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ABSTRACT

"The Electric Company" was created by the Children's Television Workshop as an experiment to teach reading to 2nd, 3rd, and 4th grade children having difficulty learning to read. Solidly based on research in the teaching of reading, the curriculum emphasizes decoding skills. The production process included several phases: (1) assembling the repertory company, (2) graphic innovation, (3) research on appeal factors, (4) training of writers in teaching methods, (5) evolution of characters, (6) editing, (7) filming, and (8) informing the public. Each season of productions has been evaluated, and results have been used as formative input in the following year's productions. Research efforts have measured attention, comprehension, attitudes, and national impact. The program has been viewed extensively, and it has received wide acclaim. (EMH)

The Electric Company

Television and Reading, 1971–1980: A Mid-Experiment Appraisal

The jury is still out on whether American society (in which an estimated 25 million citizens are functionally illiterate) will marshal sufficient resources to achieve universal literacy. But this much we have learned from "The Electric Company" the medium of television is definitely one of these resources. This continuing experiment has demonstrated over the past years that the immense power and appeal of television can be applied to teaching the reading of print.

We had an inkling of this before the show premiered in 1971, but even the most optimistic producers and researchers did not dare to expect that the series would reach its young target audience so quickly and extensively, especially in elementary classrooms. However, teachers and independent researchers have confirmed that the program, in school and out, helped hattening young pupils before they were effectively cut off from other disciplines that depend so much on one's ability to read the English language.

The TV producers and educational researchers who have labored in this application of entertainment techniques to the teaching of reading have faced a variety of challenges in many ways greater than those the Children's Television Workshop faced in the creation of its first experiment, "Sesame Street."

- few of the experts agree on how to teach reading in the classroom, even under ideal circumstances.
- it seemed almost antithetical to consider the use of the medium of television to teach the reading of print.
- the format had to attract the viewer by action and humor that would compel him to attend to the print on the screen.

One result is surely the most technically sophisticated series in the history of television.

In TV terms the program enjoys a long life. Its final two production seasons, 1975 to 1977, incorporate everything that has been learned by our production and research team about reaching a target audience with educational messages. The 230 programs will be broadcast through 1980.

In the larger context of children's television, beyond our own contributions, I have been encouraged by what "Mister Rogers' Neighborhood" and "Zoom" and the bilingual programs of "Villa Alegre" and "Carrascolendas" have accomplished on public television, and by the occasional positive programming on commercial outlets such as ABC's "Multiplication Rock" and "After School Specials," CBS's "In the News" and NBC's "Special Treats." These few programs remain beacons in the no-man's land of television—perhaps we should call it "no child's land."

TV can and does teach. Yet it is most often used solely to entertain and too often to entertain violently. Audiences are not monolithic, specialized programming by age and by goal is possible and desirable (The Electric Company aims directly at seven to ten year olds). A teenager isn't interested in the same things as a preschooler, yet in the TV industry "children's programming" covers everything up to the age of 18.

We know that children like variety, yet the lowest common denominator in most commercial fare churns out remarkable sameness in formats. We know that kids respond to real human qualities, yet most of what they get are "TV superheroes" with little or no humanity.

We know all these things and more, yet with rare exceptions we continue down the same potentially destructive road. I believe that the necessary resources exist both in commercial and non-commercial television to serve the real needs of viewers, that what we require is the will to create a diversity of better programs for our most precious natural resource: our young people.

Joan Ganz Cooney

Joan Ganz Cooney
President
Children's Television Workshop
September, 1976

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THE PROGRAM: TURNING ON THE POWER OF TELEVISION TO TEACH READING

"In 15 years of examining these matters,
I have seen nothing in American education
of comparable importance."

--Martin Mayer in the New York Times Magazine

"The Electric Company" was created by the Children's Television Workshop (CTW) as an experiment in using television to teach reading skills to second-, third- and fourth-grade children who were having difficulty learning to read in school.

Now in its sixth season of production with more than 700 half-hour shows created, the program has been established as one of the finest children's programs on the air. A loyal audience estimated at more than six million children watches the show via the 265 public TV stations. The Electric Company has earned two Emmys, the first classroom program so honored, and an international jury voted it the best primary education program in the world at the coveted Japan Prize competition in Tokyo. The Ohio State Award, the oldest and most prestigious education award in American broadcasting, cited The Electric Company as "an awesome creation which imaginatively utilizes the medium to instruct with brilliance and professional quality not commonly found."

Perhaps most importantly, independent research evidence by the Educational Testing Service and others has verified the educational impact of The Electric Company. Studies have found that the show significantly improves basic reading skills of its target audience and that it has been adopted enthusiastically by schools on a large scale. In response to these findings, The Electric Company has gradually shifted in emphasis from a show produced primarily for viewing at home to one intended mainly for classroom use. Research on the needs and reactions of the audience has played a continuing role in shaping the series' content. While the actual production of new Electric Company programs will end with the sixth season and plans are to broadcast shows from past seasons through 1980, research and utilization for the series will continue as contributions to the growing body of knowledge on the potential uses of the television medium for children. (For more details on research, see pages 14-22.)

The Electric Company has been funded at a level around $5.5 million each season by the U.S. Office of Education, member stations of the Public Broadcasting Service, the Corporation for Public Broadcasting, the Ford Foundation and the Carnegie Corporation. This figure includes pre-broadcast and continuing research, production of 130 half-hour programs and post-broadcast, outreach and evaluation.

The cost is substantial, but when considered in terms of audience size, each of the 130 half-hour episodes produced each year costs less than a penny per viewer. Production costs per show remain well below comparable commercial network prices for children's programming. An average Electric Company program costs about $32,000 to produce, while Saturday morning commercial half-hours for children cost in the range of $70,000.

The Electric Company experiment also includes a variety of off-screen outreach efforts designed to increase the impact of the show's curriculum. Among these are the creation and dissemination of multi-media and printed materials related to the program (see page 25) and grassroots activities inspired by CTW's Community Education Services Division (page 22).

Reflecting on the project, Terrel H. Bell, U.S. Commissioner of Education, declared: "Children who can scarcely talk are on a first-name basis with the characters in such established TV favorites as Sesame Street and The Electric Company.....These programs are two of the best things the Office of Education ever invested in."

TACKLING ILLITERACY VIA TV: ORIGINS

The Electric Company shares with its preschool counterpart, Sesame Street, the distinction of being the two most thoroughly researched programs in the history of television. Eighteen months of extensive research and development preceded the premiere of The Electric Company on October 25, 1971.

CTW President Joan Ganz Cooney recalls that the project was requested by the U.S. Office of Education, whose "Right to Read" campaign sought to achieve universal literacy in the 1970's. Government estimates showed that illiteracy was a problem for as many as one out of ten Americans. Millions more are described as "functional illiterates" who remain outside the mainstream of a print-literate American society.

Dr. Gerald S. Lesser, Bigelow Professor of Education and Developmental Psychology at the Harvard Graduate School of Education and chairman of CTW's advisory board, explains that doing a reading show "was just a natural step from Sesame Street. As we went along with the three-, four- and five-year-olds on Sesame Street it was quite obvious that they were getting some of the pre-reading language skills we were setting out to teach them, including reading simple sight words. So we reasoned that if little kids can do it as quickly as they seem to, we ought to have a shot at doing it with older youngsters as well."

A TV Producer Turns Reading Expert

The assignment of producing the reading series went to Samuel Y. Gibbon Jr., who at that time was a producer of Sesame Street. "I didn't know anything about the teaching of reading," he remembers, "and it seemed to me that if I was going to do this show I had to know as much as I could about how language develops as well as how reading is learned."

Gibbon spent the first half of 1970 talking with language and reading experts around the country. He also researched the various methods of classroom reading instruction and by late spring felt ready to call together a seminar of academic advisors to begin developing a curriculum. More than 100 experts participated in the pre-production planning -- including psychologists, educators and reading teachers, as well as filmmakers and TV professionals.

Meeting regularly through the spring and summer, the advisory group chaired by Dr. Lesser discussed the various reading skills that should be incorporated in the series. By the fall of 1970 the committee agreed upon a curriculum. "The intention," explains Dr. Barbara Fowles, then assistant research director, "was not to create a new method for teaching reading but to draw upon the various established techniques -- a 'cafeteria' of approaches. The unusual, and hopefully successful, innovation would be the presentation of these techniques on television."

During the same period in 1970, a research team headed by Dr. Edward L. Palmer, vice president for research, and Dr. Fowles began testing children for existing achievement levels and the most appealing types of television programming. They also conducted a survey of various approaches taken in classroom reading materials.

The program was to be aimed at children between the ages of seven and ten -- crucial years for learning to read. Gibbon expressed some early doubts about that decision. "I was concerned whether we ought to be teaching failing readers and whether it might be better to teach beginning readers, to pick up where Sesame Street left off." Dr. Lesser was one of those who convinced Gibbon to focus on second- and third-graders who were having trouble learning reading in the classroom. "If the student falters at this point," Lesser pointed out, "there is still time for a mid-course correction. After the third grade, reading becomes a tool to explore all other subjects rather than a subject in itself. If the child isn't reading up to his grade level, after that the chances of frustration and failure are heightened dramatically." The series was conceived as a supplement to classroom instruction and the bullseye of the target audience was set as the at-home viewer in the lower half of the second grade in reading achievement.

