression temporarily for some time after the stimulus is removed. He explained this by example of a motion of a single firebrand whirled rapidly in a circle causes this circle to appear as one continuous uniform flame. Further, the impression that raindrops falling has on the viewer seems to leave the impression that the rain is continuous threads descending from the clouds (6, p. 252). This principle can be applied to the motion pictures today. There is no motion projected upon the screen, but merely many different pictures projected, each taken separately. These run before the light at a speed which an electric device causes to completely deceive the viewer (16, p. 69).
Another important feature of today's television dates back to the prediction of Roger Bacon, the telescope and microscope; both instruments have made worthy contributions to science (6, p. 88). It was approximately 1620 when Kepler reported the observation which was made by Tycho Brahe. A huge protractor was used by Brahe to view the stars. He explained that he looked at the stars through two small apertures of about two meters, or yards, apart. This was the forerunner of the telescope. Later studies on the work of Ptolemy and Alhazen described the telescope function: Information came that by the use of refracted vision, such figures, shapes, and objects shall be seen near at hand or at a distance. This instrument will cause the smallest letters to be read, as well as small dust particles to be recognizable, when the instrument is at the proper angle. The actual construction of the telescope was probably discovered by Hans Lippershey, a spectacle maker of Middleburg. Fame, however, probably came to it through Galileo Galilei's renowned discoveries which he made and was reported in 1610 (6, pp. 250-253).

History reveals many records of discoveries for this period, which contribute to television today. Phosphorus was discovered as a self-illuminating substance noticed by Cascarrolo of Italy in 1603. The small television screen, inside the vacuum tube previously mentioned, is coated with a similar fluorescent
substance (24). Between 1650 and 1663 Otto von Guericke proved an electrical charge can flow along a thread. He anticipated conduction of electricity. Also he suggested that electrical energy can be transmitted into sound and light. While he did not attempt to make this point, this is probably the origin of the first literature on the electrical aspects of thunder and lightning (11, p. 3). Possibly the idea of generating communication was originally the idea of Galileo, which he presented humorously in 1637 to a friend. He discussed the idea of a person speaking to another two or three thousand miles away by means of a certain magnetic needle. About this same time Cavallo presented an experiment which was the forerunner of telegraphy. This was done approximately a century before the Morse Code was known. He caused sparks to flow at different intervals of time, according to a code, to cause intelligence to be conveyed instantaneously from one place to another (6, p. 396).

At approximately the same time other discoveries were becoming a part of the history of television. In 1666 Sir Isaac Newton's contribution to science, discovering that light combined with all the colors of the rainbow by prism, another principle of television. Further investigation of light by Ole Roemer, 1676, enlightened the world that light travels 186,000 miles per second. Later discoveries proved that radio waves travel the same speed. Huygens extended this theory of light in
1696 to discover the knowledge of wave-motion (6, p. 272).

The Second Epoch

In 1729 the second epoch is characterized by Steven Gray's theory of conduction. His experiment was with amber and liquids, and brass wire. One of his greatest admirers was vivacious Charles Dufay, who in 1733 sent a letter to the Duke of Richmond describing the discovery of conduction. "Having read in one of Gray's letters that water may be electrical by holding the excited glass tube near it, a dish of water being fixed to a stand, and set on a plate of glass ... I found the same thing happens to all bodies without exception, whether solid or fluid." This paragraph above culminated twenty-three centuries of research (6, p. 405).

The Third Epoch

The third epoch is characterized by Canton's electroscope, his greatest service to electricity (6, p. 417). It may be characterized by the Leyden jar, or condenser. This was the forerunner of the storage battery. In 1745 Georg Von Kleist placed a nail in a tumbler of water and charged the water by conduction from a powerful machine (6, p. 409).

The principle of telegraphy was used by Sir William Watson's experiment when he caused gunpowder to discharge at a distance by a current running through a wire placed in the Thames River, 1747.
In 1791, Luigi Galvani proved muscular motion through electric currents running through a frog's body. By using a sharp brass hook, forcing it into the spinal cord of a frog, then placing it on an iron plate, contractions in muscles were obvious. When materials were the same, no effect was apparent. Galvani may have been experimenting with what we now call radio waves.

The Fourth Epoch

Volta's invention of the voltaic cell in 1800 opened a fourth epoch in the story of electricity and television (6, p. 438). While his theory extended Galvani's idea of current electricity, Johann Oersted's discovery showed relationship between magnetism and electricity. Oersted's work with currents promoted the invention of the electro-magnet in 1819. Frazier indicates that the invention of this instrument should be attributed to four or five men; namely, Arago, Ampire, Davy, Henry, and William Sturgeon of London who gave the instrument its name in 1825 (6, p. 455).

Charles Wheatstone's crude invention of an instantaneous action, 1820, caused by a rotating wheel was a continuation of persistence of vision. Also his invention of the stereoscope is the beginning of the three dimensional pictures (6, p. 283).
The Fifth Epoch

The fifth epoch was ushered into history by Michael Faraday's discoveries between 1831 and 1845. He concentrated on induced currents and the relationship between magnetism and electricity. He reversed the idea of Oersted, obtaining electrical energy from kinetic energy of a magnet. "When water is subjected to the influence of the electric current, a quantity of it is decomposed exactly proportionate to the quantity of electricity which passed through (6, p. 462). Further, in 1845, Faraday discovered the effect of magnetism on polarized light. The principle is used in directing the electron beam across the small camera screen in the vacuum tube (10, p. 33).

Several inventions affecting television between 1842 and 1852 were colored photography by Edmond Becquerel, and in 1842, Josephy Henry of New Jersey, caused an oscillation by discharge of the Leyden jar. A certain range which we use in radio was caused by this experiment. The interchanging current by discharge is important in producing different length radio waves as well as high frequency television waves.

Two important inventions in 1869 are worthy of note in television development. The Heinrich Geissler tube is the name given to the instrument emitting light called fluoresce. When this was first used, it was known as a vacuum tube called aurora tube; it was a
shimmering beauty. Johann W. Hittorf extended this experiment to affect cathode-rays.

**The Sixth Epoch**

It was approximately 1869 that James C. Maxwell discovered the existence of electric waves in the air and in the solar system. The fact that he found that light was a form of electromagnet ray in 1873 heralded the sixth epoch of history. He predicted that waves when discovered would be found to have properties that could travel through a vacuum, and transparent bodies with speed of light obey the laws of reflection, refraction, and interference of light—differing if at all in wave length and frequency. His major contribution was the organization of the various threads of the scientific pattern to make a consistent pattern (6, p. 478).