Specific Curriculum Emphasizes Decoding

The curriculum emphasis was, and still is, on decoding skills -- a suggestion originally made by Drs. Jeanne Chall and Courtney B. Cazden of the Harvard University Graduate School of Education, authorities, respectively, on the teaching of reading and the development of child language. Dr. Cazden, chairman of the program's advisory committee, offered the structure for the program's curriculum. The series stresses three basic strategies for letter/sound analysis: "blending," "chunking" and "scanning for patterns."

Blending is the process of sounding out phonically regular words letter-by-letter or constructing words from smaller parts (for example, initial consonants can be substituted to make a word family, as in "mop," "top" and "pop").

Chunking helps the child recognize groups of letters as single units corresponding to single sounds (such as "ow" "ight" "th" and "ai").

Scanning involves looking ahead for spelling patterns that may affect the pronunciation of a word such as the "silent e," which signals a long vowel sound (as in "bite") or a doubled consonant, which signals a short vowel sound (as in "bitter"). These three strategies

can then be applied to the reading of phrases and sentences.

To complement the process of phonic decoding, the curriculum written by Dr. Barbara Fowles and the research staff, included a section titled "Reading for Meaning." "The general objective here," reads the first season's curriculum, "is to convey to the child that the ultimate goal of decoding is to reconstruct the intended meaning; his job is not completed with phonic analysis alone. Reading will be presented as a problem-solving endeavor, in which the purpose is to extract sense."

The committee also decided that there could be no sequencing from one show to the next. Each half hour program would be a separate entity. "We had to assume," Gibbon explains, "that a home viewing pattern wouldn't be constant so any kind of sequencing we undertook would necessarily exclude some parts of the audience. However, we did decide that there would be sequencing within an individual show, allowing the child to start at the simplest point and to progress to a more complex point where he could read a phrase or short sentence comprised of some of the words that had been taught earlier in the program."

Curriculum goals have been reviewed by producers, researchers and the advisory committee at the end of each season. With some changes, the original emphasis on decoding has continued. The curriculum for the sixth season, to be broadcast during 1976-77, consists of four sections, one each on "blending," "chunking" and "scanning" and a last section on "phrases and sentences." Its introduction states:

> Reading is presented as a unified process of getting information from print, incorporating units at several levels (letters, letter combinations, syllables, words, phrases, sentences). A problem-solving approach to reading is stressed, that is, the child is made aware of all the kinds of clues that are available to assist him. The notion that we read for <u>meaning</u> underlies all teaching strategies.

THE PRODUCTION PROCESS: HOW EASY READER CAME TO TEACH CONSONANT BLENDS

> "This production must be given top ratings by every standard of measurement. It is an awesome creation which imaginatively and entertainingly utilizes the medium to instruct with a brilliance and professional quality not commonly found. It represents a special level of excellence. The considerable financial resources have been used to the utmost. The result is a model which represents a goal toward which all producers of instructional materials might aspire, however unlikely it is that comparable funding will be made available."
>
> --Ohio State Award Citation

From a five-page document of curriculum goals cloaked in academic vocabulary, The Electric Company evolved into one of the

brightest, most entertaining and technically most sophisticated shows on television. The process of hitting upon the right formula wasn't easy. Fortunately, sufficient financial resources were available to allow for thoughtful planning and execution. A CTW proposal for "a reading show" had attracted $7 million in grants from a consortium composed of the U.S. Office of Education, the Ford Foundation, Corporation for Public Broadcasting and the Carnegie Corporation.

Back in March of 1971, producer Gihbon, executive producer David D. Connell, and head writer Paul Dooley, aided by their curriculum advisors, began to shape their tentative ideas into programming pieces. Gibbon and Connell were veterans of the CBS children's program "Captain Kangaroo" and had collaborated in the development of Sesame Street. Dooley had been a performing member of Chicago's Second City repertory company and was a well-known TV writer and actor. First, some basic decisions were made that would set the format of the show:

Assembling A Talented Company

A versatile repertory company would form the cast. Unlike Sesame Street, action on the reading series takes place in a multitude of settings with no home base. "This was quite deliberate," points out Sam Gibbon. "We decided it had to be different enough from Sesame Street so that kids who were graduating from our first show would not dismiss the new program as kid stuff. We wanted it to be more hip, more sophisticated, but we wanted to use many of the same techniques and styles, especially the variety magazine format. Having flexible settings and characters, however, meant that characters in the show were not language-or role-bound. A black actor could play an articulate lawyer speaking standard English and then play a street character talking idiomatic English. The implicit message was that you could be multi-dialectical in English."

Seven accomplished TV, film and theatrical performers signed on for the first season. Jim Boyd had acted on stage as well as performed the voices for children's animated characters. Morgan Freeman had an extensive background both on- and off-Broadway. Judy Graubart was a graduate of Chicago's Second City. Skip Hinnant, who had left journalism for drama at Yale, was best known for his portrayal of Schroeder in the off-Broadway production of "You're A Good Man, Charlie Brown." Lee Chamberlin came from a stage career in Paris. Rita Moreno, an Oscar-winner as Anita in "West Side Story," had continued to star in several Broadway and television productions as singer, dancer, comedienne and dramatic actress. To complete the cast, Bill Cosby, the Emmy-winning TV and comedy star, accepted the chance to put into practice his conviction that TV could be put to more educational uses for young, disadvantaged children.

In subsequent seasons, they would be joined by Luis Avalos, a member of several New York repertory companies, Hattie Winston of the Broadway production of "Two Gentlemen of Verona" and Danny Seagren, a former Sesame Street Muppeteer who assumed the role of Spider-Man. A young rock group created by CTW and named The Short Circus brought together talented youngsters with professional backgrounds in drama, music and dance.

Innovations With Graphics and Special Effects

The show would lean heavily on special effects and print graphics. For example, words could be pulsated, flashed, expanded, exploded and made to change colors. Computer-generated graphics could virtually separate a word into its important segments and then reassemble it. "We could graphically illustrate to the child how to decode a word," points out Gibbon, "and we could show the process smoothly and without interruption. That seemed very significant to us.

"We could also use an electronic device called chroma-key to alter scale," he continues. "We could show a small figure surrounded by very large letters manipulated by a huge hand. We knew the teaching was appealing to kids but more than that we hoped that the device would let the audience know that we were aware of their apprehension about print and that we sympathized with them."

There was much concern over how print should appear on the screen and how it could be related to the action. These questions have fascinated CTW's producers and researchers from the beginning, and inspired sophisticated research on such subjects as the movement of the eye in response to television images. But that was further down the line. In that first year, the primary focus was on solving production problems in getting print on the screen and calling attention to it, and print commonly appeared at the bottom of the screen. By the third season, results from eye-movement studies helped improve the treatment and location of print.

Another successful device has been the use of two silhouetted heads, one at the left of the screen and one at the right, facing each other. To the accompaniment of syncopated music, a word family is presented, the left silhouette saying the first part of a word as the corresponding print emerges from the actor's mouth. Then the right one says the second part as it emerges from his mouth. Then the two parts of the word come together in the center of the screen and the two silhouettes say the entire word together.

With some guideposts of a repertory company, a magazine format and extensive use of graphics for animating print, Connell, Gibbon and Dooley sat down to hammer out a first script. Easy Reader, Fargo North, Decoder, Rita the Director and "The Sign Song" came alive, along with ideas for songs, skits and film animations. The repertory company and the show's dependence upon electronic wizardry to portray print led to the title: "The Electric Company."

Five pilot shows were produced and tested during the summer of 1971. Research findings gave positive prospects for the series, which then launched into full-scale production.

Learning and Appeal Factors: Early Research

That the first pilots had to meet the critical eye of not only experienced TV professionals but reading experts and researchers as well says much about the collaboration between the research and production

teams at CTW. Academic opinions and field research have guided the development of The Electric Company at every stage, from reading experts advising on the curriculum goals to in-house researchers carefully charting the reactions of young children to specially selected program segments.

This collaborative approach to planning and production has been called "the CTW model." First developed for Sesame Street, it provides a unique working relationship in which professors and researchers work with producers and writers to help determine program elements combining appeal and educational effectiveness. Attention span, verbalization, eye movements and national studies of educational impact all are targets of Electric Company research.

Even before the first pilot was produced, the research staff, headed by Dr. Edward L. Palmer, CTW vice president for research, was in the field testing the appeal of television material typically viewed by children and the reactions of target-age children to types of humor. Prior to coming to CTW in 1968, Dr. Palmer had received a doctorate from Michigan State University and done further work at Florida State University in applying techniques of educational measurement and research design to television viewing done by children.

Using material from popular TV cartoons and comedies and experimental Electric Company programs, the research employed methods developed by Dr. Palmer and his research team. "We learned that these children really love parodies," says Dr. Palmer. "They are terribly fond of spoofs on things they already know about. We also discovered that when we ran a segment over three to five minutes we risked losing the attention of the children. The magazine format, slapstick gags and parodies were easily responded to by the children."

Enter the Writers: Funnymen Asked to Teach

The research only complicated things for the writers. They had to do more than be funny, a task difficult enough as it is. Now, they also had to teach. "Do two funny minutes on the blend 'fl' -- it's a nightmare for a writer," says David Connell. For the eight writers -- head writer Tom Whedon, John Boni, Sara Compton, Tom Dunsmuir, Elaine Laron, Thad Mumford, Jeremy Stevens and Jim Thurman -- drawn from backgrounds of writing television comedy and advertising, this was a new and often frustrating experience. Never before, in writing network specials or advertising copy, had they been asked to revise a script because "the goal isn't clear" or "the print isn't salient."

"The producers and head writer may ask writers to rewrite bits for a myriad of reasons," explains associate producer Kay Corkett. "They may be too complicated, too long, too verbal, the puns too adult, the punch line not strong enough." As Tom Whedon, who had been among other network chores, the head writer for "The Dick Cavett Show," describes it:

"We were subject to the disciplines of the curriculum, which meant we had to apply our comedic talents to a set of narrowly defined teaching goals. In some ways it was easier: we knew the area we had to attack. But it was also harder. We had to make sure that what we

created contained an entertainment quotient to appeal to the target audience and an educational message that would teach that audience. I was intrigued by the test shows. I planned to be here six weeks, and I'm still around."

"It was difficult and exciting," adds Tom Dunsmuir. "We had to incorporate very specific goals into each of our skits, which was no easy task. On the other hand, we were given incredible creative freedom. It was a heady experience."

Evolution of the Characters

Whedon's one reservation was that the show was "too serious" at the beginning. "It needed somebody who could walk through a wall occasionally -- somebody who can produce wild behavior without scaring kids."

His conclusion: The Electric Company needed a gorilla. Everybody thought he was kidding, but he pressed the point and prevailed. Paul the Gorilla, one of the popular characters of the show, was named after Paul Dooley, the head writer for the first season.

According to Dunsmuir, who has written 90 shows, there is no formula for creating the various characters for the series. Some, such as "Easy Reader," "Fargo North, Decoder," "Julia Grownup," and "J. Arthur Crank," were created for the first test shows, while others, like "The Blue Beetle," "Letterman" and "Silent Sam," came about later from the day-to-day writing of the show. "Sometimes," reveals Dunsmuir, "you don't know you have a good character until another writer shows interest in it and says 'let me try writing something using that character.' One writer thought of doing The Blue Beetle and we all began writing for it."

All the characters for the show have an educational function. Thus the hip-talking Easy Reader, who is obsessed with the written word, is there to inspire the desire to read in the children. "Fargo North, Decoder" helps them use context clues. "Silent Sam" was designed to elicit overt responsiveness in the viewers. Since he doesn't speak, it was hoped he would encourage the children to do it for him by reading his part.

Some characterizations, although hilarious to adults, just didn't make it with the kids. Such was the case with Judy Graubart's marvelous parody of chef Julia Child. Her character, "Julia Grownup," was shelved in the third season.

Creativity: From Typewriter to Studio Production

Each Electric Company program is the end product of an elahorate and painstaking procedure, made even more so by the complicated and expensive technology needed for the series. Producers and directors edit and revise writers' scripts, receiving comments from the graphics coordinator and art director, down to the final moment before taping begins in the studio.

Before the production season gets under way, the board of advisors,

comprised of reading experts and teachers from schools and universities across the country, meets to suggest changes in the curriculum and format. For example, the proportion of the time allocated to teaching various curriculum goals may be adjusted. Goals are then distributed across the 130 shows for the season and writers receive assignment sheets for each show, broken down by curriculum goal -- for instance, individual consonant and vowel sounds, consonant blends, vowel combinations, morphemes, silent e, sight words, punctuation. A typical assignment sheet will ask the writer for segments in three or four goal areas, noting whether it should be designed for studio production or film animation or computer graphics.

The writer's first draft, known as the "A script," goes for approval to the head writer, Tom Whedon. When approved, it becomes the "B script" and is edited in the sixth season by executive producer Sam Gibbon, associate producer Kay Corkett and the research department. Any changes are incorporated into a "C script," which is again checked by Whedon and Gibbon, and sent for typing as the "green script."

At the preproduction meeting, the "green script" is discussed by the executive producer, studio producer, director, associate director, graphics coordinator and the assistant to the executive producer. "The principal function of this meeting," explains Sam Gibbon, "is to straighten out the graphics -- whether the print will be portrayed through slides, camera cards, signs on set, computer animation or put in at post-production. We're concerned about what letters should be salient, what should be matted and how, capitalization and punctuation. Also settled in that meeting are any other production problems, casting problems, line changes."

Changes in the green script are checked again with Whedon and the final "white script" is distributed to cast and the production crew at a general production meeting.

Film: Characters and Curriculum Come Alive

Short films, such as the "Message Man" and "2001" series, have proven especially popular with Electric Company viewers. Animated film is created much differently than segments designed for studio production. Typically, a writer drafts the idea for the animation piece and an outside film company is commissioned to produce the film. Edith Zornow, supervising film producer, oversees the production, revising storyboards, listening to audio tracks (the music frequently written by music director David Conner) and viewing the answer print.

Voice-overs for Electric Company films have been performed by such celebrities as Mel Brooks, Bob and Ray, Victor Borge, Howard Cosell, Mel Allen, Dizzy Gillespie and Bette Midler. "Letterman" episodes feature the voices of Joan River as the narrator, Zero Mostel as the villain and Gene Wilder as Letterman.

Other animations have received awards from the American Society of Independent Film Animators (ASIFA-East) and the Council on International Nontheatrical Events (CINE).

Music: Scoring for Appeal and Education

Music has always been an important vehicle for presenting cur-

riculum items on both of CTW's children's programs. In the early stages of Sesame Street, Joe Raposo, then CTW's music director, convinced producers that composing original tunes and background music would be better suited to the show than trying to fit existing songs and music where needed. That decision proved even more appropriate for The Electric Company's particular goals.

Most lyrics for Electric Company music originate with the show's staff writers. The series' music directors, originally Raposo, then Gary Friedman and now Dave Conner set them to music. Many of the songs are performed by "The Short Circus," introduced by Morgan Freeman's soul disc jockey, Mel Mounds.

Other songs have been contributed by musical satirist Tom Lehrer, such as the catchy "Silent E Song," and Clark Gesner, author of off-Broadway's "You're A Good Man, Charlie Brown."

"The Electric Company presents a good cross-section of all kinds of music, with an emphasis on rock," Conner feels. "I take into consideration what the scene is, and pick a style -- it may be vaudeville, a soft lullabye, a heavy rock tune. Then I sit down and think about what the melody could be and I get a first phrase, a musical phrase. I rearrange the lyrics so that they scan, or fit into the structure of the song." Writing music for children, especially in a show designed to teach reading, has its own special techniques, Conner has found: "You try to put the words being taught on the strong beat."

The song doesn't end with writing the score and Conner credits the studio team with lending his songs strong choreography, costuming and direction. "A lot of songs I've done, like 'Fiddler on the Chair,' have been given good production in the studio and this adds to the enjoyment of the song."

The Cast Combines Fun and Teaching

"Performers on The Electric Company receive a rare chance to play a wide variety of roles," says Rita Moreno, in commenting upon her motivation for participating in the company. "I love vaudeville, and here was a chance to try out a whole series of zany characterizations. On the other hand I knew we were offering something more than just entertainment. We were helping children who couldn't read. My daughter, who was the age of our target audience and was having great difficulty with reading in school, learned to read from watching The Electric Company. Can you imagine how exciting that was, to have my child learn to read from the show I was appearing in?"

Moreno, who would like a return to the first season's eccentricity and outrageousness, says one thing she objects to is having to point to the words in the middle of a skit. "There are times when you can do it and it's all right," she explains,"but there are other times when doing it breaks your concentration and destroys the whole moment."

But she is generally exuberant about the show. "I did one skit as 'Pandora, the Brat' that was marvelous. It was a skit to teach

punctuation. The little girl is very tiny on the screen and behind her are these huge letters that spell WOW. There's a period after the WOW. She does a very bad tap dance and the voices say a very lethargic, 'wow.' She gets quite miffed so she does the dance fancier. Again the voices say a droopy, 'wow.' She turns around and looks at the word and sees what the problem is. She goes and kicks off the period. Then she brings in an exclamation mark and puts it after the word. She dances again and this time she hears a rousing 'WOW!' What a graphic way to teach something! It's pure genius."

Other celebrities have performed on The Electric Company without special billing. During the second year such TV luminaries as Flip Wilson, Lily Tomlin, Carol Burnett and Lorne Greene appeared without compensation delivering one-liners. "It didn't test out well," recalls producer Andrew B. Ferguson Jr. "The kids didn't seem to respond to the celebrities as I thought they would and we discontinued them after the second season."

Informing the Public: A Nationwide Campaign

An intensive nationwide effort was undertaken to inform young TV viewers, teachers, parents and the general public about the purposes and content of The Electric Company. For example, before the first season premiere, a paperback book outlining the goals and techniques of the program was mailed to reading teachers throughout the U.S. and a half-hour special about The Electric Company aired on commercial television before the premiere on PBS. Newspapers, magazines and TV gave considerable attention to the experiment during the production stages and at the time of the broadcast debut. The entire awareness campaign won CTW a Silver Anvil Award in 1971 from the Public Relations Society of America.