In 1873 an Irish cable operator found selenium's resistance to light varies according to the electrical current passing through it. The importance of selenium to the television camera is because the photo-electric cells of the small screen contain such substance (3, p. 21).

In 1875 the first idea of television was designed by C. R. Carey of Boston. This was a crude apparatus which reflected objects and looked similar to the human eye. The success of this was hampered by the absence of an amplifier which had not been invented as yet. Not until 1906 was it produced by de Forest. At the same
time Dr. Herr discovered a control light ray in mechanical television sets (10, p. 60).

In 1876 Gray and Edison patented a device to transmit sound. This was an invention to record the human voice and other sounds to be reproduced (14).

Within this same year, Alexander Bell invented the telephone. It was a combination of electricity and magnetism to convey the sound of voices through the transmitter (6, p. 199).

In 1884 Paul Nipkow produced the scanning scheme which was the main television principle. He proposed to send pictures, point by point, in a rapid and orderly succession instead of sending all parts at once. This orderly splitting of the pictures into points, or elements, is now called scanning. Not until thermionic tubes were developed forty years later did Nipkow's system become a practical reality, and became a great general development of television (13, p. 3). The principle of this mechanical scanning disc divided the picture into parallel lines similar to an electron beam. The disc had pinholes varying in distances from the center. When it rotated, the light coming through the pinhole seemed to travel across the screen.

In 1896 Guglielmo Marconi of Bologna first effected the electromagnetic waves to achieve communication through wireless telegraphy. He used a special cable to transmit television across the Atlantic (11, pp. 60-64).
**The Seventh Epoch**

This epoch is characterized by the electron theory and its applications, which began about 1900.

The advent of this epoch was brought about by the work of so many able investigators that it is not easy to single out any one person and accord him the laurels. A paper was published in 1896 which proposed the assumption that atoms are composed of smaller particles, now called electrons, protons, neutrons, etc.

For clarification, this definition of electron theory may suffice for explanation: the electron theory is a "theory that the chemical atom is not the smallest part of an element, but it is composed of electrons describing orbital and vibratory motions." (18) This theory is the culmination of ideas from previous periods, and therefore foreshadowed by Thale's amber experiment. One aspect of the continued progress of scientific research is seen in certain simplifications and unifications. There is a merging of ideas: acoustics and thermionics have merged with mechanics, optics and magnetism with electricity; therefore, the merging and the application of all the ideas related to the electron theory are important to television. One of the important discoveries affecting television was radium which was discovered by Pierre and Marie Currie about 1898. They named in radium to suggest that it emits rays. Such rays can affect electrometers and photographic plates.
and can make minerals fluoresce (6, p. 490).

In 1904 Johann A. Fleming invented the Fleming valve which was essential to television. This valve had the application of electromagnetic waves used in wireless telephony, later known as telegraphy.

In 1908 the American inventor, Dr. Lee de Forest, of Chicago, introduced an improvement of the Fleming valve. Thenceforth the development in electric waves and electron theory proceeded simultaneously (6, p. 493).

Following this, the Hertzian waves came into prominence. Heinrich Hertz contributed "light of every kind is itself an electrical phenomena—the propagation in time is proved and the wave length is measured . . . We multiply the wave length by the calculated frequency of oscillation and find the velocity which is approximately that of light. Connection between light and electricity is established. Optics is no longer restricted to minute aether waves. Thus the domain of electricity extends over the whole nature. We perceive we actually possess, an electrical organ—the eye." (6, p. 485)

In 1909 Albert Einstein announced the theory back of the modern television camera—the photo-electric sensitivity, defined as the photo-electric current in microamperes, drawn from a surface illuminated by one lumen of white light (13, p. 66).
Television was patented in 1907 by Boris Rosing, a Russian of St. Petersburg Technological Institute. The success depended upon the perfections of cathode ray tubes and photo-electric cells and the perfection of amplifying tiny electrical impulses.

The first satisfactory television camera was perfected following Vladimir Zworykin's experience with Boris Rosing as his student (11, p. 77).

The first record of broadcasting was done by de Forest and Hogan from the top of a building flagpole in New York City. This was a recording of "William Tell" which was heard in the United States Navy Yards by an operator who was expecting wireless signals.

David Sarnoff in 1916 purposed to arrange a wireless set in a living room as a piece of furniture to be used for entertainment. This was the first step toward commercial television (11, p. 77).

In 1920 the first broadcasting station to go on the air was KDKA. This was the broadcasting of the presidential election of Harding-Cox. The industry grew so fast that it caused many problems in communication. By 1922 the situation was serious enough to involve President Harding to instruct Mr. Herbert Hoover, then Secretary of Commerce, to summon a conference in Washington. Following this in 1923-1924 an Act of Congress passed a temporary control through the Federal Radio Commission.
This period from 1920-1927 involved history of the broadcasting companies' first experiences in organizing a purposed federal controlled communication system. The outstanding manufacturing companies in the field were General Electric, Westinghouse, and Radio Corporation of America.

David Sarnoff, general manager of RCA, proposed public support for radio-television, comparable to the support given to libraries, athletic fields, museums, etc.

In 1927 the turning point of radio history was at hand. Radio Act of 1927 was passed. A Federal Radio Commission was established and continued through 1933.

In 1934 the Commissions Act established a permanent Federal Communications Commission for the purpose of regulating interstate foreign commerce in communication in the United States. This was the first act in American history to control communication (11, p. 74).

Although television was technically born in 1930 (due to the camera perfection of Vladimir Zworykin) (5, p. 1), it struggled until 1939 before it was officially announced to the world at the World's Fair. RCA through the National Broadcasting Corporation presented its first television broadcast in New York on April 30, 1939, with President Franklin D. Roosevelt as speaker. He was First Gentleman of the Land and first television president in the history of the world (17, p. 34).
America has contributed a great deal to the development of television. However, it is wrong not to recognize other countries. Pictures were televised in Europe as early as 1880 (58). Perhaps they could be considered done roughly but recognizable.

The French had considerable success also, as well as did the Germans in showing television dramas on a screen 8 feet wide prior to 1937, according to the report of Dr. Peter Goldmark of Columbia University (16, p. 40).

Television is still in its infancy and will be going through a developmental process for years before it reaches its peak of perfection.

Now let us consider it as an art and a science, as previously mentioned. More than that it is a tool for communication. Like good human relations, it is simply the ability to take the other fellow into account while you are talking or acting.

Communication is not merely interaction. Dewey Mead and many others who have similar ideas have said, "One communicates when one puts himself in another's shoes—or while you are talking, you react to your own words." (2)

The new flickerless, all electronic color television system demonstrated at RCA Laboratories on October 30, 1946, and again on January 29, 1947, is the most recent positive contribution to the television leadership of our country.
In the near future it is expected that outdoor scenes will be televised in color in 1948 by electronic color television on large size theater screens.