"It was an exciting, hectic and rewarding first year," Sam Gibbon recalls. "Gradually production began to pick up speed and the scripts became easier to do. We finished up the year exhausted, relieved and quite pleased with ourselves."

Evidently, others were, also. In 1973, the seven Electric Company writers won an Emmy from the National Academy of Television Arts and Sciences for best writing in children's programming. The show garnered another Emmy in 1974 for art direction by Ron Baldwin and set direction by Nat Mongioi. The seven writers, Baldwin and Mongioi have continued to contribute their talents to the series through its sixth season.

BUILDING ON EXPERIENCE: OVER THE SEASONS

A handful of slower readers gathered in a corner of a one-room rustic schoolhouse in Vermont to watch. A modern school in Tennessee videotaped the show off the air and fed it back to youngsters on sets upon demand three to four times daily. A South Dakota Indian reservation school reported tardiness dropped from 80 late arrivals a week to almost none when the show was aired on the school set at 9 a.m. A teacher wrote the producers: "Thank you for giving me a 'third hand.'

Classes like mine really enjoy the shows and this gives me a 'break' in which to work with individual children. Keep up the good work!"

In such varied ways, The Electric Company entered the lives of children, teachers, school administrators and parents across the U.S. on October 25, 1971. The debut was seen on the 200 stations (there are now 265) of the newly created Public Broadcasting Service. Most stations ran the show twice a day; many repeated it on weekends. Within a matter of weeks the program was being watched in one of every four elementary schools in the U.S. An estimated two million youngsters were watching in classrooms, and another estimated two million were watching at home.

Problems in the First Season: Pedagogy and Pace

Andrew B. Ferguson Jr., then studio producer and later series producer, recalled some problems in teaching blending during the first season. "The blending techniques we modeled that first year were a little rigid and archaic. We broke up blending too much. You don't read cat c-a-t. Reading is a more fluid process. So we tried to find more fluid ways of blending."

The first season struck some observers as too ambitious and too frenetic. Each half hour featured five or six teaching goals, a fairly high decibel level, an abundance of rock and roll music and a fast pace. As Dr. Jeanne Chall, professor of education at Harvard University's Graduate School of Education and a member of the show's advisory committee, comments: "There was too much noise, too much going on, too much rock and roll and too much confusion."

1972-73: A Very Short Book Opens

After reviewing the first season results with the advisory board, the producers introduced changes that included a more relaxed format. There was an effort "to teach more by teaching less."

"For the second season," relates Dr. Vivian Horner, then director of research, "we cut down the number of teaching goals in each show from five or six to three or four. We also reduced the noise level and the frenetic quality of the program. Some teachers complained that the kids were getting so excited that they were difficult to handle after viewing the show."

A variety of strategies began to be employed to teach the same word. A word such as "cat" could be treated first as a group of letters, next as a syllable unit in a larger word, and finally as part of a phrase or sentence, or the order could be reversed.

Attractive presentation of print on the screen remained a problem. The producers tried boxing the print to make it more eye-catching but continued to place it at the bottom of the screen. The device provoked writer Sara Compton to suggest the producers were putting her words in "little coffins."

Other season changes included:

--dropping "Love of Chair," a parody of daytime soap operas. The episodes, featuring Skip Hinnant as the boy who seems content to spend his life in his chair, were the hit of the first half of the first season. But then viewer reaction began to turn. "We began getting anguished letters from kids," Gibbon recalls, "saying 'Won't you please let that kid out of the room!'"

--redefining certain characters to give them the freedom to appear in a wider variety of comical situations. "J. Arthur Crank," originally limited to being an annoying voice on the phone, began to appear on camera as a regular member of the cast. Word detective "Fargo North, Decoder" began to leave his office to make house calls, still in hot pursuit of the meaning of mysterious messages.

--adding short parodies of fairy tales and nursery rhymes. Several advisors had suggested that, while reading sentences and signs was important, it would also be useful to emphasize that reading involves books. So "A Very Short Book" was devised, using the sophisticated technique of chroma-key. Each "page" depicts a sentence from, for instance, "Little Miss Muffet." As Luis Avalos narrates, Lee Chamberlin as Miss Muffet is shown, in sequence, innocently eating her curds and whey and then being beset by the Spider, played by Jim Boyd. The result is a blend of two media -- TV's special effects and the art of storybook reading -- paced to give young viewers a chance to read lines from a familiar fairy tale. The traditional ending, however, is lampooned in typical Electric Company style. "What the heck is curds and whey?" asks the Spider. "Beats me," replies Miss Muffet. "Tastes kinda yucchy. By the way, what's a tuffet?"

1973-74: Progress With Print

With the third season came important developments in the handling of print on the screen. Eye-movement research conducted for CTW by Dr. Kenneth O'Bryan and Dr. Harry Silverman of the Ontario Institute for Studies in Education revealed that the least desirable place for print is at the bottom of the screen, the most desirable being the top third of the screen. The research involved reflecting a beam of light from the cornea of the eye of the viewer to determine precisely where on the screen the viewer is looking. Producer Ferguson adds: "We also realized that instead of having the print 'accompany' the action, it would be better to make it a part of the action -- to use print as though it were another actor. We began to have the actors refer to the print and even point to it."

The eye-movement research also verified the effectiveness of the silhouette blending segments. Dr. Palmer explaines, "We found that when a face with clearly defined features appears on the screen with the print the children's eyes invariably focus on the faces. With the silhouettes the kids look at the print. The eye-movement results dramatically improved our ability to display print so that it will be read by poor readers."

"Letterman" made his debut in the third season, a cartoon superhero who flies through the air to resolve dilemmas posed by the word changes of the "Evil Magician."

1974-75: Spider-Man Joins the Cast

The fourth season was marked by the introduction of the comic book superhero Spider-Man. Since he didn't talk on the program, children would have to read what he was thinking in the balloons over his head, much the way they would read his thoughts in a comic book. "The eye-movement tests showed that the balloon device was a most successful way for getting the kids to read," comments Ferguson. Spider-Man began to move within the frame of a chroma-keyed comic strip panel. The result again demonstrates how different media can reinforce one another: a live character has his thoughts portrayed in print in a comic strip on a visual medium.

1975-76 and 1976-77: An Electric Company For All Seasons

The fifth and sixth seasons of The Electric Company are intended for continuing use through 1980 as a television supplement to the teaching of reading. Material with proved educational value from past seasons will be incorporated into the two years of new programs. "We hope the programs will be a kind of classic," explains Dr. Horner, "which can be used in reruns over several years. The program will be geared more than ever to an in-school audience."

The plan calls for alternating reruns of the 260 episodes of the last two seasons for the succeeding three years as new generations of second-, third-and fourth-graders move through their early reading curricula. Research and outreach will continue through the next five years and the results will determine whether new production is required.

One important decision for the fifth season was to use children more extensively than before. During the first four seasons the youngsters were essentially performers -- rock-and-roll singers, dancers and musicians. The Short Circus, with four of its five members new for the fifth season, is seen acting as regular members of the cast.

New for the sixth season is a satire titled "The Six Dollar and Thirty-Nine Cent Man," starring "Steve Awesome," a hero whose "macro-bionic eyesight" enables him to look at a message and project it in big print onto the TV screen. Another new character, "Clayton," will introduce curriculum goals through clay animation. The producers will also include "curriculum clusters" -- grouping of segments that deal with the same reading skill. They also plan new applications of the TV telestrator, a machine that creates the effect of words being magically written on the screen.

RESEARCH: THE SCIENCE BEHIND THE SCENES

"The Electric Company has recorded a remarkable advancement over previous trends in school innovativeness. If only in terms of the speed and scope of penetration of elementary schools of all kinds, The Electric Company must be considered a highly successful venture."

--Drs. Robert E. Herriott and Roland J. Liebert of Florida State University, principal investigators for nationwide studies of in-school utilization of the series.

As with all Children's Television Workshop projects research plays a crucial role throughout the development of a program. This has been especially true of The Electric Company, which is attempting to do what no other television show has ever undertaken -- teach reading skills to children who are having difficulty learning them in school. Lacking precedent, the producers of the series have had to rely on their own continuing research.

Putting Producers in Touch With Viewers

Two years before The Electric Company went into production CTW's vice president for research, Dr. Palmer, and the program's then assistant research director, Dr. Fowles, began a series of formative testing to provide feedback to the producers. They were later joined by Dr. Vivian Horner as director of research. "This research," elaborates Palmer, "consists of testing experimental TV materials to help the producers improve the appeal and effectiveness of the series.

"We experimented with existing television fare. One method of testing was to use a distractor. We have a child in a room looking at a monitor. Off at a forty-five degree angle from the television set we have a slide show going. There's a new slide every seven-and-a-half seconds. We keep a record of the times when the child, or children, can be distracted from the television set.

"Not only did we learn about the kinds of material to use but we arrived at other significant data. We found that The Electric Company viewers (elementary age) are much more abruptly selective about what they view than the Sesame Street-age children (preschoolers). When you look at the distractor graphs for the Sesame Street-age children you have long slow curves. By contrast, viewers of The Electric Company target-age show sharp fluctuations. You can grab their attention quickly, then very abruptly they'll turn away to something else. We decided these kids have a very sophisticated built-in monitor which is alert to the television set even if they're off giving their attention to something else. All this speaks for frequent scene changes."