David Sarnoff stated this universal system of all-electronic color television, accomplished without the outmoded rotating disc or any moving part, is as far-reaching as was the creation of RCA all-electronic television system, which supplanted the mechanical discs used in black-and-white television when it first began. Research is still in the making of television for future enjoyment and information (?).
CHAPTER III

THE METHOD OF PROCEDURE

A study of televiewing habits and interests of normal sixth grade children was conducted to determine (1) whether differences existed in both the amount of time spent viewing programs and (2) the types of programs that were viewed by a selected group of sixth grade children from differing socio-economic classifications.

This study was made in four elementary schools in Waterloo, Iowa, with 300 sixth grade children participating in this activity for a period of ten days.

The Plan for Study

The sixth grade children were informed of the proposed plan of this study by their social studies teachers. The idea was conveyed to the children that there was to be kept a systematic record of the programs which they viewed and a record of the time they spent viewing them. No attempt was made to motivate any special interest in television. They were given special instructions as to how to keep this record accurately (Table II, Appendix).
Criteria for Selection of Groups

1. Children were selected to represent the various socio-economic levels of a population (Table III, Appendix).

2. Children with normal intelligence were selected from these economic groups until 150 cases representing the various socio-economic levels were available (Table IV, Appendix).

These 150 cases which were selected for this study represented the socio-economic distribution of the total population. It was necessary to have an accurate perimeter, or a cross section, of society represented.

The various groups were called A, B, C, D, E (Table IV, Appendix).

Table V

Socio-Economic Distribution

This table represents the socio-economic distribution of 150 cases used in this study, and the percent of the population they represent.

<table>
<thead>
<tr>
<th>Groups</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number cases in each group</td>
<td>15</td>
<td>30</td>
<td>60</td>
<td>30</td>
<td>15</td>
</tr>
<tr>
<td>Per cent in each group</td>
<td>10</td>
<td>20</td>
<td>40</td>
<td>20</td>
<td>10</td>
</tr>
<tr>
<td>Total Cases</td>
<td>150</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The Criteria for Measuring IQ

The California Test of Mental Maturity was used to determine the normal intelligence of the children who were selected for this study. These tests were administered by the teachers and the principals of the four schools.

The Criteria for Grade Placement

The Iowa Every-Pupil Test of Skills was administered by the principals and teachers to determine the academic grade placement of the children. Only the scores of reading, vocabulary, and language were used in this study.

The Criteria for Academic Achievement

Only the grades of the teacher in the special departments were used in this study. The grades of English and reading were tabulated according to Table VI.

Table VI

Teachers' Grade Represented by Points

This table represents the basis of grading the elementary children in the Waterloo Schools.

<table>
<thead>
<tr>
<th>Grade</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>Un.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Points of Value</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

Average grade = C or 2
Criteria for T-V Program Classification

The T-V programs were tabulated into the fourteen categories which were used to determine the preference or the interest of the T-V viewers. (Table VII, Appendix). The director of programs for Station KWWL-TV classified the programs for this study according to the criteria set up by television program directors.
CHAPTER IV

STATISTICAL RESULTS

PART I

The problem in this study was to determine whether differences exist in both (1) the amount of time spent viewing television programs and (2) the types of programs viewed by a selected group of sixth grade children from differing socio-economic classifications.

The calculations for this study were made for the socio-economic groups, A B C D E, to determine the mean and range for the IQ's, the types of programs, the time spent viewing the programs, the teachers' grades, and the standardized tests used in this study.

The steps are explained as the need arises.

The criteria for the classification used to determine socio-economic levels and the normal intelligence will be found in Appendix Tables III and IV.

The mean T-V viewing time was determined from the record of the time spent by the differing socio-economic groups for a ten-day period.

The mean of the teachers' grades was determined by calculating the points for each grade of the differing socio-economic levels.

The mean of the standardized tests was determined for reading, comprehension, vocabulary, and language in grade placement.
**Statistical Method**

The "t" formula for significance of difference between the means was used to determine the significant difference between the socio-economic groups relative to their IQ's, the number of programs viewed, the teachers' evaluation, to standardized tests. An example of the use of "t" formula will be found in Table IX, Appendix.

The mean IQ of the differing socio-economic groups with the range of means for each group will be found in Table X.

The significance for time spent viewing was not calculated because the mean time was observed to be half of the number of programs.

**Table X**

**Mean IQ for Socio-Economic Groups**

This table represents the mean IQ for each economic group in this study and the range of the mean for each mean for each group.

<table>
<thead>
<tr>
<th>Group</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean IQ</td>
<td>108.33</td>
<td>106.33</td>
<td>104.88</td>
<td>104.88</td>
<td>104.00</td>
</tr>
<tr>
<td>Range IQ</td>
<td>110-97</td>
<td>110-93</td>
<td>110-93</td>
<td>110-91</td>
<td>110-90</td>
</tr>
</tbody>
</table>
Table XI

Mean of Programs

This table represents the mean number of programs that were viewed in this study by the various economic groups.

<table>
<thead>
<tr>
<th>Groups</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Programs</td>
<td>44.60</td>
<td>44.00</td>
<td>44.10</td>
<td>45.50</td>
<td>47.80</td>
</tr>
</tbody>
</table>

IQ Differences of Groups "A" and "E"

The significance of difference between the mean IQ of groups "A" and "E" was calculated. The computation of "t" for these groups appears in the Appendix to this report. A "t" value of 1.915 was obtained which is below the value of 2.048 necessary for significance at 5% level of confidence. This would then indicate that the observed difference in number of programs viewed by groups by "A" and "E" could well have been an accident of sampling.

Program Explanation for Groups "A" and "E"

The significance of difference between the mean number of television programs viewed by group "A" and group "E" was calculated (Appendix Table IV). A "t" value of .3631 was obtained; this is far below the value of 2.048 necessary for significance at the 5% level of
confidence. This would then indicate that the observed difference in the number of programs viewed by the groups "A" and "E" could well have been an accident in sampling.

Programs Explanation for Groups "B" and "E"

The significance of difference between the mean of television programs viewed by group "B" and group "E" was calculated (Appendix Table IV). A "t" value of .5697 was obtained. This is far below the value of 2.017 necessary for significance at the 5% level of confidence. This would indicate that the observed difference in number of programs viewed by group "A" and group "E" could well have been an accident of sampling. Table IV presents the mean program and mean time used for viewing. The mean difference in the programs for groups "B" and "E" is 3.80.