Once a few Electric Company segments had been put together, there was continued research to find out the best ways of blending the entertainment and educational content in a coherent, non-competing fashion.

"We found that if a character was in motion," relates Dr. Palmer, "a hula dancer for instance, and was talking, it was unlikely the child would pay attention to the words unless you stopped the motion. We learned a lot about repetition -- how many times you can repeat a particular segment without the child's attention dropping off. Within a short space of time you can't repeat too much. But if you repeat until the child becomes familiar with the segment, then leave it out for awhile, and later put it back, its appeal goes back up quite strikingly.

"There has been extensive testing for comprehension," he continues. "We'll go out with some material and a tape machine, and run a segment up to a certain point, then freeze the image. We'll ask the children questions about what's on the screen to indicate whether or not the child is comprehending what he is seeing."

The eye-movement experiments, carried out by Dr. Kenneth

RESEARCH FEEDBACK

In studying the reactions of children to The Electric Company, and in finding ways to improve the program's content, the series' research staff led by Drs. Vivian Horner and Barbara Fowles has pioneered many new methods and useful findings in the field of television research. Each year, formative research -- so named because the results help to form and shape the program -- is conducted to ascertain the appeal and comprehensibility of characters and formats in the shows.

Individual and group observations using the "distractor" and "freeze-frame" techniques discussed above, are continually carried out by researchers Cornelia Brunner, Hyldа Clarke and Ada Simonetti and, in the past, Steve Kildare, Nancy Kozak and Helen Lazarus.

Their reports to the production staff on such matters as the low attention and comprehension of viewers to "Man on the Street" resulted in the segments being dropped from production.

In addition to their research responsibilities, they also provide input to production by reviewing scripts, monitoring studio production, consulting on animation and advising on the placement of print. Other areas of formative research have included:

--Attribute research by Dr. Langbourne Rust and others, developing qualities of program segments that account for high and low amounts of attention and verbalization. These attributes, such as "strong rhythm and rhyme" and "involving children" are then discussed in conference with producers.

--Verbal reporting of viewers, and whether their verbalizing is a valid indicator of their learning.

--The kinds of humor understood by young viewers and ways in which humor can be used to enforce and not distract from the learning message. "The kids get the most out of slapstick," reports Dr. Fowles. Marcy Glanz adds: "We found that when a sight gag, a

O'Bryan, have been of crucial value. "Since the apparatus reflects a beam of light off the cornea of the eye and into the camera," explains Dr. Palmer, "you can look through a camera and find where the child's eye is focused on the screen, within the space of a dime. That testing helped us to determine how much print to put on the screen, how many different words and letters, what size, where to place them on the screen, and how long to leave them on the screen. All this in order to maximize the chance that the children will read it."

Nationwide Impact Studies: The Electric Company Does Teach

The ultimate question behind production and formative research efforts is: does The Electric Company make any difference? Unless the series was helping children in the target audience with their reading problems the project could not be deemed successful. Because reading is difficult to teach, even in the classroom, and because these

verbal pun and flashing print are all on the screen at the same time, the kids look at the sight gag. Our suggestion was to make sight gags revolve around the print through, say, actors holding the words."

--Viewing patterns and learning of preschoolers watching The Electric Company. Surveys showed that many three-, four- and five-year-olds were watching. Dr. Natalie Sproull of Western Illinois University conducted a study for CTW showing that while very young children, after an eight-week exposure to the series, learned the formats and characters of the show, most were not yet able to acquire basic reading skills within that limited period of time. Studies of preschoolers given more extended exposure to the series are being contemplated.

--Program attributes having the most appeal and effectiveness with readers in the lowest ten percent on standardized tests. Drs. Jeanne Chall and Helen Popp of the Harvard Graduate School of Education are carrying out this study.

--Interaction of the teacher with viewers while the show is on. The Research and Community Education Services Divisions at CTW are collaborating to study ways in which teachers can focus their students' attention during The Electric Company to give them the maximum benefit of viewing.

--Development of a coding instrument for the range of responses found during classroom observations, done by a research team headed by Dr. Courtney Cazden at Harvard.

--Experimentation with cutting down the number of goals per program, reorganizing them in various ways, devices to encourage more participation by viewers. Special experimental shows have been edited together for very slow readers to include less goals and a slower pace.

students were already behind grade level, it was easy not to be optimistic about the prospects.

As with Sesame Street, The Electric Company again proved the extraordinary power of the medium to teach even the difficult skills of reading.

The initial and long range impact of The Electric Company was documented by tests conducted in the series' first and second seasons by an independent agency, the Educational Testing Service of Princeton, New Jersey. Known as "summative" or impact research, the first year of study took place in 100 elementary school classrooms in each of two cities, Fresno, California and Youngstown, Ohio. The second study was also conducted in those two cities, but in fewer classrooms. The sample was randomly divided into viewing and non-viewing classes.

Both the first and second year studies show clearly that the

ONE SCHOOL'S CASE HISTORY

The following in-depth experience of one school is an illustration of the kind of progress that can be made through supervised Electric Company viewing.

In 1970, in the Lincoln Heights School District in Lincoln Heights, Ohio, one of the nation's larger all-black communities near Cincinnati, 75 per cent of the pupils were reading well below national reading achievement levels. Some were two years behind their peers in other school districts. Today, with the help of The Electric Company, the district has reversed a downward curve in reading achievement among second- and third-grade students.

In 1972, at the suggestion of WCET-TV, Cincinnati's public television station, an experimental closed circuit videotape system was installed at the Lincoln Heights Elementary School. Since the system can be accessed by teachers at any time, it offers them more flexibility in fitting the reading series into their classroom plans.

A year after use began, second-and third-graders attained reading achievement scores surpassing those of their non-viewing peers of earlier school years. In 1974 new tests of the same pupils found that the effectiveness of the videotape system and The Electric Company had continued. In fact, in some instances, learning and retention were even stronger than expected, particularly for the 1972-73 second graders.

School principal Ernest Ector reports that while other efforts to improve reading instruction at Lincoln Heights produced some gains, conclusive improvements began after the videotape system was installed.

After viewing The Electric Company on the system during the 1972-73 school year, second-graders tested that spring averaged five months ahead of their non-viewing counterparts of the previous year in vocabulary skills and six months ahead in reading comprehension. Third-grade scores were nearly as impressive -- five months and three months ahead, respectively. Second grade is considered The Electric Company's primary audience

exposure to a single season of The Electric Company contributes to significant gains in reading skills for viewers in comparison to non-viewers. This holds especially true for the series core target audience of second graders in the lower half ot their class in reading achievement and is observable for 17 of the 19 major curriculum areas taught on the show and tested by ETS.

"The children were tested before the show went on the air and they were tested after," explains Dr. Palmer. "Some classrooms were selected at random to view the series, and others as non-viewing controls. The results were very good. They showed that gains were substantial for those who watched the program. The tests were carried on through the second year so that some of the children were viewing for two consecutive years. Others viewed only one year and others not at all. The greatest gains occurred in a single year, in that those who viewed it for two years didn't seem to gain much more than those who viewed for one."

The study also found that the series had a measurable impact

and the level experts consider crucial in heading off early reading problems. By the school year 1974-75, the third year of the project, the first-, second- and third-grades were reading at, or above national norms.

The six channel videotape system, with one channel devoted entirely to The Electric Company, was fed into 23-inch color monitors in each classroom. There are six headsets in each room for special instruction. A central operator can tape a new Electric Company program daily and repeat it throughout the school day.

Teacher reactions were positive. Mrs. Janet Watkins, a third grade teacher commented, "The kids can be saying, 'We don't get it.' to something in the textbook or on the blackboard, yet understand it immediately when it is demonstrated on The Electric Company. They definitely relate better to TV and recall what they see weeks and months later."

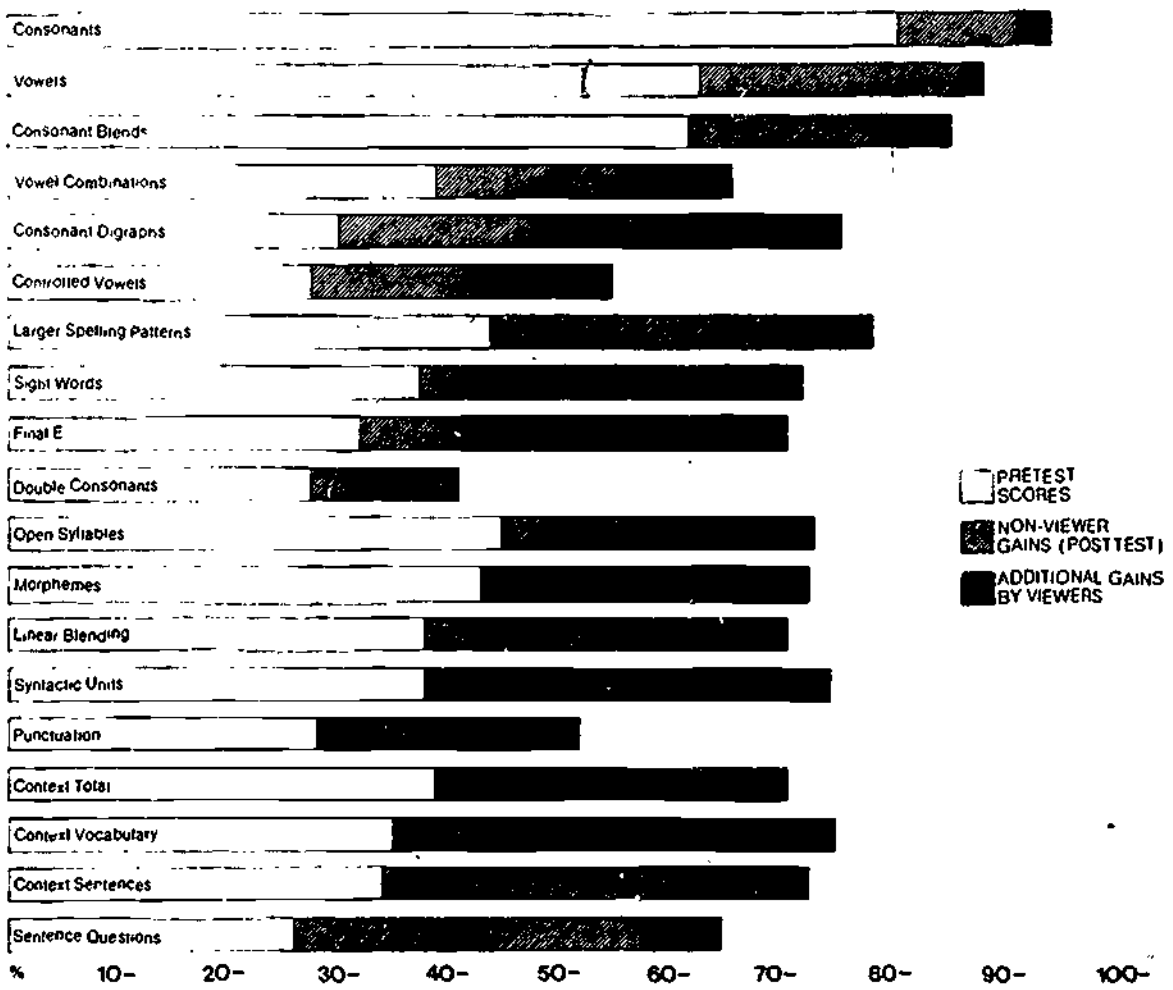
That observation was echoed by a second grade teacher at Lincoln Heights, Tom Hinkle, who said, "The Electric Company stays with the kids. Weeks later they remember segments with materials I'm trying to teach. They see it at school and go home and watch it again. This type of thing is great reinforcement."

The school librarian, Mrs. Anzola MacMullen, added, "I've seen the effect The Electric Company has had on our students. It's most obvious in the way the kids are using the library. Circulation is up and there is much greater interest in using its facilities."

"The most important finding to come out of Lincoln Heights is that kids who a few years ago were making virtually no progress in reading are now moving ahead at national levels of achievement," comments Dr. Horner. "This experience demonstrates that television can have a decisive impact as a teaching tool when the school delivery system is flexible enough to permit teachers to gear educational TV programs to their curricula."

VIEWER GAINS

The chart below reflects findings by the Educational Testing Service among second grade viewers in Fresno, Calif. The bar graphs represent the 19 curriculum goals taught by The Electric Company in its first season. ETS reported that these target viewers -- youngsters who at pretest scored in the lower half on a standardized reading test -- scored significantly higher than non-viewers (in 17 of 19 subtest areas and slightly higher in the remaining two areas in the evaluation of the television series). The chart shows percentage of each subtest answered correctly at pretest, the percentage of gains made by non-viewers during the study, and the additional gains made by viewers. Across the range of subtests, viewers gained from 2.5 per cent to 19 per cent more than non-viewers on the questions passed after pretest, an average gain by viewers of 8.7 per cent. The Fresno viewers were among 8,363 grade school pupils who were tested by ETS before the series began and again at the end of the 130 daily, half-hour programs that made up the first broadcast season.



on pupils in the first grade who were not within the series' target audience. Although somewhat smaller than for first and second grade levels, gains were also noted for students in the third and fourth grades.

The gains registered were for all groups including Hispanic, black, white, male and female. Teacher questionnaires also gave the program high marks for its usefulness in teaching certain reading skills.

The results of the first year study caused ETS to conclude that "Television can be an effective tool in helping first through fourth graders learn to read."

But what about the long-range impact of the program? Would those early gains stay with the pupils?

That question was answered at the end of the series' second season when the ETS study found that the gains from the first season not only survived the summer recess, (when the reading skills level of poor readers traditionally decline and those of good readers remain stable or increase) but were still apparent a full year later, with no additional viewing during the second season.

The second year study also examined the question of whether the program helped increase reading skills among core target audience youngsters.

The answer, again, was 'yes.' The ETS researchers report that in both Fresno and Youngstown the study revealed a noticable increase in the number of youngsters in each viewing class no longer classified as "target" because of scores below national norms in reading.

Wide Acceptance and Use In Classrooms

Although the producers of The Electric Company had hoped that some in-school utilization of the series would occur, they did not anticipate the immediate and widespread school-viewing that took place.

Dr. Robert E. Herriott and Dr. Roland J. Liebert, both then at Florida State University, conducted nationwide surveys in conjunction with the Research Triangle Institute to assess the degree of penetration and acceptance of the series in the classroom.

The results were startling. Within two months of the series premiere, the show was being used by an estimated 18,811 schools -- almost a fourth of the nation's public and private schools containing grades two, three and four. In schools having full TV viewing capabilities (access to the broadcast signal and workable TV sets in sufficient quality and quantity), the penetration was even more pronounced: 45 per cent. Urban schools, especially, made use of the program -- 70 per cent of the large city schools with full TV capability tuned in the program. Altogether an estimated two million pupils were viewing The Electric Company at school.

The rapid adoption of the program in the classroom inspired

Dr. Sidney P. Marland Jr., then U.S. Commissioner of Education, to remark: "The extent to which American elementary schools put this new teaching aid to classroom use is truly one of the remarkable events in the history of instructional television."

The trend accelerated during the show's second season, according to a subsequent Herriott-Liebert nationwide study. They found that The Electric Company was used in one out of every three elementary schools in the U.S. (35 per cent compared with the 23 per cent who adopted during the same period in the premiere season). Again, the percentage was higher for schools with TV sets and access to the broadcast: 58 per cent of schools with full TV capability tuned in the second year, versus 45 per cent the first year. The new study put estimated in-school viewership at 3.5 million, with, according to Nielsen estimates, another 3 million youngsters watching at home.

Weak broadcast signals or lack of workable TV sets accounted for most of the non-users. "The cumulative effect of technical deficiencies is overwhelming. An estimated 48.7 per cent of the schools in the U.S. were unable to adopt The Electric Company because of these factors," Drs. Herriott and Liebert reported.

The extensive in-school utilization enabled the researchers for The Electric Company to obtain valuable feedback from teachers throughout the country. "We found out from teachers what they thought was good and how the children responded to it," says Dr. Horner, director of research. "They told us how they used the show in conjunction with their particular reading approach. Teachers helped us put together an Electric Company Guide, a publication that lets the teacher know in advance what curricula are to be presented on what days and also includes some follow-up exercises they might do." The biweekly guide has since been expanded into two volumes of classroom activity suggestions available before the broadcast season goes on the air.

BEYOND THE TV TO GRASSROOTS INVOLVEMENT

Simultaneous with production and research for The Electric Company, CTW has organized a nationwide campaign to reach seven-to-ten-year olds and their teachers in local towns and communities through special activities designed to maximize the educational impact of the series. Teacher workshops, summer tutoring projects and manpower training are among some of the outreach efforts conducted by CTW's Community Education Services Division and its nationwide field staff. These grassroots "reach and teach" projects have been carried out in 31 states and especially in areas served by hard-to-tune UHF channels.

"One of the areas where we have concentrated our efforts," explains Evelyn P. Davis, vice president for Community Education Services, "is in those communities where UHF (ultra high frequency) channels broadcast the show. These broadcast channels are often hard to find on the dial. We want to ensure that the word about the program's availability and its potential reaches those areas."

CES has developed joint educational ventures using The Elec-

tric Company through these channels:

--Cooperating with local school districts and colleges in establishing reading clubs in elementary schools to reach students experiencing reading difficulties. These clubs employ The Electric Company in their curricula and use teachers and college students to tutor their members. (One project is underway in the Los Angeles Unified School District with University of Southern California students as tutors.)

--Providing information to the instructional TV director at all PBS stations broadcasting the shows on the goals and use of The Electric Company. Their enthusiasm for the shows has greatly extended its adoption in the schools.

--Organizing media workshops for teachers to demonstrate techniques for using television and other media in the classroom. At these workshops, often requested by station managers, CTW staff members actively participate and provide Electric Company films, games, magazines and other materials.

--Working closely with statewide educational agencies and parent-teacher organizations to distribute material about The Electric Company.