Reading Mean Explanation for Groups "A" and "E"

The significance of difference between the mean reading grade placement of group "A" and "E" was determined. A "t" value of 3.2324 was obtained. The value of "t" necessary for significance at the 1% level with 28 degrees of freedom is 2.763. The observed difference in mean reading grade placement between these two groups is too great to be an accident of sampling. Group "A" is significantly higher on this area of the test. Table V presents the mean values of each of the five
economic groups on various tests. The mean difference between groups "A" and "E" on the reading test is seen to be 2.347 grades of achievement.

Table XII
Mean of Reading Comprehension

This table presents the reading mean for the various economic groups used in this study.

<table>
<thead>
<tr>
<th>Groups</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Reading</td>
<td>7.76</td>
<td>7.76</td>
<td>7.30</td>
<td>7.28</td>
<td>5.61</td>
</tr>
</tbody>
</table>

Reading Explanation for Groups "C" and "E"

The significance of difference between the mean grade placement of group "C" and group "E" was determined. A "t" value was obtained. The value of "t" necessary for significance at the 1% level with 70 degrees of freedom is 3.20. The observed difference in mean reading grade placement on the Iowa Basic Skills Test between these two groups is too great to be an accident of sampling. Group "C" is significantly higher on this area of the test. Table V presents the mean values of each of the five economic groups on the various tests. The mean difference between the groups "C" and "E" is significantly higher on this area of the test. Table V presents the mean values of each of the five economic groups on tests.
The mean difference between group "G" and group "nBn" reading test is seen to be 1.69 grades in achievement.

**Vocabulary Grade Placement Explanation for Groups "A" and "E"**

The significance of difference between the mean vocabulary grade placement of groups "A" and "E" was determined. A "t" value of 3.3745 was obtained. The value of "t" necessary for significance at the 1% level with 28 degrees of freedom is 2.763. The observed difference in mean vocabulary grade placement on the Iowa Basic Skills Test between these two groups is too great to be an accident of sampling. Group "A" is significantly higher on this area of the test. Table XIII presents the mean values of five economic groups of the various tests. The mean difference between the groups "A" and "E" on the vocabulary test is seen to be 3.33 grades in achievement.

**Table XIII**

**Mean of Vocabulary**

This table presents the vocabulary mean for the various socio-economic groups.

<table>
<thead>
<tr>
<th>Groups</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Vocabulary</td>
<td>8.06</td>
<td>7.69</td>
<td>7.55</td>
<td>6.82</td>
<td>5.33</td>
</tr>
</tbody>
</table>
Vocabulary Grade Placement Explanation for Groups "B" and "E"

The significance of difference between the mean vocabulary grade placement of groups "B" and "E" was determined. A "t" value of 2.5428 was obtained. The "t" value necessary for significance at the 5% level of freedom is 2.017. The observed difference in mean vocabulary is too great to be an accident of sampling. Group "B" is significantly higher on this area of the test. Table XIII presents the mean values of each of the five socio-economic groups on various tests. The mean difference between the groups "B" and "E" on the vocabulary test is seen to be 2.36 grades on achievement.

Vocabulary Grade Placement Explanation for Groups "C" and "E"

The significance of difference between the mean vocabulary grade placement of groups "C" and "E" was calculated. A "t" score of 1.0551 was obtained. This is not significant; therefore, it might indicate the difference in the number of programs viewed by groups "C" and "E" could have been an accident of sampling.

Explanation of Mean of Teachers' Reading Grade for Groups "A" and "E"

The significance of difference between the mean number of teachers' reading grades in groups "A" and "E" was calculated. A "t" score of value 4.7017 was obtained. The value of "t" at this level for
significance at the 1% level with 28 degrees of freedom is 2.763. The observed difference in mean teachers' grades is too great to be an accident in sampling. "A" group is significantly higher on the area of the test. Table XIV presents the mean values of each of the five economic groups on the various tests. The mean difference between groups "A" and "E" is seen to be 1.46.

Table XIV

Mean of Teachers' Reading Grade

This table represents the mean teachers' reading grades for groups.

<table>
<thead>
<tr>
<th>Group</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Teachers' Grade</td>
<td>3.06</td>
<td>2.83</td>
<td>2.61</td>
<td>2.33</td>
<td>1.60</td>
</tr>
</tbody>
</table>

Explanation of Mean Teachers' Reading Grade for Groups "B" and "E"

The significance of difference between the mean teachers' reading grade for groups "B" and "E" was determined. The value of "t" necessary for significance at the 1% level with 28 degrees of freedom is 2.763. The "t" value obtained was 5.0265. The observed difference in mean teachers' reading between these two groups is far too great to be an accident of sampling. Group "B" is significantly higher on this area of the test. Table XIV presents the mean values of each of the five economic groups on the various tests.
economic groups on the various tests. The mean difference between groups "B" and "E" on teachers' reading is seen to be 1.23 grade achievement.

**Analysis of Mean Teachers' Reading Grades for Groups "C" and "E"**

The significance of difference between the mean teachers' reading grade of groups "C" and "E" was determined. The "t" value of 4.040 was obtained. A value of "t" necessary for significance at the 1% level with 70 degrees of freedom is 2.649. The observed difference in mean of these two groups is too high to be an accident of sampling. Group "C" is significantly higher on this area of the test. Table XIV presents mean values of each of the five economic groups of various tests.

The mean difference between groups "C" and "E" teachers' reading is seen to be 1.01.

**Analysis of Mean Teachers' Reading Grades for Groups "D" and "E"**

The significance of difference between the mean teachers' reading grade of groups "D" and "E" was determined. The "t" value of 3.3640 was obtained. The value of "t" necessary for significance at the 1% level with 43 degrees of freedom is 2.691. The observed difference in mean teacher's grade is too great to be an accident of sampling. Group "D" is significantly
higher on this area of the test. Table XIV presents the mean values of each of the five economic groups on various tests.

Explanation of Mean Teachers' English Grade for Groups "A" and "E"

The significance of difference between the mean teachers' English grade of groups "A" and "E" was determined; a "t" value of 3.3535 was obtained. The "t" value necessary for significance at 1% level with 28 degrees of freedom is 2.763. The observed difference in mean English grades between these two groups is too great to be an accident of sampling. Group "A" is significantly higher on this area of the test. Table XV presents the mean values of each socio-economic group.

Table XV

<table>
<thead>
<tr>
<th>Group</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Teachers' English grade</td>
<td>2.80</td>
<td>2.56</td>
<td>2.51</td>
<td>2.53</td>
<td>1.53</td>
</tr>
</tbody>
</table>
Explanation of Mean Teachers' English Grade for Groups "B" and "E"

The significance of difference between the mean teachers' English grade of groups "B" and "E" was determined. A "t" value 2.4531 was obtained. The value of "t" necessary for significance at 5% level with 43 degrees of freedom is 2.017. The observed difference is too great to be an accident of sampling. Group "B" is significantly higher on this area of the test.