--Encouraging teachers in large Spanish-speaking communities to use the TV series in English-as-a-second-language classes. Such efforts are underway in Los Angeles, Chicago, New York and towns in Texas and Massachusetts.

--Training teenagers to act as tutors for young viewers in an annual summer Neighborhood Youth Corps program in cities across the country. Originally funded by the Department of Labor and now by the cities themselves, this "youth-tutoring-youth" concept has resulted in meaningful summers for thousands of inner-city teenagers.

A Film Documents Classroom Applications

Several innovative outreach projects have been carried out recently and have proven highly successful. During the fifth season, 1975-76, CTW produced a film documentary vividly portraying the different techniques used by teachers around the country in adapting The Electric Company to their classrooms. Students were filmed watching the programs in class, and commentary was provided by teachers, principals and reading experts.

In the film, Mrs. Mary Bellinger's class in Lincoln Heights, Ohio, demonstrated one imaginative way in which the show has been incorporated into classroom reading sessions. Using a videocassette system, one-third of the class watches The Electric Company with earphones, one-third does blackboard exercises and the rest engage in a reading lesson, with the groups rotating assignments. The show "increases vocabulary and improves each skill," Mrs. Bellinger finds. "It has motivated the children to read more and encouraged them to check out more books."

For the documentary, producer Andrew Ferguson and director of research, Dr. Vivian Horner travelled to schools in Lincoln Heights, Denton, Texas, Erie, Pa., New Orleans and New York City. The film has been made available to all PBS stations many of whom broadcast it for use by school and community groups. CTW's Community Education Services also distributes the film to local groups for individual showings.

Other uses for the program are being developed in prison settings. At the Federal Correctional Institution in Fort Worth, Texas, children of prison inmates watch The Electric Company on visiting days with their parents, using the program as a format for parent-child interaction. At other FCI's in Lompoc, Calif., Alderson, W.Va., Butner, N.C., and New York City, inmates are receiving training designed to guide and reinforce their children's learning from The Electric Company. Plans are to expand the project to other correctional facilities.

J. Arthur Crank and Fargo North Dial Some Classrooms

Towards the end of the fifth season, cast members of The Electric Company talked to their viewers through special telephone hook-ups in 50 cities across the country. The experiment was designed to bring Electric Company characters directly into viewing classrooms. Rarely do children receive an opportunity to communicate with the television personalities they avidly watch at home, and these half-hour phone conversations, using special speaker extensions, were greated with extraordinary delight and excitement by students, teachers, principals and local press.

Luis Avalos, Jim Boyd, Morgan Freeman, Judy Graubart and Skip Hinnant spoke with classes in such varied locales as Bloomington, Ind., Tallahassee, Fla., San Jose, Calif., Pittsburgh and Phoenix. They fielded questions on the characters they play, their careers, how certain effects are done and much of the behind-the-scenes preparation for the shows. In Cynthiana, Ky., one third-grade girl said she practiced her questions all night. Mrs. Willi Sims, her teacher, reported, "It's like Christmas as far as they're concerned. There were no absentees today." Over ninety youngsters gathered around the telephone speakers in Lubbock, Texas. Because of this enthusiastic response, the classroom phone calls will be continued in the future.

English Language Help for Vietnamese Refugees

Along with Sesame Street, The Electric Company has also been used in English classes for Vietnamese refugees. From May to December, 1975, some 50,000 newly arrived Vietnamese and Cambodians received English-language training through a closed-circuit television system at Fort Chaffee, Arkansas. CTW loaned over seventy hours of videotape of the two shows to the project, conducted by Westark Community College and the Department of Health, Education and Welfare. Children, teenagers and adults viewed the programs and received English instruction from English-speaking teachers and teacher's aides fluent in their native language.

Harold Cameron, project director and dean of students at

Westark, found that the programs "could hold the attention of the youngsters and adults and were able to help teach some basic skills to the Vietnamese and the Cambodians. Some of the success we have had here could be attributed to the programs, particularly The Electric Company."

New and rewarding uses are always being found for The Electric Company, wherever children and adults are in need of reading or English-language skills. Recently, Choctaw Indian children on a Choctaw, Miss. reservation began to use the program for the acquisition of English as a second language. Parent-teacher workshops have been held for other Indian parents in Albuquerque, N.M., and Yakima, Wash. Manpower training for illiterate teenagers and adults in Philadelphia, workshops for Spanish-speaking migrants in Hampton, Va., a Boy's Club summer tutoring project in Boston -- all have found The Electric Company helps meet the needs of their different audiences. CTW's Community Education Services Division will continue to assist in the adoption of The Electric Company at the community level for children and adults of all ages.

FROM TUBE TO PRINT: NEW TOOLS FOR READING

> "Sesame Street and The Electric Company, created as programs to help build learning skills of young children, have proved spectacularly appealing to their audiences and effective in meeting their objectives."
>
> --The Fourth Revolution: Instructional Technology in Higher Education (Carnegie Commission on Higher Education)

The Electric Company has demonstrated that the techniques of television can help youngsters who are failing to learn to read. But its creators didn't stop there. CTW's pioneering research and production efforts have spawned a number of multi-media products to help children continue to develop the reading skills learned from The Electric Company. The same careful research which goes into the creation of the TV shows has aided the development of these multi-media materials.

Two Sesame Street/Electric Company Reading Kits

A major thrust in this area has been the creation of a line of multi-media supplementary kits which contains audio film strips, audio cassettes, four-color printed material (including comic strips, mini-books and activity books) and games, all intended for classroom instruction for reading. The kits, based on Sesame Street and Electric Company characters and themes, are produced in conjunction with the Addison-Wesley Publishing Co. The first kits entered the nation's schools in 1975.

One of the two kits uses Sesame Street characters to focus on pre-reading skills for preschoolers and first graders. The other,

for older children in the primary grades, stresses sentence comprehension through Electric Company formats. The kits are essentially support materials designed to reinforce and give practice in specific skill areas that often give primary grade children the most trouble. The Sesame/Electric materials have been designed for general classroom use, independent of in-class viewing of the programs.

A Magazine, A Guide/Activity Book and Spidey Super Stories

The Workshop also publishes The Electric Company Magazine ten times a year and distrihutes it through subscription and newsstands to 250,000 readers. The June 1976 issue, featuring a cover photo of magician Doug Henning levitating June Angela, a member of The Short Circus, atop the World Trade Center had a record print run of over 300,000 copies. The magazine includes games, puzzles, comics and other activities that can be done at home by viewers.

The Electric Company Guide/Activity Book, actually two volumes, each containing more than 200 pages, is oriented toward teachers and contains curriculum goals for each Electric Company program as well as hundreds of puzzles, simple crossword games, songs and suggestions for teachers. More than 50,000 teachers have purchased the Guide so far.

The natural appeal of comic books is being utilized by the Workshop to help youngsters carry the interest sparked by the TV series over to print matter they see in their daily lives. To achieve this transition, CTW in conjunction with Marvel Comics, has created the comic book, Spidey Super Stories, which is distributed monthly on the nation's newsstands. Again, CTW's research team assisted the publishers in creating an educational as well as entertaining product.

Children in the Boston area can read an Electric Company comic strip that appears each Sunday in the Boston Globe. A product of the joint efforts of CTW, Massachusetts Educational Television, the Boston Globe, and a local advisory committee of teachers, professors and community leaders, the comic strip has become a popular item with viewers in the New England area. According to Gregory R. Anrig, Massachusetts Commissioner of Education, "the strip has been more successfully received than we could have imagined. Its overall tone is certainly educational, and it employs innovative and creative devices to promote learning." A survey of readers of the comic strip netted 4,000 responses during the first week and showed substantial readership in smaller towns and communities throughout New England.

THE ELECTRIC COMPANY GOES AROUND THE WORLD

Educators in other English-speaking countries have watched with interest the impact of The Electric Company on the reading skills of the American youth.

In 1975 the British Broadcasting Corporation aired The Electric Company in Great Britain as part of an experiment to help combat a rising illiteracy rate among ten-to sixteen-year-old potential high school dropouts. The program was the first ever imported by BBC Schools Television

for use in British schools.

"The number of non-readers leaving schools in the United Kingdom is terribly high," says Ronald Smedley, executive producer for BBC School Television Service. "The Electric Company should help youngsters who have dropped out of the struggle to learn to read and to get back into the fight. The Electric Company is excellent. It has punch and this is just the time we need it in Britain." The experiment is continuing through the spring of 1977.

Meanwhile, The Electric Company is also being seen in 20 other countries -- Antigua, Aruba, Australia, Barbados, Bermuda, Canada, Curacao, Gibraltar, Hong Kong, Ireland, Jamaica, Liberia, Malaysia, New Zealand, Nigeria, Saudi Arabia, St. Kitts, St. Maarten, the Phillipines and Trinidad and Tobago.

SOME REACTIONS FROM TEACHERS, PARENTS AND CHILDREN

Shortly after its debut, reaction from parents, teachers, educators and young viewers began pouring in from all over the nation.

In Northfield, Mass. at the small Linden Hill School for boys having "a massive block in reading skills," the co-director, Mrs. Penny Hayes, reported, "The show's direct appeal to the basic teenage longings -- motion, excitement, color and witty dialogue makes the learning process fun."