Explanation of Mean Teachers' English Grade for Groups "D" and "E"

The significance of difference between the mean teachers' English grade of groups "D" and "E" was calculated. A "t" score of 1.6894 was obtained. This is too low to be significant at the 5% level of confidence. This would indicate that the observed difference means of groups could have been an accident of sampling.

Explanation of Mean Teachers' Language Grade for Groups "A" and "E"

The significance of difference between the mean teachers' language grade for groups "A" and "E" was determined. A "t" value of 3.1744 was obtained. The value of "t" necessary for significance at the 1% level with 28 degrees of freedom is 2.763. The observed difference in mean teachers' language of the two groups is too great to be an accident of sampling. Group "A" is significantly higher on this area of the test. Table XVI presents the
mean values of teachers' language of all the socio-economic groups.

The mean difference between groups "A" and "E" on language grades is seen to be -2.03 grade achievement.

Table XVI

Mean of Teachers' Language Grades

This table presents the mean of teacher's language grade for groups A B C D E used in this study.

<table>
<thead>
<tr>
<th>Group</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Teachers' Language Grade</td>
<td>7.82</td>
<td>7.25</td>
<td>7.59</td>
<td>7.10</td>
<td>5.79</td>
</tr>
</tbody>
</table>

Explanation of Mean Teachers' Language Grade for Groups "B" and "E"

The significance of difference between the mean of groups "B" and "E" was calculated. A "t" value of 1.0702 was obtained. This is below the value of 2.017 necessary for significance, at the 5% level of confidence. Therefore, it is not significant in this study. It would indicate that the observed difference between these groups could have been an accident of sampling.

Explanation of Mean Teachers' Language Grade for Groups "C" and "E"

The significance of difference between mean of groups "C" and "E" was calculated. A "t" value of
1.4182 was obtained. This is below the value of 1.994 necessary for significance at 5% level of confidence. This would indicate that the observed difference between groups "C" and "E" could well have been an accident of sampling.
PART II

TELEVISION VIEWERS INTERESTS
AND TIME PATTERNS

A. Interests

The T-V programs were tabulated and the results obtained from a record of sixth grade viewers who viewed television regularly.

An interest or habit pattern of differing socio-economic groups was observed. Table XI represents the mean value of the various levels. The difference in range of mean programs was 3.70. This observation indicates the lowest socio-economic group viewed the most programs in a ten-day period.

Interest Preference

Table XVII represents the televiewing interests of the viewers in various socio-economic groups. The programs are placed in order of preference.

The first place was the lowest socio-economic group, "E," which preferred variety, while all higher economic groups preferred drama programs.

The second place, group "E" preferred drama, while all higher socio-economic groups preferred variety programs.
For third place, the highest level, group "A" preferred comedy situation programs, while the lower socio-economic levels preferred quiz programs.

For fourth place, all groups preferred western programs except group "B" which preferred comedy situation programs.

For fifth place, groups "A" and "E" representing the extreme limits of socio-economic levels, preferred comedy programs. Groups "C" and "D" preferred comedy situation, while group "B" preferred western programs.

For sixth place, groups "C" and "D" preferred detective programs, while each of the other groups differed in preferences.

For seventh place, groups "A," "B," and "E" preferred detective programs, while groups "C" and "D" preferred comedy programs.

For eighth place, the higher socio-economic groups preferred news programs, while group "E," the lowest level, chose adventure programs.

For ninth place, the higher socio-economic groups preferred adventure programs, while the lowest level, group "E," chose children's programs.

For tenth place, the higher socio-economic groups preferred children's programs, while the lowest level, group "E," preferred news programs.

For eleventh place, the two highest groups and the two lowest groups preferred sports, while the average
preferred music programs.

For twelfth place, the highest economic groups preferred education programs, the two lowest economic groups preferred music programs, and the average economic group preferred history.

For thirteenth place, the highest groups, "A" and "B" preferred music, while the lowest groups, "D" and "E," preferred educational programs; group "C" preferred sports programs.

For fourteenth place, this level of preference indicates little interest in the programs. Group "A" results indicated interest in history at fourteenth level preference; whereas, group "C" results indicated interest in education. The history interest is practically nil at this level of preference.

(Table XVII on following page)
<table>
<thead>
<tr>
<th></th>
<th>1966</th>
<th>2690</th>
<th>1950</th>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>717</td>
<td></td>
<td></td>
<td></td>
<td>669</td>
</tr>
<tr>
<td>1</td>
<td>History</td>
<td>29</td>
<td></td>
<td>0</td>
<td>17. History</td>
</tr>
<tr>
<td>2</td>
<td>Education</td>
<td>9</td>
<td></td>
<td>31</td>
<td>13. Education</td>
</tr>
<tr>
<td>4</td>
<td>Sports</td>
<td>21</td>
<td></td>
<td>83</td>
<td>7. Sports</td>
</tr>
<tr>
<td>7</td>
<td>Comedy</td>
<td>326</td>
<td></td>
<td>326</td>
<td>4. Comedy</td>
</tr>
<tr>
<td>8</td>
<td>Western</td>
<td>915</td>
<td></td>
<td>915</td>
<td>3. Western</td>
</tr>
<tr>
<td>9</td>
<td>Variety</td>
<td>299</td>
<td></td>
<td>299</td>
<td>2. Variety</td>
</tr>
<tr>
<td>10</td>
<td>Drama</td>
<td>128</td>
<td></td>
<td>128</td>
<td>1. Drama</td>
</tr>
</tbody>
</table>

Preference of Types of Programs Viewed by Groups

Table XVI

A C B E D
In order to find the interest of the viewers for the various types of programs viewed, the mean score was calculated for each of the fourteen general classified programs.

Table VII represents the calculated mean for each socio-economic group which viewed adventure programs. From the results shown on this table, apparently the lowest group viewed the most adventure programs, and the highest economic group viewed the next highest number. The lowest number of programs was viewed by groups "B" and "D." The range of means varied from 2.5-1.4 which indicates a difference of 1.0 between the means of each extreme limit.

The observation of this data might indicate Group "E" mean was 456 more than the mean for the whole group, as calculated for adventure programs viewed.

**Adventure Interest**

Table XVIII represents the mean scores of socio-economic groups that viewed adventure type of programs. Group "E" viewed the greatest number of adventure programs. The mean score was 2.50. The range of means varied from the highest, 2.50-1.40 in group "E," indicating a difference in mean scores of 1.1. The mean score of group "E" was +.56 more than the mean score for all the groups.
Table XVIII

The Adventure Program Mean of Groups

This table represents the mean scores of the adventure programs viewed by groups.

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean for each group</td>
<td>2.13</td>
<td>1.40</td>
<td>2.10</td>
<td>1.80</td>
<td>2.50</td>
</tr>
<tr>
<td>Mean for whole group</td>
<td>1.94</td>
<td>1.94</td>
<td>1.94</td>
<td>1.94</td>
<td>1.94</td>
</tr>
<tr>
<td>Difference in means</td>
<td>.19</td>
<td>-.54</td>
<td>.16</td>
<td>-.14</td>
<td>.56</td>
</tr>
</tbody>
</table>

Drama Interest

This table represents the mean score of individual groups and the mean score of the all the groups that viewed drama programs.

Group "E" mean score indicates the lowest socio-economic group, which viewed drama programs the least (Table XIX). The difference was group "E" mean score of 3.47 less than the mean for all the groups. The range of mean scores varies from the 7.50 to 6.53, indicating a difference of .67 between the means.

(Table XIX on the following page)
Table XIX

<table>
<thead>
<tr>
<th>Drama Program Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>A   B   C   D   E</td>
</tr>
<tr>
<td>Mean</td>
</tr>
<tr>
<td>A B C D E Mean</td>
</tr>
<tr>
<td>Difference</td>
</tr>
</tbody>
</table>

Children's Programs

Table XX represents the mean scores of each group and the mean score of all the groups that viewed children's programs.

The range of means score varied from 2.26 to .09, indicating a difference of .17 (Table XX).

Group "E" viewed children's programs the most, and group "D" viewed them the least. The difference between group "E" mean and the mean score for all the groups was +.73.

Table XX

<table>
<thead>
<tr>
<th>Children's Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>A   B   C   D   E</td>
</tr>
<tr>
<td>Mean</td>
</tr>
<tr>
<td>A B C D E Mean</td>
</tr>
<tr>
<td>Difference</td>
</tr>
</tbody>
</table>
Comedy Programs

Table XXI represents the mean scores of children viewing comedy programs. The difference in range from the highest mean to the lowest mean was .90.

Group "A" apparently viewed comedy programs the most, and group "C" viewed the least (Table XXI).

Table XXI

<table>
<thead>
<tr>
<th>Comedy Program</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
</tr>
<tr>
<td>Mean</td>
<td>3.53</td>
</tr>
</tbody>
</table>

A B C D E Mean

| Difference     | .71  | .08  | -.19 | -.09 | .04  |

Comedy Situation Programs

Table XXII represents the mean scores of viewers of comedy situation programs. Group "E," the lowest socio-economic group, viewed comedy situations the least, while group "A," the highest socio-economic group, viewed these programs the most.

The range between the mean scores of the viewers in this category was 1.0.
Table XXII

<table>
<thead>
<tr>
<th>Comedy Situation Program Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
</tr>
<tr>
<td>Mean</td>
</tr>
<tr>
<td>A B C D E Mean</td>
</tr>
<tr>
<td>Difference</td>
</tr>
</tbody>
</table>

Detective Programs

Table XXIII represents the mean score of viewers in the various socio-economic groups who viewed detective programs. Apparently, group "A" viewed the least, while all lower socio-economic groups viewed detective programs more than the highest group.

The range of means for viewers in this category varied from 3.93 to 2.73, a difference of 1.20.

Table XXIII

<table>
<thead>
<tr>
<th>Detective Program Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
</tr>
<tr>
<td>Mean</td>
</tr>
<tr>
<td>A B C D E Mean</td>
</tr>
<tr>
<td>Difference</td>
</tr>
</tbody>
</table>
*Education Programs*

Table XXIV represents the mean score of viewers in socio-economic groups who viewed educational programs. Apparently, group "A" viewed the most programs, while group "D" viewed the least programs in this category.

The difference in the range of mean scores was varied from 1.46 to .003, indicating a difference of 1.457.

<table>
<thead>
<tr>
<th>Table XXIV</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Education Program Mean</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Mean</td>
</tr>
<tr>
<td>A B C D E Mean</td>
</tr>
<tr>
<td>Difference</td>
</tr>
</tbody>
</table>

*History and Documentary Programs*

Table XXV represents the mean of the number of viewers of history and documentary programs arranged in socio-economic groups. Group "D" viewed the most programs in this category. The mean score was 1.23 which was higher than the mean for all groups.

The difference in mean score of the viewers varied from 1.00-0 in this category.
<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mean</strong></td>
<td>1.00</td>
<td>.0</td>
<td>.048</td>
<td>1.23</td>
<td>.016</td>
</tr>
<tr>
<td><strong>A B C D E Mean</strong></td>
<td>.07</td>
<td>.07</td>
<td>.07</td>
<td>.07</td>
<td>.07</td>
</tr>
<tr>
<td><strong>Difference</strong></td>
<td>+.93</td>
<td>-.93</td>
<td>-.022</td>
<td>+1.16</td>
<td>-.054</td>
</tr>
</tbody>
</table>

### Music Programs

Table XXVI represents the mean score of viewers who viewed music programs. Group "D" represents the lower socio-economic group that viewed music the least. The mean score was .06.

The difference in the range of scores between the highest mean and lowest for this category was 1.27, which varied from 1.33 to .06.

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Music Program Mean</strong></td>
<td>1.33</td>
<td>1.33</td>
<td>1.38</td>
<td>.06</td>
<td>1.20</td>
</tr>
<tr>
<td><strong>A B C D E Mean</strong></td>
<td>1.13</td>
<td>1.13</td>
<td>1.13</td>
<td>1.13</td>
<td>1.13</td>
</tr>
<tr>
<td><strong>Difference</strong></td>
<td>+.20</td>
<td>+.20</td>
<td>+.25</td>
<td>-1.07</td>
<td>+.07</td>
</tr>
</tbody>
</table>
**News Programs**

Table XXVII represents the mean score of the viewers who viewed news programs. The range of mean scores varied from 3.75-2.73, indicating a difference in means of 1.02.

Apparently, lower socio-economic groups view the news programs more than the higher socio-economic levels.

<table>
<thead>
<tr>
<th>News Program Mean</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>2.73</td>
<td>3.63</td>
<td>3.75</td>
<td>3.93</td>
<td>3.33</td>
</tr>
<tr>
<td>Differences</td>
<td>+.20</td>
<td>+.10</td>
<td>+.22</td>
<td>+.40</td>
<td>+.80</td>
</tr>
</tbody>
</table>

**Quiz Programs**

Table XXVIII represents the mean score of the viewers in various socio-economic groups who viewed quiz programs. Group "E," representing the lowest level, viewed this type of program the most, while group "A," the highest socio-economic level, viewed quiz programs the least.