In Alexandria, Va., Dorothy Kellman Samenow, a remedial reading teacher, exulted, "What a pleasure it is to watch children learn the difference between 'kit' and 'kite' from a snappy little jingle sung by a rock band of 12-year-olds rather than having to drill phonics rules for months! Can you imagine the thrill for a teacher of seeing a child read 'The boy is sitting' if he has never read a whole sentence in his life?"

"Thank you, thank you, thank you for the reading ability my boy (11) has, because he never misses your program since it began," wrote Mrs. Joan Linehan of West Palm Beach, Florida. "He has a learning disability and reading is no problem for him."

"As a school teacher and writer of both adult and children's books, let me commend you on your new show The Electric Company," wrote Sean O'Leary of Buffalo, New York. "I teach in an area where the youngsters are black, white and Puerto Rican and most are under-privileged. The Electric Company and Sesame Street may now join hand-in-hand in being future members of the Children's Television Hall of Fame."

Mrs. Edna Wohlberg, ESL coordinator at Washington Irving High School in New York City: "My English-as-a-second-language classes are very much interested in The Electric Company. One very important reason is the make-up of the company itself. It is very satisfying to Spanish-speaking and Chinese-speaking girls to see people of their background on a program where those people have become experts in the use of English!"

Judith Line, a first grade teacher in Bartlett, Ill., wrote:

"I would like to send you my congratulations on what I believe is truly a fantastic educational program. I have also felt much enthusiasm from the children's parents. As a teacher, the program has given me many ideas on how to present different concepts to the children. They especially like the song about all the signs you see when you are out driving."

Ms. Nora S. Finley, a first grade teacher from Santa Barbara, Calif., reported that "Last year was the best year I've had in reading, in all my years of teaching, and I want to thank you and The Electric Company for making it possible. With all the stress that the schools are putting on readiness and reading in kindergarten, your program is perfectly suited to the first grade."

TEACHERS' ASSESSMENTS

The Herriott-Liebert studies conducted during 1971-73 found warm responses to the program from many teachers. Among the major findings for their nationwide sampling in the second season:

--The teachers gave the series high marks for its effect on the reading skills of their pupils; 87 per cent of teachers reported "very favorable" over-all opinions of The Electric Company.

--The teachers also gave the series high marks for its effect on the reading skills of their pupils; more than 85 per cent of the teachers reported some gains in specific reading skills which were directly attributable to the program.

--Specifically, 36 per cent of teachers noted a "great improvement" in the ability of their typical pupils to decode words as a result of watching the series; 25 per cent noted "great improvement" in the ability of students to spell words; 38 per cent found "great improvement" in basic sight vocabulary.

Here are some of the sample comments teachers wrote about "The Electric Company on a questionnaire used by Herriott-Liebert:

--"The Electric Company is very interesting, enjoyable and beneficial, not only to the students but also to the instructor."

--"It is useful to all my pupils. It is a review of sounds for brighter pupils and makes concepts easier for my slower ones after viewing the program."

--"Very good general application to phonics. Drill is especially good, language skills are very good."

--"Please accept our appreciation for your wonderful efforts and the delightful performances of your entire cast. While evaluating the effect of your program as being most systematically planned but a bit frantic in its effort to hold interest, we think you

Professors Feldman and Chall Discuss The Program

Dr. Shirley Feldman of the School of Education at City College of New York and a member of the Board of Advisors described her experience with The Electric Company. "I work mostly with inner-city kids, and I suspect they're not that different from other kids in the country. Television is their medium. They've been brought up on it. The kids like the comedy and the skits and the music. The music particularly has been used in so many creative ways. For example, what I've observed in the kids at the reading center at CCNY is that there's a lot of confusion in the conventions of reading. They mix up the various punctuation marks. They just haven't had enough practice dealing with them. A song like 'The Punctuation Song' is likely to set that for

are succeeding and hope you will continue for a long time."

--"Makes reading much more meaningful."

--"It is good enough that it should be a part of all primary reading programs."

--"Excellent -- Also, since we live in a white suburb, the show helps children relate at least a little to people of a different race."

--"High interest levels and pupil involvement with participation as a group without the risk of individual response. Everyone reads successfully and feels good after this program."

--"I am very satisfied with the program. The children look forward to this period."

--"I am sometimes distressed by the use of poor grammar and English that sometimes is employed -- It may make the characters funnier or whatever but it is hard after spending so much time on proper grammar to then hear it misused. I have noticed this occurring less than before however. I don't know if it's intentional or not."

--"All my children enjoy this program equally. The reading levels range from 3.0 to 6.9 plus at this time -- yet not one is bored or not interested."

--"Sometimes things are repeated too much -- causing occasional boredom. I commend the actors and actresses for their fine part in this program.

--"The children that need it most don't watch it long enough to get the value from it."

--"Thank you for giving me a 'third hand.' Classes like mine really enjoy the shows and this gives me a 'break' in which to work with individual children. Keep up the good work!"

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many of them very strongly.

"One thing that one must say is that this show has opened up a whole new area of research in reading. The eye-movement work is unique. The research has been applicable to the magazines too. It has changed the visual arrangements on the paper. Having come from the world of primers, which for the most part ignore all this, it's very exciting."

Dr. Jeanne Chall, a well-known scholar in the field of reading and a member of the advisory committee, expresses disappointment in that the series doesn't incite more interest in reading books. "What it needs," she says, "is cleverness and the imagination to show the marvels of why letters are what they are. Easy Reader is wonderful but he just reads words. He reads words on signs, but he doesn't really read. The producers tell me that it's boring to read books on television but I still say there's a way of doing it.

"But I think there have been some lovely things," she adds. "I love the '2001' song and the 'Push, Pull, In, Out, Song' is delightful. They have done some wonderful things but there is still more to be done."

The most persistent complaint about the series concerns its use of regional, ethnic and non-standard dialects. Many teachers complain that it's confusing to children who are in the process of learning correct English. After considerable discussion and debate, the staff decided in favor of a variety of dialects. "The rule that we made was that when dialects were used, they had to be appropriate to the situation," explains director of research Dr. Vivian Horner. "Language occurs in a great number of varieties. What's important is that fact be acknowledged without distorting the written form which is in fact constant. All performers who speak in a particular dialect in one segment also speak standard English in others. So you might have a hip black character in an appropriate setting saying, 'My daddy he go to work' and the same actor as Prince Charming in the next, speaking archaic English. Orthography is always standard."

Letters From Children

The producers have received thousands of affectionate letters from youngsters. "I'm a real big fan of yours and I watch you every day that you're on TV," wrote Lisa Dusenbery of Liberty, Mo. "Will you please keep The Electric Company on the air till the end of June? We watch it every day and it helps us learn," penned Leandre Ballium of Philadelphia. "Can you make a more advanced show than The Electric Company? I am one of those kids who can take more of a challenge," complained Mark Sander of New York City.

Fourth-grader Kelly Lynch from Garden City, N.Y. wrote "I watch your show every day I can! Thanks to you I learned to read." Donna Iverson, age nine, wrote: "I love your show. What I like is the ones like 'Do Not Bother This Giant Person.' And I like Fargo North and Allison when the note that he got said 'Your desk is on fire.' I like Letterman." She concluded: "If I made any mistakes in this not, plese (sic) write me."

There are even some older viewers who watch as ardently as

the younger ones. "I dearly love The Electric Company," Mrs. Virginia Collin of Olympia Fields, Ill. confided. "I would be embarrassed to tell you my age. Don't tell any of my friends. They might find out I watch Sesame Street, too."

SIX YEARS OF THE EXPERIMENT IN RETROSPECT

At the Workshop, those involved with The Electric Company from its earliest stages have found it a learning experience in itself. The constant development of the series has taught new and valuable lessons about the potential of the medium to entertain and educate, in both home and school settings.

Dr. Vivian Horner has found it exciting to discover that television is not considered anathema by a majority of teachers. "We learned that most teachers welcomed The Electric Company and were willing to accept the idea of TV in the classroom as well as the notion that learning can be enjoyable."

"We found out you can teach verbal skills using visual techniques," says advisory chairman Dr. Gerald Lesser. "It's a little paradoxical but nobody says you have to teach verbal skills by solely verbal means. The theory behind it is to give the kids who don't make it one way, another way."

"The Electric Company is certainly the most painstakingly developed educational vehicle the medium has known," recalls David Connell, vice president for production. "It was considered almost antithetical to be using the medium to teach reading. We were trying to encourage kids at home, on their own, to go through the very difficult process of decoding. In many ways, The Electric Company has been more revolutionary than Sesame Street."

Samuel Gibbon adds: "The past six years of The Electric Company have served as a unique working laboratory. The knowledge we've gained about visually modeling the process of blending can be generalized to other content areas and will undoubtedly advance future efforts to tap TV's potential for educating and entertaining children."

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For additional information call or write: Public Affairs Division, CTW, One Lincoln Plaza, New York, N.Y. 10023 (212) 595-3456

"Perhaps no other innovation (The Electric Company) in the history of education has made its presence felt among so many people in so short a time.....The extent to which American elementary schools put this new teaching aid to classroom use is truly one of the remarkable events in the history of instructional television."

Dr. Sidney P. Marland, Jr.,
U.S. Commissioner of Education