The difference between the mean scores was 2.40.
Table XXVIII

Quiz Program Mean

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>3.73</td>
<td>5.30</td>
<td>5.58</td>
<td>5.53</td>
<td>6.13</td>
</tr>
<tr>
<td>A B C D E Mean</td>
<td>5.31</td>
<td>5.31</td>
<td>5.31</td>
<td>5.31</td>
<td>5.31</td>
</tr>
<tr>
<td>Difference</td>
<td>-1.58</td>
<td>-0.01</td>
<td>+0.27</td>
<td>+0.22</td>
<td>+0.82</td>
</tr>
</tbody>
</table>

Sports Programs

Table XXIX represents the mean score of viewers who viewed sports programs. Group "A" viewed the greatest number of programs, while group "C" viewed the least number. The mean difference was +1.66.

Group "A" mean score was +1.63 higher than the mean for all the groups of socio-economic distribution.

Group "C" mean score was -0.033 which indicated a difference less than the mean for all the groups.

Table XXIX

Sports Program Mean

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>1.73</td>
<td>1.30</td>
<td>.063</td>
<td>.07</td>
<td>1.40</td>
</tr>
<tr>
<td>A B C D E Mean</td>
<td>.096</td>
<td>.096</td>
<td>.096</td>
<td>.096</td>
<td>.096</td>
</tr>
<tr>
<td>Difference</td>
<td>+1.63</td>
<td>+1.20</td>
<td>-.033</td>
<td>-.026</td>
<td>+1.30</td>
</tr>
</tbody>
</table>
Variety Programs

Table XXX represents the mean score of the variety program viewers. Group "A" apparently views the least number of programs, while group "E" views the most programs in this category.

The difference in range of means was +3.46.

Table XXX

<table>
<thead>
<tr>
<th>Variety Program Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>Mean</td>
</tr>
<tr>
<td>A</td>
</tr>
<tr>
<td>Difference</td>
</tr>
</tbody>
</table>

Western Programs

Table XXXI represents the mean scores of viewers who viewed Western programs. Groups "D" and "E," which represent the lowest socio-economic groups, apparently viewed Western programs more than the higher socio-economic levels. The range of means varied in this category from 5.40 to 4.40, suggesting a difference of 1.0.
Table XXXI

Western Program Mean

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>4.60</td>
<td>4.40</td>
<td>4.41</td>
<td>5.23</td>
<td>5.40</td>
</tr>
<tr>
<td>A B C D E Mean</td>
<td>4.76</td>
<td>4.76</td>
<td>4.76</td>
<td>4.76</td>
<td>4.76</td>
</tr>
<tr>
<td>Difference</td>
<td>-.16</td>
<td>-.36</td>
<td>-.35</td>
<td>+.47</td>
<td>+.64</td>
</tr>
</tbody>
</table>

B. Amount of Time Spent Viewing Programs

The amount of time spent viewing the programs by the children from differing socio-economic levels is represented in Table XXXII.

Table XXXII

The Mean Time Spent in Program Viewing by Differing Socio-economic Groups

<table>
<thead>
<tr>
<th>Group</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours</td>
<td>22.30</td>
<td>22.00</td>
<td>22.05</td>
<td>22.75</td>
<td>23.90</td>
</tr>
</tbody>
</table>

The range calculated in hours is 1.90. Group "E," the lowest socio-economic level, viewed the most hours, while group "B," the higher socio-economic level, viewed the least hours during the ten-day period.
SUMMARY AND CONCLUSIONS

Summary

T-V History. Television history dates back to 600 B.C. to the electrical attraction of objects. The important period of its development was approximately 1900 when the electron theory was recognized. This theory apparently was the assimilation of experiments relative to electricity. It was the merging of various experiments into a whole pattern—television. T-V was introduced to the world in 1939 in New York City by RCA through NBC. It is now recognized as a tool of communication. It is an art and a science which is still in a developmental process which is here to stay. Its importance apparently depends on how it is used by televiewers. The effect it has on children apparently depends upon the individual reaction of children to television.

Related Research. The history of T-V research on children indicates the following:

1. There is a difference in the average hours children spend televiewing.

2. There appears to be a difference of opinion about the effects of T-V on children's school work.

3. The interest of televiewers is changing, which could be caused by the lower socio-economic groups acquiring T-V rapidly.
4. There appears to be a need for more worth-while programs suitable to children's interests.

Procedure for Study. The problem in this study was to determine whether differences exist both (1) in the amount of time spent viewing television programs and (2) the type of programs viewed by a selected group of sixth grade children from differing socio-economic classifications.

A selected group of normal sixth grade children distributed in socio-economic groups representing a cross section of society was used for this study for a ten-day period. Reliable information was obtained to determine significance of difference between the differing socio-economic groups with reference to: (1) Programs viewed, (2) Time spent viewing, (3) Teachers' evaluation (English and reading grades), (4) Objective tests results (reading, vocabulary, language).

Findings. The observed results of this study indicate that there is no significance in the amount of time spent viewing television and the number of programs viewed by a selected group of normal sixth grade children in high and low socio-economic levels. There is a significant difference in the achievement between the differing socio-economic groups.
Conclusions

From the evidence collected in this study of television viewing habits of sixth grade children from differing socio-economic levels, the following conclusions appear to be justified:

1. There was no significant difference between any two socio-economic classifications in time spent viewing programs.

2. There was no significant difference between any two socio-economic classifications on the number of programs viewed during the ten-day experimental period.

3. The observed results suggest a television viewing preference or interest pattern for the high and low socio-economic levels. (These results revealed a difference in the interest for types of programs viewed by the high and low socio-economic classifications in this study. The high economic level appeared more interested in drama, comedy situation, and comedy programs. The low socio-economic level appeared more interested in variety, quiz, Western, and detective programs. The observation made on the results of this study suggest that both the high and low socio-economic classifications were the least interested in the following types of programs: children's, sports, music, education, and history. These results might suggest that these types of programs are not challenging the interests of sixth grade children.)

4. Significant differences were found between socio-economic groups in school achievement, as measured by both teachers' evaluation and standardized tests.
REFERENCES
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APPENDIX
Table II

A Copy of Instructions Used by Teachers
To Conduct Television Study

To Social Studies Teachers:

1. Please inform the sixth grade children there will be a T-V study of what they view for a two-week period beginning Sunday, April 25, 1954, and ending Thursday, May 6, 1954.

2. Instruct them to get a T-V log from the Sunday Waterloo, Iowa, Courier and bring to school on Monday. Ask them to save the margin on the paper when they cut it out on which to write their names. They are to write their names on the bottom of the log, with the last name first.

3. On Monday, immediately after they come to class, please permit them to draw a line under the program they viewed on Sunday from 4:00 p.m. until bedtime. Then have them place a plus sign beside the program if it was their own choice of program.

4. On Tuesday, they will follow the same instructions for recording Monday's televiewing. This same plan will continue for Sunday, Monday, Tuesday, Wednesday, and Thursday's viewing for two weeks.

5. On Friday the teacher will please collect the logs they used for the week and remind the children to bring a T-V log to school on Monday for the second week's record. Before collecting the logs, be sure to keep a record of the children who have their own T-V set in order that we can separate the logs of the T-V owners from non-owners. This information may be acquired during the ten days without calling special attention to the fact. This might save repercussions later or embarrassment to the children.
6. After the logs are collected on Friday, the children's logs are to be arranged according to the socio-economic classification, A B C D E. "A" represents the highest level; "E" represents the lowest level of socio-economic status. Your cooperation with your principal on this classification will be appreciated.

7. No further instruction is necessary. If you wish to keep a record of class discussion, it would be appreciated.
### Table III

**Criteria for Distribution of Socio-Economic Groups of Society**

<table>
<thead>
<tr>
<th>Group</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Group A</strong></td>
<td>This group represents the highest per cent of the population falling into the highest socio-economic level in terms of income. The persons in this group are generally successful administrators in business, professions, and are successful in private enterprise. They are found living in large homes having servants' quarters. They have two or more cars and live in the exclusive districts in the cities.</td>
</tr>
<tr>
<td><strong>Group B</strong></td>
<td>This group represents twenty per cent of the population falling into the upper socio-economic group above the average level. This level generally consists of business managers, executives, highly skilled people in vocational fields, and professional people. They generally have large homes or fine apartments; they own one or more cars.</td>
</tr>
<tr>
<td><strong>Group C</strong></td>
<td>This group represents forty per cent of the population. It has an average income. This level is in between the higher and lower levels. There is a variance of types of vocations and skilled workers on this level. They live in five- to six-room homes or apartments. They usually own their homes and one automobile.</td>
</tr>
<tr>
<td><strong>Group D</strong></td>
<td>This group represents twenty per cent of the population falling on the level just below the average income level. Unskilled laborers are found in the classification. Their income is barely adequate to live.</td>
</tr>
<tr>
<td><strong>Group E</strong></td>
<td>This group represents ten per cent of the population in the lowest socio-economic level. The income of this group is apparently inadequate. These people either receive county assistance, help from relatives, or both. They live in poorly furnished homes either as one family or live with another family in order to share expenses.</td>
</tr>
</tbody>
</table>
Table IV

IQ Table

This table represents the distribution of intelligence quotients of children age 5 - 14 years.¹

<table>
<thead>
<tr>
<th>IQ</th>
<th>51-70</th>
<th>71-90</th>
<th>91-110</th>
<th>111-130</th>
<th>131-150</th>
</tr>
</thead>
<tbody>
<tr>
<td>Per Cent</td>
<td>1%</td>
<td>18.4%</td>
<td>60%</td>
<td>19.6%</td>
<td>1%</td>
</tr>
</tbody>
</table>

Table VII

Types of Programs

This table represents 14 general types of programs viewed in this study, with special programs, classified under each category.

1. Adventure
   - Adventure Time
   - Inner Sanctum
   - Superman
   - Captain Video

2. Children’s
   - Smilin’ Ed McConnell
   - Howdy Doody
   - Playtime
   - Time for Beany

3. Comedy
   - Comedy Hour
   - Red Buttons
   - Red Skelton
   - Milton Berle
   - Jack Benny

4. Comedy Situation
   - Meet Millie
   - Life with Father
   - I Love Lucy
   - Dennis Day
   - Private Secretary

5. Detective
   - Badge 714
   - Dragnet
   - Man Behind the Badge
   - Dangerous Assignment
   - Justice
6. Drama

Studio One
Theatre
Feature Theatre
Half Hour Theatre
The Web
Tower Theatre
Film
Four Star Theatre
T-V Theatre
Late Theatre

7. Educational

This is Your Life
Ruth Ann's School

8. Historical-Documentary

You are There
Victory at Sea

9. Music

Liberace
Songs
Jo Stafford
Music Digest

10. News

News Capsule
Doug Edwards
News Feature
News-Weather
News

11. Sports

Wrestling
Sports
Sports
Fights

12. Variety

Godfrey and Friends
Toast of the Town
Starr Sighted
Youth Takes a Stand
Leo and Pioneers
Big Story
Bing Crosby
See Now
Big Picture
Love of Life
Talent Scout
Search for Tomorrow
This is Your Life

13. Western

Cowboy G-Man
Range Rider
Gene Autry
Ranch Hand
Western Film
Hopalong Cassidy
Wild Bill Hickok

14. Quiz

Place the Face
What's My Line
Quiz Kids
Strike it Rich
I've Got a Secret

Types of Programs arranged by Walter Mead, Program Director, KWWL-TV, Waterloo, Iowa
Table VIII

Mean Formula and Range

This table represents the mean formula and the range used in this study.

\[ M = \text{Mean} \]
\[ = \text{Sum of} \]
\[ X \] = Each of the individual measurements
\[ N = \text{Number of measurements in the series} \]

Range

\[ R = H-L \]
\[ R = \text{the range} \]
\[ H = \text{the highest measurement in the series} \]
\[ L = \text{the lowest measurement in the series} \]
Table IX

Formula for Significance Between Two Means

The formula used for comparison of means was the "t" formula for significance. The sample set up in this table represents the one used in the comparison of the different means for this study. The others differed only in the substitution of different groups.

\[
t = \frac{X_A - X_E}{\sqrt{\frac{\sum X_A^2 - (\bar{X}_A)^2}{N_A} + \frac{\sum X_E^2 - (\bar{X}_E)^2}{N_E}}} \frac{N_A + N_E}{N_A \times N_E}
\]

\[
t = \frac{175,853 - (1623)^2}{15} + \frac{163,006 - (1560)^2}{15} \frac{15 + 15}{15 \times 15}
\]

\[
t = 1.915
\]

Group A
\[M_A = 108.20\]
\[\Sigma X_A = 1623\]
\[\Sigma X_A^2 = 175,853\]
\[N_A = 15\]

Group E
\[M_E = 104.00\]
\[\Sigma X_E = 1560\]
\[\Sigma X_E^2 = 163006\]
\[N_E = 15\]

2.048 at 5% with 28 degree freedom